**AI for Accessibility and Inclusion**

Recommendations Report

**Table of Contents**

[**Executive Summary by Dr. Josélia Neves (PhD):** 4](#_heading=h.30j0zll)

[**Recommendations:** 6](#_heading=h.3znysh7)

[**1.**](#_heading=h.2et92p0) **Ethical AI Principles and Frameworks** 6

[**2.**](#_heading=h.tyjcwt) **Inclusive AI Solutions Development & Bias** 6

[**3.**](#_heading=h.3dy6vkm) **Privacy** 7

[**4.**](#_heading=h.1t3h5sf) **Culture and Language Sensitivity** 7

[**5.**](#_heading=h.4d34og8) **Equity** 8

[**6.**](#_heading=h.2s8eyo1) **Research, Academia and Industry have a vital role to play** 9

[**7.**](#_heading=h.3rdcrjn) **Communications and Public Awareness** 10

[**8.**](#_heading=h.26in1rg) **Technical Education Integration** 11

[**9.**](#_heading=h.lnxbz9) **Private Sector Employment Practices** 12

[**10.**](#_heading=h.35nkun2) **Fostering a culture of collaboration & coordination between persons with disabilities, disability advocates, & parent communities who must have a seat at the table** 13

[**Conclusion** 15](#_heading=h.1ksv4uv)

[**Media Coverage and Thanks:** 15](#_heading=h.44sinio)

[**Resources Shared** 16](#_heading=h.z337ya)

[**1.**](#_heading=h.3j2qqm3) **Hamad Bin Khalifa University (HBKU), College of Humanities and Social Sciences (CHSS)** 16

[**2.**](#_heading=h.1y810tw) **MADA Assistive Technology Center Resources** 16

[**3.**](#_heading=h.4i7ojhp) **Step-by-Step Center for Special Needs** 17

[**4.**](#_heading=h.2xcytpi) **Be My Eyes App** 17

[**5.**](#_heading=h.1ci93xb) **Moxie (AI powered social robot)** 18

[**6.**](#_heading=h.3whwml4) **Citizen Assemblies** 18

[**7.**](#_heading=h.2bn6wsx) **European Disability Forum** 18

[**8.**](#_heading=h.qsh70q) **Made by Dyslexia** 19

[**9.**](#_heading=h.3as4poj) **Accessible Qatar** 19

[**10.**](#_heading=h.1pxezwc) **QF Accessibility Guide** 19

[**Appendices** 21](#_heading=h.49x2ik5)

**[Appendix 1: Overview of Ethical AI practices by Eman Ahmad Al-Kuwari, Director of Digital Innovation Department, Ministry of Communications and Information Technology](#_heading=h.2p2csry)**  [22](#_heading=h.2p2csry)

[**Appendix 2: Artificial intelligence in the life of people with disabilities by Dr Hayat Khalil Heji** 24](#_heading=h.147n2zr)

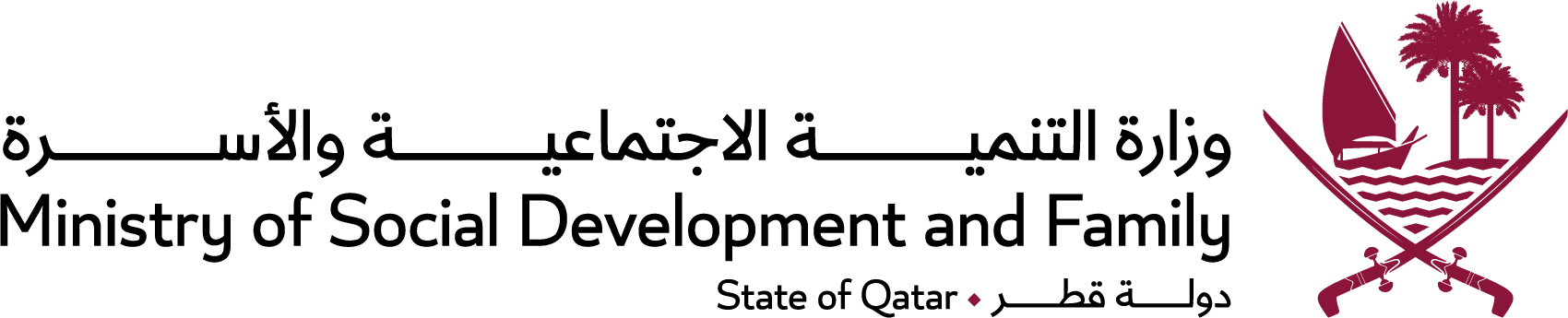
[**Appendix 3: How AI is being used by Step by Step Center For Persons with Disabilities by Nasreen Sharif and Olcay B. Connor**  27](#_heading=h.41mghml)

[**Appendix 4: Interview with Mark Hughes, Executive Director of QF Special Schools and SEN Services and Dr. Imad Deeb, Assistant Director, The Learning Center (TLC)**  31](#_heading=h.vx1227)

[**Appendix 5: Statement from Dr. Mohamed Koutheair Khribi, Head of Training Section at MADA** 37](#_heading=h.19c6y18)

[**Appendix 6: Statement from Disability Activist, Ms. Ghanimeh El-Taweel** 39](#_heading=h.46r0co2)

[**Appendix 7: Statement from Leyla Mroueh, Disability Advocate and Public Affairs Manager at Sasol** 41](#_heading=h.3l18frh)

****

# **Executive Summary:**

Artificial Intelligence (AI) has emerged as a powerful tool to drive positive change in today's fast-moving world of technological advancements. We cannot imagine life without it. We carry it in our bags, we knowingly and unknowingly are constantly feeding it, shaping it and training it in what we want it to do. Yet despite the hype, AI is simply a ‘smart assistant’ and in fact, Artificial intelligence is ‘all but intelligent’! It is simply an extension of who we are. It creates nothing new; it simply compiles, correlates and rearranges the information we have fed it to produce what we hope to be better versions of what was there before, be it better doctors, better teachers, better learners, etc. It is not up to us to tell AI what we want **it** to be, but what we as humans want to be.

For context, it is worth noting that data within the Worldwide Artificial Intelligence Spending Guide, published in March 2023 by the International Data Corporation (IDC) shows that global spending on artificial intelligence (AI), including software, hardware, and services for AI-centric systems\*, reached *$154 billion in 2023*, an *increase of 26.9%*over the amount spent in 2022. The ongoing incorporation of AI into a wide range of products will result in a compound annual growth rate (CAGR) of 27.0% over the 2022-2026 forecast, with spending on AI-centric systems expected to surpass $300 billion in 2026.

I would like to say that much of this money was being dedicated towards persons with disabilities and bring wishful thinking into the notion that all AI applications being developed for good are potentially helpful for Persons with Disabilities; however, I suspect this is far from the reality. We must consider how AI is now part of everybody’s daily life (whatever our profile may be).

The question remains whether those applications considered the needs of the various end-users. Do they comply with the established accessibility that exists but is often not implemented? Who is accountable for ensuring compliance? How involved have end -users from across society been involved? This brings us back to our role in shaping those tools and systems that are now part of everyday life and highlights our responsibility to be actively involved in developing specific tools to make the lives of specific individuals and our lives more productive and meaningful. Our responsibility at a personal and professional level is to actively engage with all stakeholders involved in this mammoth enterprise and outcome. We are being called to action and must act immediately to be seen and heard. We are known for doing a lot of talking. This is the moment to start doing the walking!

When I did the simple exercise of googling the combination of *AI + DISABILITY*, I found four hundred fifty-nine million entries. How many lifetimes would I need to go over all that information? My question today is, what can we learn from one another in Qatar that is still not found in a Googlesearch?

The recommendations presented are a good start, with practical guidelines based on insights gathered during and following the WISE Summit 2023 Partner session in collaboration with Sasol’s Accessible Qatar & the Ministry of Social Development Family (MSDF). Such inclusive round table sessions represent the voices, concerns and priorities of Disability advocates, industry, academia and government entities who all highlighted issues such as limited awareness, cultural sensitivity, and the need for ethical AI practices and governance that could add significant value to enhancing AI accessibility and inclusivity in Qatar.

**Dr. Josélia Neves (PhD)**

**Associate Dean for Social Engagement and Access and Professor at the Translation and Interpreting Institute (TII) and the College of Humanities and Social Sciences at Hamad Bin Khalifa University (HBKU).**

# **Recommendations:**

## **Ethical AI Principles and Frameworks**

**Issue*:*** Limited adoption of ethical AI principles.

**Recommendations*:***

* National regulators must implement nationwide frameworks and ensure their adoption.
* These frameworks should consider ethical principles and guidelines that align with Arabic values such as transparency, fairness, accountability, and respect for individual privacy.
* Private organisations should also ensure that the right policies are set in place to ensure the safe practice of AI that considers Arab culture.
* Qatar's National AI Strategy is focused on six pillars: 1) education, 2) data access, 3) employment, 4) business, 5) research, and 6) *ethics*. This represents a key step toward ethical AI practices at the national level. Further initiatives and artefacts endorsing safe AI practices are expected.
* To learn more about the National Artificial Intelligence Strategy, please visit the [National Artificial Intelligence Strategy for Qatar report](about:blank) (18-pages) available on their website.

## **Inclusive AI Solutions Development & Bias**

**Issue:** Potential biases within AI development, particularly around language and culture, and a lack of engagement with diverse end users and persons with disabilities.

**Recommendations:**

* Companies developing AI solutions should avoid biases that may disproportionately impact specific groups within the Arabic-speaking population.
* Thorough studies should be conducted to identify and include all target groups within the solution.
* Ensure that AI technologies are developed with diverse teams that include individuals from different cultural backgrounds. This approach helps in creating more inclusive and culturally sensitive AI systems.
* Additionally, encouraging localised solutions where local start-ups tailor AI applications to address specific needs and challenges within Arabic-speaking communities is essential.
* Enhancing machine learning better to understand the needs and preferences of persons with disabilities.
* Develop an ethics framework for accurate and reflective data sets.
* Enhance machine learning to understand the needs of people with disabilities by connecting with communities firsthand.

## **Privacy**

**Issue:** Privacy & protecting personal data

**Recommendations:**

* It is crucial to prioritise protecting individual privacy when developing AI-powered solutions, aligning with our cultural values. Hence, it is important that AI solutions are developed in line with the National Personal Data Protection Law and international best practices.
* Educate end users who include persons with disabilities, communities, families, and teachers on people’s rights.

## **Culture and Language Sensitivity**

**Issue:** Insufficient Arabic terminology for discussing disability and accessibility. AI is neither compatible with the Arabic language nor does it recognize specific linguistic and dialectal features.

**Recommendations:**

* Consult disability thought leaders and communities and reinforce compliance with capacity building and training led by government entities.
* Encourage localised solutions tailored to Arabic-speaking communities.
* Incentivise work within this area at a national level with relevant stakeholders.
* Work with academia to ensure Arabic learners are looking at the unique linguistic, cultural, and social aspects when developing AI systems.
* Collaborate and communicate regionally to share knowledge.
* National Regulators must ensure the AI Ethics framework is aligned with religious, cultural, and social values, ensuring cultural sensitivity.

## **Equity**

**Issue:** High costs for disability communities/families to access the latest technologies. Many institutions assume that all students have internet access or laptops at home that they can use to complete assignments or join classes, which is untrue. When creating better accessibility in higher education, schools must also implement strategies to increase technical equity.

**Recommendations:**

* Address cost and affordability issues to ensure equitable opportunities.
* Ensure greater awareness of available resources through communication channels
* Signpost to platforms and re-positioning Accessible Qatar to become more of a useful guide for information flow and targeted communications.

## **Research, Academia and Industry have a vital role to play**

**Issue:** lacking a ‘business case’ for accessibility and lack of training or motivation for developing accessible and inclusive technologies.

**Recommendations:**

* Invite universities and accelerators to a briefing that can be led by the key national stakeholders to highlight the importance of accessibility for all and Qatar’s national priorities.
* Conduct studies on the impact of technology on diverse people with disabilities.
* Champion and socialize the work of MADA, Accessibility Hub in HBKU – and celebrate organizations who are developing and implementing guidelines for accessible design.
* *Look at ways to re-*frame and challenge how universities and industry focus on traditional market demands to recognise the untapped market gains of developing technologies and services that benefit all.
* Ensure universal design principles and modules were made mandatory and not elective for students and any tech start-ups within Qatar.
* Encourage cooperative research between universities and communities of people with disabilities, including organizations and institutions that provide services to people with disabilities, to identify and better understand their challenges and meet their actual needs.
* Consider ways the government could incentivise Universities to drive greater awareness among staff and students on the importance of accessibility for all.
* MADA have been collaborating with partners like the Ministry of Education and Higher education and universities in Qatar (CCQ, HBKU, UDST) to develop digital accessibility courses aligned with MADA ICT-AID competency framework and to integrate these courses in undergraduate (CCP) and postgraduate levels.
* UDST are opening an eye-tracking lab that should be useful for assessing the ease of use in applications to end users and persons with disabilities.

## **Communications and Public Awareness**

**Issue:** A lack of awareness about the challenges and opportunities of AI for persons with disabilities and communities at both an industry and academic level and within home and work settings.

**Recommendations:**

* Launch a national awareness campaign with MSDF, MADA, and QF and other key national stakeholders to encourage greater public awareness around AI, addressing misconceptions and promoting awareness of the potential benefits of AI aligned with Arabic values.
* Promote AI literacy and educate the public about AI to foster a better understanding of its capabilities and limitations.
* Organise a national media briefing about the topic and highlight the need for media to play a frontline role in amplifying the voice of persons with disabilities and disability advocates.
* Encourage students to consider diverse community representation within their content and learning journeys to encourage the next generation of communicators to advocate for the integration of persons with disabilities within mainstream media.
* Host open media invitations to journalists at all key centres and organisations to encourage more integrated and inclusive story mining.
* Include regular TV/Radio segments and shows that could be hosted by a person with disabilities within mainstream media channels.

## **Technical Education Integration**

**Issue:** Persons with disabilities can benefit from artificial intelligence in the classroom; however, digital campus course programs and/or online material can be inaccessible to some students. This results in institutions are significantly reducing the ability of these students to confer and compete with peers. Access for learners in higher education can take many forms because each student has unique needs and requirements rather so personalized education verses one size fit’s all approach that makes the adoption of ‘one’ universal tool or tech solution impossible.

**Recommendations:**

* Provide access to the latest technology via grants to schools, centers and private learning environments (auditing regularly) and ensuring its availability regardless of personal financial situation.
* Regularly update and expand the repository of accessible resources available to persons with disabilities, schools and families that can be loaned like a ‘library of things’.
* Motivate and encouraging persons with disabilities to participate in the learning process through technology, by customising the tools needed to support them.
* Develop a comprehensive vocational training program in VR that can support young people with diverse needs to prepare for the future of work.
* Integrate emerging digital technologies and ICT-AID courses into education and training curricula, aligning with Qatar's initiatives in Digital Skills and providing intensive training for teachers and offer regular communications to keep them up to date on the latest tools and technological advancements.
* Several initiatives have been launched by the Ministry of Communications and Information Technology (MCIT) in relation to Digital Skills. These initiatives aim to underline the impact of emerging digital technologies and trends on the current and future workforce of Qatar. With the support of key ecosystem stakeholders, the Ministry is working towards integrating the latest technological developments into education and training curricula. For more information, visit the [Ministry of Communication and Information Technology website](https://mcit.gov.qa/en).

## **Private Sector Employment Practices**

**Issue:** Unemployment and underemployment among persons with disabilities and lack of awareness by employers on labour laws, or lack of compliance.

**Recommendations:**

* We need to ensure fair employment practices for individuals with diverse needs in the private sector to align with the global best practices and standards regarding disability employment.
* Ensure compliance with employment laws for people with diverse abilities (For example, in Article Four, stating a minimum of 2% of the total number of job opportunities shall be allocated to persons with disabilities), as it aligns with Qatar's goals for inclusion and diversity.
* We can help organize awareness campaigns and events to educate the private sectors about the benefits of hiring people with disabilities, fostering a supportive environment. We can also provide feedback, and further assistance as needed to support the development and implementation of the system in private companies.
* Introduce incentives for companies actively hiring persons with disabilities.
* Support compliance across all sectors with capacity building and training for employers and regular follow ups by dedicated specialists who can troubleshoot and act as mediators between employees and employers.
* Develop local AI-driven adaptive learning platforms to improve personalised skill development for future workers.
* Enhance platforms like Accessible Qatar to provide a more AI-driven job portal that can match individuals' skills, preferences, and abilities with suitable job opportunities, considering diverse abilities and needs. Encourage companies to offer more opportunities for remote work accessibility.

## **Fostering a culture of collaboration & coordination between persons with disabilities, disability advocates, & parent communities who must have a seat at the table**

***Issue:*** A lot of work may be happening that supports special needs communities, but without a national ‘sponsor’ and top-down as well as bottom-up support, efforts will be dispersed. Whilst the Motto ‘Nothing about us without us’ is well received, persons with disabilities and their families are not always engaged or consulted about policies and plans that impact their lives. Information flow is patchy or out of date with limited sources of reliable sources that can signpost to relevant information for persons with disabilities and their families.

**Recommendations:**

* Greater coordination by National agencies of efforts to avoid duplications and ensure the amplification of impact.
* Establish a disability advocacy-focused AI committee/ task force comprising representatives from various sectors and communities for the advocacy and empower community people with disabilities to monitor AI technologies for meaningful inclusivity and accessibility in Qatar.
* Consider running school-focused quarterly gatherings like Qatar Museums Authority meetings that foster greater communication between schools, families and Qatar Museum. These sessions could be hosted under the MSDF umbrella and take place at a different centre each time.
* Consider the use of ‘Citizen Assemblies’ that allow for deliberation by a wide range of people to make policy recommendations in relation to a particular issue or set of issues could also be considered if efforts could be coordinated.
* Include representation from MSDF and disability advocates within the National Artificial Intelligence committee to ensure advocacy for special needs communities is possible. For more details on the committee, visit the [Artificial Intelligence Committee page on the Ministry of Communication and Information Technology website](https://mcit.gov.qa/en/about-us/artificial-intelligence-committee).

# **Conclusion**

Whilst it is hoped that the recommendations shared in this report & appendix support efforts to establish a more accessible and inclusive environment for individuals with diverse abilities in Qatar, the main reflection and take home has been the need for more bridges and platforms to be built between multi-sectorial partners and communities. Building strong collaboration with government bodies, private organisations, educational institutions, and communities is essential for successfully executing these initiatives.

## **Media Coverage:**

Media coverage can be accessed through three sources.

First, Qatar News Agency (QNA) published an article in English on November 29, 2023. The article is available on the Qatar News Agency website. The title of the article is [‘Artificial Intelligence's Role in Advancing Accessibility, Inclusion Spotlighted at 2023 WISE Summit’](https://www.qna.org.qa/en/News-Area/News/2023-11/29/0055-artificial-intelligence's-role-in-advancing-accessibility,-inclusion-spotlighted-at-2023-wise-summit).

Second, Qatar Foundation (QF) in published an article in Arabic on the 2023 Wise Summit on November 30, 2023. The article is available in the Qatar Foundation website under the Arabic stories. The title of the article, translated from Arabic to English, is [‘WISE Summit 2023 highlights the role of AI in promoting accessibility and inclusion.](https://www.qf.org.qa/ar/stories/artificial-intelligences-role-in-advancing-accessibility-and-inclusion)

Third, Qatar Foundation (QF) published an article in English on the 2023 Wise Summit on November 30, 2023. The article is available in the Qatar Foundation website under the English stories. The title of the article is [‘Artificial Intelligence’s role in advancing accessibility and inclusion spotlighted at 2023 WISE Summit’.](https://www.qf.org.qa/stories/artificial-intelligences-role-in-advancing-accessibility-and-inclusion)

## **Acknowledgements:**

This report would not have been possible without the support of all the roundtable participants, observers, advocates and contributors. A special thanks to: Dr Josélia Neves, Ghanimeh El-Taweel, Dr Hayaat Al Heji, Maryiam Al Sulaiti, Eman Al-Kuwari, Maryam Al-Thani, Mona Al-Nasser, Shahd Dauleh, Reem Al-Sulaiti, Nasreen Shabir, Olcay B Connor**,** Camilla Hadi Chaudhary, Nardine Gerges, Aisha Tanvir, Rawan Yousif, Connie Skhonde, Romana Taj Mohamed, Tafseena Askar Ali, Reshmi Menon, Leyla Mroueh**,** Dr Khaled Al Nuaimi, Faisal Koji, Abdulla Taleb, Dr Mohamed Koutheair, Dr Maamar Zakaria, Dr Uvais Qidwai, Uriel Kejsefman, Khribi, Mark Hughes, Ryan J. Moignard, Anas Hasanain, Abdelaziz Ahmed Alsadi and Paulo D.Vecina.

# **Resources Shared**

## **Hamad Bin Khalifa University (HBKU), College of Humanities and Social Sciences (CHSS)**

### Category: University

HBKU hosts an ACCESS HUB. Established by Dr. Josélia Neves (PhD)as a research centre that focuses on diversity, inclusion and accessibility as the subjects of basic and applied interdisciplinary research.

More information can be accessed in the ACCESS HUB report published by HBKU’s College of Humanities and Social Sciences, Department of Translation and Interpreting Institute. The report is titled, [‘DIVERSITY, INCLUSION & ACCESSibility HUB: Respecting Human Diversity, Enhancing inclusivity, Promoting Access’ which is a product of the ‘Language, Mediation and Inclusion Research Cluster’.](about:blank) The report is 52-pages long.

## **MADA Assistive Technology Center Resources**

### Category: Organization

All training courses by MADA Assistive Technology Center are aligned to an open competency framework that describes all the relevant ICT accessibility competencies and abilities required for everyone to be able to use and develop accessible content, services and products.

#### MADA ICT-AID competency framework available through the MADA website offers a template for ICT accessibility and inclusive design. MADA ICT-AID  is an educational standard available to users of the well-known digital library and collaboration platform available through the [OER Commons](https://www.oercommons.org/) website and platform. It can be used to index and align ICT-AID educational resources providing ease of access and retrieval of Open Educational Resources OER serving global learners and educators. Visit the MADA ICT-AID competency framework through their dedicated [ICT Aid website.](https://ictaid.mada.org.qa/?lang=en)

### Global knowledge hub:

MADA has launched an open-access repository ‘featuring freely accessible resources on ICT accessibility. The community of ICT accessibility professionals, experts, advocates, educators, and learners can discover, create, and share open learning and teaching resources and connect with others to expand their capabilities and improve inclusive practices.

The Hub is gathering collections of open educational resources aligned to the MADA Framework. All resources are aggregated, curated and managed by MADA and partners through collections, groups, and development tools available on the Hub. Visit the MADA OER commons organization website to access the [MADA OER Hub](https://oer.mada.org.qa/)*.*

MADA Academy is a center of excellence in training, professional development, and lifelong learning for all. The academy offers a large selection of technology-enhanced training activities delivered within various training modalities. Visit MADA Academy through the dedicated [website](https://academy.mada.org.qa/about/).

## **Step-by-Step Center for Special Needs**

### Category: Advocacy and Training

The Step by Step for Special Needs provides education and therapy to children and young adults with special needs in a safe environment that nurtures their growth, inspires achievements and maximises their potential.

The team organizes awareness campaigns and events to educate the private sectors about the benefits of hiring people with disabilities, fostering a supportive environment. can also provide feedback, and further assistance as needed to support the development and implementation of the system in private companies

Recommendations made as well as examples of how they are using AI in their classrooms today can be seen in the full report, available as a CANVA publicly accessible online presentation. The presentation is titled, [‘AI-Enhanced Adaptive Learning: Empowered Lives for All!’](https://www.canva.com/design/DAF1QfTgPNk/Fj_Typ50IucVvIJCZEE3TA/view?utm_content=DAF1QfTgPNk&utm_campaign=designshare&utm_medium=link&utm_source=editor) The PowerPoint presentation is 23-pages long, offering both written and visual content. For more details on the work Step-by-Step does or to express interest in collaborating with them, please visit the [Step-by-Step website](https://www.stepbystepqatar.com/) for their contact information and location.

## **Be My Eyes App**

### Category: Educational App

Be My Eyes connects people needing sighted support with volunteers and companies anywhere in the world, through live video and artificial intelligence. The app connects blind and low-vision individuals with sighted volunteers and companies worldwide through a live video call. Since its launch in January 2015, over 7,165,009 volunteers have signed up to assist blind and low-vision users.

Be My Eyes users can request assistance in over 180 languages making the app the most extensive online community for blind and low-vision people as well as one of the largest micro-volunteering platforms in the world! To access the Be My Eyes application and for further information visit the [Be My Eyes website](https://www.bemyeyes.com/about).

## **Moxie (AI powered social robot)**

### Category: Educational App

Global Robotics Laboratory (GRL) have developed Moxie - a robot companion on a mission to learn how to become a good friend to humans. Designed to engage with all kids needing to learn social, emotional, and life skills in the face of autism, anxiety, depression, and more, Moxie and its mentor go on a series of missions that help them both to learn and grow. Moxie recognizes and responds to human emotions, allowing students to engage in interactive conversations and activities that help them develop their social and emotional intelligence. For further information on this educational app, visit the [Moxie Robot website](https://moxierobot.com/products/ai-robot) to purchase the product.

## **Citizen Assemblies**

### Category: Advocacy

Citizens’ Assemblies increase citizen participation in government and policy-making. They are powerful tools that encourage broader representation by all sections of society and amplify the quality of deliberation through a carefully structured process. For further information on this advocacy group, visit the [Citizens’ Assembly website](https://citizensassembly.co.uk/), available only in English.

## **European Disability Forum**

### Category: Advocacy

The European Disability Forum is a two-year project that was established to advocate for the rights of persons with disabilities in relation to the development and use of AI technologies and expand the knowledge of the European disability rights movement. It is a positive example of disability advocacy in action and could be a blueprint for similar work in the region that Qatar can lead. More information can be found on the [Disability Inclusive Artificial Intelligence (AI) page](https://edf-feph.org/projects/inclusive-artificial-intelligence-ai/) on the European Disability Forum Report Discrimination website.

## **Made by Dyslexia**

### Category: Advocacy

A platform and global resource for families, employers and educators and dyslexics. It advocates for greater awareness of the power of dyslexic thinking and offers invaluable tool kits and resources from research to campaign materials. For further information on the [Made by Dyslexia organization](https://www.madebydyslexia.org/), visit their official website available only in English.

## **Accessible Qatar**

### Category: Website and App

Accessible Qatar was initially established by Sasol in 2015 to promote Independence throughout life & work for its diverse residents and visitors by sharing useful resources, accessible and inclusive opportunities and experiences available in Qatar.

In light of all the changes and community feedback in Qatar since its initial launch, and with the Ministry of Social Development and family as partners, we have the opportunity to reposition Accessible Qatar & develop an integrated range of new and existing features that responds to the needs of Qatar residents, communities and visitors in 2024 and beyond. [Accessible Qatar](https://www.accessibleqatar.com/) can be accessed through their official website, available in both English and Arabic.

## **QF Accessibility Guide**

### Category: Information Guide

Created for the FIFA World Cup 2022 and downloadable from the Haya App, the guide offered visitors and residents easy access to accessible activities within Qatar. Developed by Qatar Foundation Communications directorate in collaboration with Dr Josélia within the context of the Access Hub in HBKU, the guide was offered in several formats to ensure accessibility for all. The Guide could be a blueprint for broader use and expansion when connected to Qatar Tourism Authority and a platform like Accessible Qatar / Ministry of Social Development and Family. The [Qatar for All: Your Accessibility Guide](https://www.qf.org.qa/accessibility-guide) can be found as a webpage with interactive guides, text only versions, and braille versions on the Qatar Foundation website, available in both English and Arabic.

---END---

# **Appendices**

There are seven appendices available in this report.

## **Appendix 1: Overview of Ethical AI practices by Eman Ahmad Al-Kuwari, Director of Digital Innovation Department, Ministry of Communications and Information Technology**

### **Ethical AI Principles and Frameworks that guide AI practices in line with our culture:**

National regulators must implement nationwide frameworks and ensure their adoption. These frameworks should consider ethical principles and guidelines that align with Arabic values such as transparency, fairness, accountability, and respect for individual privacy. Private organizations should also ensure that the right policies are set in place to ensure the safe practice of AI that takes into account Arab culture.

Example: Qatar's National AI Strategy is focused on six pillars: education, data access, employment, business, research, and ethics. This represents a key step toward ethical AI practices at the national level. Further initiatives and artefacts endorsing safe AI practices are expected.

**2. Inclusive AI solution development**

Companies developing AI solutions should avoid biases that may disproportionately impact certain groups within the Arabic-speaking population. Thorough studies should be conducted to identify and include all target groups within the solution. Ensure that AI technologies are developed with diverse teams that include individuals from different cultural backgrounds. This approach helps in creating more inclusive and culturally sensitive AI systems.

It is also crucial to prioritize the protection of individual privacy when developing AI-powered solutions, aligning with our cultural values. Hence, it is important that AI solutions are developed in line with the National Personal Data Protection Law and international best practices.

Additionally, encouraging localized solutions where local startups tailor AI applications to address specific needs and challenges within Arabic-speaking communities is essential. Consider the unique linguistic, cultural, and social aspects when developing AI systems.

**3. Increase education and awareness:**

Promote AI literacy and educate the public about AI to foster a better understanding of its capabilities and limitations. Address misconceptions and promote awareness of the potential benefits of AI aligned with Arabic values.

Example: Several initiatives have been launched by MCIT in relation to Digital Skills. These initiatives aim to underline the impact of emerging digital technologies and trends on the current and future workforce of Qatar. With the support of key ecosystem stakeholders, the Ministry is working towards integrating the latest technological developments into education and training curricula. For more information, visit the [Artificial Intelligence Committee page on the Ministry of Communication and Information Technology website](https://mcit.gov.qa/en/about-us/artificial-intelligence-committee).

**4. Build Trust and Communication:**

As a nation, foster trust by maintaining transparent communication about AI development and its impact. Address concerns and provide clear information about the ethical considerations and safeguards in place. Open dialogue and communication channels are crucial for building and maintaining public trust in AI initiatives.

## **Appendix 2: Artificial intelligence in the life of people with disabilities by Dr Hayat Khalil Heji**

### **How AI is being used by the blind community today:**

* 1. Image recognition techniques to convert visual information into read recognizing
  2. Automated reading systems to convert written text into audible speech.
  3. Personal assistance applications that use artificial intelligence technologies to assist with everyday tasks such as navigation and object recognition.
  4. Location identification techniques using artificial intelligence to guide people with visual impairment during navigation and location identification.
  5. Technologies for detecting obstacles in the path and directing people with visual impairment to avoid them, which enhances safety during transportation.

### **The impact of artificial intelligence on the life of people with disabilities:**

People with disabilities use artificial intelligence devices and applications, which enhance their independence and enable them to participate effectively in society. Through these modern technologies, it is possible to improve their access to health, educational and technological services, taking into account preserving the privacy of people with disabilities. Examples of employing people with visual impairment include artificial intelligence techniques:

* 1. Image recognition techniques to convert visual information into readable text.
  2. Automated reading systems to convert written text into audible speech.
  3. Personal assistance applications that use artificial intelligence technologies to assist with everyday tasks such as navigation and object recognition.
  4. Location identification techniques using artificial intelligence to guide people with visual impairment during navigation and location identification.
  5. Technologies for detecting obstacles in the path and directing people with visual impairment to avoid them, which enhances safety during transportation.

### **Special education can benefit from artificial intelligence in the classroom:**

Artificial intelligence helps provide personalised educational experiences for each student with disabilities to suit their individual learning styles, interests, abilities, and needs. One of the applications of artificial intelligence in education is the virtual teacher supported by artificial intelligence. Employing artificial intelligence provides individual educational support to every student with disabilities that suit his abilities and needs by providing unique solutions, customising educational programs, accurately evaluating students’ progress, and identifying areas that need additional attention and development. The process of distance learning and providing students with daily life skills. Some technical challenges must be overcome, the most important of which are:

* 1. The integration of artificial intelligence technologies into the private learning environment and the extent of its compatibility and stability.
  2. The rights to privacy, security, and confidentiality of information when collecting and analysing personal data of students with disabilities.
  3. Providing intensive training for teachers in modern technological techniques.
  4. Providing access to technology and ensuring its equitable availability to students in all educational settings.
  5. Motivating students and encouraging them to participate in the learning process through technology.

### **The contribution of research and academia to the accessibility of artificial intelligence technologies to people with disabilities:**

Research can contribute to improve accessibility for people with disabilities and enable them to use modern technologies and analyse data, taking into account the variation in capabilities and needs among people with disabilities through:

* 1. Incorporate the principles of comprehensive design integration into developing these intelligent technologies.
  2. Enhancing machine learning better to understand the needs and preferences of people with disabilities.
  3. Develop and design assistive tools that use artificial intelligence technologies to support people with disabilities in their daily lives.
  4. Develop human-computer interaction systems that effectively respond to the movements and notifications of people with disabilities.

### **Strategy for the future of artificial intelligence:**

* 1. Develop a future strategy for artificial intelligence in line with religious, cultural and social values and the Arabic language.
  2. Encouraging cooperative research between universities and communities of people with disabilities, including organisations, institutions, and centers that provide services to people with disabilities, to identify and better understand their challenges and ensure that their actual needs are met.
  3. Raise awareness about the importance of access to these modern technologies and train community members, especially developers and designers, on how to incorporate universal design principles.

To contact Dr Hayat please email her at: [**hkheji@alnoor.org.qa**](mailto:hkheji@alnoor.org.qa)

## **Appendix 3: How AI is being used by Step-by-Step Center for Persons with Disabilities by Nasreen Sharif, and Olcay B.Connor**

AI offers autistic students non-threatening, non-judgmental support. Therefore, our students are very comfortable interacting with technology.

**Gaming** offers a predictable, consistent environment: if they are unsuccessful in a gaming situation, they start the game again. Also, robots for instance lack humanness, which is also a positive trait especially for a person with Autism, as there are no confusing gestures or facial expressions just a simple wave or smile. This means that students can easily read those cues and focus on their learning, rather than trying to decode behaviors.

**AI-powered robotic devices** *help our students in performing exercises and tasks* that may be difficult or impossible for them to do on their own. For example, robots help our students copy simple body movements and can be used as a role model. SEN teachers use AI such as Magic School to create personalised learning plans (Individualized Education Programs or IEPs) to enhance their teaching methods and improve student outcomes taking into account different learning styles and paces. They use learning apps and software (with Smartboards or iPads) through interactive and game-like interfaces that range from reading comprehension, math’s and sciences.

**Speech and language intervention:** Our therapists can gather lots of data from various sources, such as patient records, therapy session recordings, and progress reports, to create tailored treatment plans that address the specific needs and goals of each individual with the help of AI. This personalized approach can lead to more effective therapy sessions and better overall outcomes.

**Occupational Therapy Intervention:** We utilise chatbots to develop Sensory integration programs treatment goals with just a few clicks. They also use AI-powered interactive smart board games to improve motor coordination and development. Therapists utilise **chatbots** to develop Sensory integration programs and treatment goals with just a few clicks. They also use **AI-powered interactive smart board games** to improve motor coordination and development.

**Life skills:** AI helps develop essential fostering activities of daily and independent living (E.g. self-care and hygiene) , and vocational skills (E.g. interview skills). For instance, our students regularly visit the AI Smart market to practice shopping & money management skills.

We use AI to **convert educational materials into more accessible formats**, such as large print and contrast-colored backgrounds, making content more inclusive for students with visual or sensory learning differences.

**Hirfa Production Unit**: Within our innovative Arts and Crafts studio, we enable our learners to create and sell their own products and crafts. AI tools like Canva & Magic Studio help our students to visualize merchandise and develop digital artwork.

**Assistive Technology as Communication Aids:** Augmentative and Alternative Communication (AAC) devices and AI-powered assistive technologies, such as text-to-speech applications, help students with disabilities communicate and access information, and produce their work more effectively. AI-powered communication aids facilitate better interaction for our students (E.g. Proloquo-2-go). Also, AI-powered interactive games help work on their speech in a fun and interactive way.

Al as virtual support teachers All SEN teachers typically rely on assistants to help the students in our classrooms. We use **AI driven educational chatbots such as Raina chatbot** which can interact with students, answer questions, and provide support and real-time feedback, allowing students to understand their mistakes.

AI-powered tools like **intelligent tutoring systems** can provide personalized instruction and feedback, helping students to progress at their own pace.

**Early Interventions:** AI games and story time (e.g. Cause & Effect games on Smart Board, etc.,) we use to help improve younger students' creativity, emotions, collaborative inquiry and related early basic concepts, literacy & math skills.

**Emotional Literacy Support:** AI applications (digital games teaching emotions, video modeling/ facial expressions, etc.) assist in recognizing and responding to the emotional states of students, providing additional support for their well-being.

**Teacher Professional Development:** AI tools support teacher professional development so they have easy access to online training platforms and workshops and learn about effective strategies and evidence-based strategies for teaching students with special needs.

Whilst we have these tools, we believe there is a lot more potential impact of AI in enhancing accessibility and inclusivity across various sectors in Qatar, such as assistive technologies, inclusive design, and accessibility solutions across education, healthcare, transportation, and other sectors.

There are high levels of unemployment or underemployment among young people with diverse abilities. They have difficulty in accessing suitable job opportunities and workplaces that accommodate their needs. Negative attitudes and stereotypes can isolate young people with diverse abilities, leading to social exclusion, and a lack of social integration

We need to ensure fair employment practices for individuals with diverse needs in the private sector as well, to align with the global best practices and standards regarding disability employment. We need to ensure fair employment practices for individuals with diverse needs in the private sector as well, to align with the global best practices and standards regarding disability employment.

Therefore, we propose development of a system ensuring private companies also comply with employment laws for people with diverse abilities (E.g. in Article 4, stating a minimum of 2% of the total number of job opportunities shall be allocated to Special Needs Persons), as it aligns with Qatar's goals for inclusion and diversity.

**Additional points to consider:**

1. AI-driven adaptive learning platforms to improve personalised skill development,
2. AI-driven job portals can match skills, preferences, and abilities of individuals with suitable job opportunities, considering diverse abilities and needs.
3. Companies can offer more opportunities for remote work accessibility.

The laws are in place however we need a system ensuring private companies also comply with employment laws as stated in Article 4, of Qatar’s labor laws, stating a minimum of 2% of the total number of job opportunities shall be allocated to Special Needs Persons in companies over 30 people so this would help to align with Qatar's goals for inclusion and diversity.

We can help organize awareness campaigns and events to educate the private sectors about the benefits of hiring people with disabilities, fostering a supportive environment. We can also provide feedback, and further assistance as needed to support the development and implementation of the system in private companies.

We would like to also propose to establish an active AI committee comprising representatives from our team, researchers in the field as educators, persons with disabilities and parents, and include advocacy groups such as Definitely Able ambassadors and tech companies, under the patronage of Ministry of Social Development and Family.

We can establish the roles and responsibilities of the AI committee, focusing on collaboration, research, development, implementation, and monitoring of AI technologies for meaningful inclusivity and accessibility in Qatar. We can also establish ethical guidelines (as mentioned numerous times in the meeting) ensuring AI technologies prioritize privacy and fairness for individuals with diverse abilities and needs.

To see the full outline, images and recommendations visit the presentation titled, [‘AI-Enhanced Adaptive Learning: Empowered Lives for All!’](https://www.canva.com/design/DAF1QfTgPNk/Fj_Typ50IucVvIJCZEE3TA/view?utm_content=DAF1QfTgPNk&utm_campaign=designshare&utm_medium=link&utm_source=editor) The PowerPoint presentation is 23-pages long, offering both written and visual content in English.

To contact Step by Step Center for Persons with Disabilities, please call: +974 44757625 or email: info@stepbystepqatar.com

## **Appendix 4: Interview with Mark Hughes, Executive Director of QF Special Schools and SEN Services and Dr. Imad Deeb, Assistant Director, The Learning Center (TLC)**

**Question: How is AI impacting the lives of persons with disabilities?**

**Answer:**

**Mr. Mark -** Overcoming learning disabilities has long been a challenge for educators and students alike. Traditional methods of teaching often fail to cater to the unique needs of students with learning disabilities, leaving them struggling to keep up with their peers. However, recent advancements in artificial intelligence (AI) technology have shown promise in revolutionizing the way we approach education for students with learning disabilities. By harnessing the power of AI, educators can create personalized learning experiences that cater to the specific needs of each student, ensuring that no one is left behind.

**Dr. Imad (TLC) -** By providing assistive technologies, such as speech recognition, computer vision, and natural language processing, to enhance accessibility. These technologies empower individuals with disabilities to navigate the digital world, communicate effectively, and participate more fully in society.

**Question: How is Special Education taking advantage of recent technological developments?**

**Answer:**

**Mr. Mark -** One of the most significant ways AI can assist in overcoming learning disabilities is through the use of adaptive learning systems. These systems use algorithms to analyze a student’s performance and adjust the learning content and pace accordingly. This personalized approach allows students with learning disabilities to progress at their own pace, without feeling overwhelmed or left behind. Furthermore, adaptive learning systems can identify areas where a student may be struggling and provide targeted support to help them overcome their challenges.

Another way AI can support students with learning disabilities is through natural language processing (NLP) technology. NLP enables computers to understand and interpret human language, allowing AI-powered tools to provide real-time feedback on a student’s written work. This can be particularly beneficial for students with dyslexia, who often struggle with spelling, grammar, and sentence structure. By providing immediate feedback, students can identify and correct their mistakes, leading to improved writing skills and increased confidence.

**Question: In the classroom setting and what are the perceived challenges or opportunities?**

**Answer:**

**Mr. Mark -** One of the most significant limitations of artificial intelligence is that it can be wrong or unreliable in its predictions or solutions. AI algorithms are only sometimes easy to follow, making it difficult for marketers to understand how an AI prediction or solution came to be. Not understanding or contributing to this process makes it harder to trust the information returned to you. This means AI designers must fact-check and ensure the predictions and solutions provided are accurate and reliable. Not only does this bring up issues of transparency, but it also raises concerns about fairness and accountability. Schools using AI must ensure that the AI algorithms they rely on are transparent and explainable to all stakeholders. By doing so, you can build trust and confidence within your team when using these AI-driven tools, boosting your overall productivity and streamlining your workflow.

It’s also important to remember that AI systems need instructions, adjustments, and controls need to be inputted by humans to run successfully. AI tools can generate much content and produce predictions, but this all relies on specific human-generated prompts. Despite being clear and understandable to humans, these prompts may also generate incorrect information. This can be due to AI’s inherent limitations, such as quick content proliferation and narrowed access to resources (i.e., databases, updated internet archives, etc.).

**Dr. Imad (TLC)** - Adaptive learning platforms, virtual reality, and AI-driven personalised learning tools. These technologies cater to diverse learning needs, offering personalized instruction and real-time feedback, but these need teachers training and there are concerns regarding privacy.

**Question: How can research and academia contribute to ongoing efforts to create accessible and inclusive technologies? What is happening locally?**

**Answer:**

**Mr. Mark -** The lack of support… Institutions have historically given to students with disabilities can increase challenges in their academic life. Fewer resources and insufficient support increase their risk of dropping out or transferring to other schools. For many, access to higher education depends on schools having and providing the right resources, tools, and services for their students. The dependency on humans to enable equity, inclusion and entitlement!

With the growth of the digital campus course programs and loads of online material that is inaccessible to students with disabilities, institutions are significantly reducing the ability of these students to confer and compete with peers. This impacts the entirety of the institutional culture.

In general, accessibility refers to how well individuals can receive the tools and resources they need to succeed. Access in higher education can take many forms because each student has unique needs and requirements.

For example, blind students and students with low vision often require text-to-voice software solutions to read their assignments for classes. This type of accessible technology allows them to participate in assignments. Other students might require more resources to help them thrive. Students with learning disabilities can benefit from academic success departments and tutoring to help teach them strategies to meet their academic goals. Beyond access to materials and resources, higher education institutions also must consider technical equity. This concept highlights the idea that some individuals lack access to technology to begin with. Many institutions assume that all students have internet access or laptops at home that they can use to complete assignments or join classes, which is untrue. When creating better accessibility in higher education, schools must also implement strategies to increase technical equity.

**Dr. Imad** - By developing accessible and inclusive technologies. Conducting studies on the impact of technology on diverse people with disabilities – work of MADA, Accessibility Hub in HBKU – in Developing guidelines for accessible design. QlickHealth’s autism education program includes all education phases and technological integration through the application of KEBBI Robot and Use of iPad/Tablet to supplement and support the lessons provided by KEBBI.

**Question: What can we learn from what is happening within the tech sector and industry - What is on offer and what do they need?**

**Mr. Mark -** In the modern world, we’re witnessing the gradual erasure of borders. This process is related not only to business or politics. Nowadays, almost any person despite their citizenship of physical state can get medical or educational services all around the world. To regulate such relationships between a person and international organizations, there are dozens of specialized commissions creating laws and standards.

The educational standards claim that students with disabilities should be provided with equal opportunities to realize their potential. They should participate in education and training on the same basis as students without disabilities and that they are not subject to discrimination. Due to the progress in the IT industry, digital technologies are easily accessible and widespread which allows using them for providing students with new opportunities.

Research tells us that there can’t be a single technological solution that would suit the needs of all students with special needs. Due to the high diversity of types of disabilities, the best possible outcome can be guaranteed by the use of custom-made solutions designed according to the requirements of a particular group of students.

Specially designed technologies allow increasing the independence of a particular student, freeing them from the constant need for direct teacher involvement. As a result, a student can choose the speed of learning that is convenient for him/her which leads to more personalized learning. When a student doesn’t inhibit the learning process for the whole group, it allows reducing the anxiety level which plays a significant role in education as well. Implementation of technologies in special education allows simplifying communication and improve the academic skills of students with disabilities.

**Edmentum**, a company with deep expertise in the creation of eLearning solutions, notes the following advantages of using technologies in special education:

*“Technology makes it possible for a classroom to be enhanced with individual learning events, allowing instructors to provide greater flexibility and differentiation in instruction. Teachers can use technology to offer a variety of learning opportunities and approaches that engage, instruct, and support special education students with a myriad of tactics designed to appeal to individual learners. No longer are students stuck in a classroom they don’t understand, trying to learn at a pace they can’t keep up with or participate in.”*

**PowerSchool**, another leader in eLearning solutions development also shares an important opinion:

*“Technology can help school staff improve IEP compliance necessary for state and federal guidelines as well as ensure adequate and timely funding is procured. Special education management solutions can verify the correct services are not only being offered to all appropriate cases but also tracked and reported on to maximize reimbursement”.*

There are many ways of how technology can help students with special needs. For example, some kinds of disabilities don’t allow students to use handwritten text that is an integral part of "traditional" education. Using technical tools intended for human speech recognition and synthesizing, you can avoid the necessity to use paper and pen during the lessons. Such technology would be also helpful for students with disorders that don’t allow to process visual information correctly.

Adaptive computing technology allows using digital devices to bypass challenging tasks. Screen reader applications such as JAWS along with specially designed Braille keyboards allow visually challenged students to use the computer.

Augmentative communication systems help students with speech problems to overcome the communication barrier. Such systems use picture charts, books, and specialized computers providing functions of word-prediction for more effective communication. The use of technology in special education helps break the barriers for people with disabilities and provides them with access to the most relevant educational programs. Properly designed software and hardware allow students with different abilities to get modern education and achieve any required information online.

Technology helps provide students with individual learning events, enables reaching higher flexibility and differentiation in educational methodologies. With modern technology, teachers can adapt to the possibilities of a particular student with minimum effort and choose one of the dozens of available learning tactics designed to meet the needs of individual learners.

**Dr. Imad -** We need to include increased awareness of accessibility requirements, diverse needs, and collaboration with different stakeholders. Inform strategies for creating more inclusive technologies!

**Question: How can we strategize for the future of AI in line with Arabic values and build on recommendations that have been developed to date?**

**Answer:**

**Mr. Mark -** AI can also play a role in helping students with learning disabilities develop their social and emotional skills. Many students with learning disabilities experience social isolation and struggle to form connections with their peers. AI can also play a role in helping students with learning disabilities develop their social and emotional skills. Many students with learning disabilities experience social isolation and struggle to form connections with their peers.

AI-powered social robots, such as those developed by companies like Global Robotics Laboratory, have developed **Moxie** - a robot companion on a mission to learn how to become a good friend to humans. What Moxie needs is a real-life robot mentor, and the G.R.L. has chosen that mentor to be a child. Designed to engage with all kids needing to learn social, emotional, and life skills in the face of autism, anxiety, depression, and more, Moxie and its mentor go on a series of missions that help them both to learn and grow. Moxie provides a safe and engaging environment for students to practice their social skills. Moxie recognizes and responds to human emotions, allowing students to engage in interactive conversations and activities that help them develop their social and emotional intelligence – I have seen it in action, and it is astonishing!

**Dr. Imad** - Incorporating cultural sensitivity, ethical considerations, and community engagement in technology development. Involve diverse voices in the decision-making process and prioritize values such as privacy, cultural representation, and respect for local norms.

In addition to providing personalized learning experiences and targeted support, AI can also help educators better understand the needs of their students with learning disabilities. By analyzing data on student performance and behavior, AI-powered analytics tools can identify patterns and trends that may indicate a learning disability. This information can help educators develop targeted interventions and support strategies to help students overcome their challenges and succeed in the classroom.

**Final Thoughts from Interviewees:**

*While the potential benefits of AI in education are clear, it is essential to recognize that AI is not a one-size-fits-all solution. Educators must carefully consider the ethical implications of using AI in the classroom and ensure that these tools are used responsibly and with the best interests of the students in mind. This includes addressing concerns about data privacy and ensuring that AI-powered tools do not perpetuate existing biases or stereotypes.*

*Moreover, it is crucial to remember that AI should not replace human educators but rather serve as a tool to enhance and support their efforts. Teachers play a vital role in the education of students with different abilities, providing empathy, understanding, and guidance that cannot be replicated by a machine. By combining the power of AI with the expertise and compassion of human educators, we can create a more inclusive and effective educational environment for all students.*

## **Appendix 5: Statement from Dr. Mohamed Koutheair Khribi, Head of Training Section at MADA**

MADA Academyis an initiative recently launched by MADA Center toward empowering people and institutions, through providing engaging and inspiring inclusive training and capacity development for all, as well as supporting open and inclusive digital education IDE services.

MADA Academy serves as a center of excellence in training, professional development, and lifelong learning for all. The academy offers a large selection of technology-enhanced training activities, delivered within various training modalities. There are basically two main training tracks so far: the ICT accessibility and Assistive technology tracks, each of which covers several topics, including the effective integration of technology in education toward inclusive and accessible learning experiences for all. Visit MADA Academy through the dedicated [website](https://academy.mada.org.qa/about/).

#### All training courses that we’re delivering are aligned to specific competency frameworks MADA ICT-AID competency framework. MADA ICT-AID competency framework is available through their dedicated [MADA ICT Aid website.](https://ictaid.mada.org.qa/?lang=en) This open competency framework describes all the relevant ICT accessibility competencies and abilities required for everyone to be able to use and develop accessible content, services and products. MADA framework can be used to assist professional education services, universities and individuals on delimiting the required relevant competencies in the ICT accessibility field and fostering the integration of ICT accessibility courses in universities curricula and training programmes. As an open framework, it can be adapted for use in different learning contexts and modes, and availed to develop, describe and publish ICT-AID aligned resources in courseware repositories. It is worth noting that MADA ICT-AID is also featured as an educational standard available to users of the well-known [OER Commons](https://www.oercommons.org/) digital library and collaboration platform. It can be used therefore to index and align ICT-AID educational resources providing accordingly ease of access and retrieval of Open Educational Resources OER serving global learners and educators.

Furthermore, in order to address the lack of availability of ICT-AID aligned courses worldwide, we have recently launched a dedicated open access repository: “[MADA ICT-AID OER Hub](https://oer.mada.org.qa/)”  intended to be e a Global knowledge hub featuring freely accessible resources on ICT accessibility. The Hub is gathering collections of open educational resources, aligned to MADA Framework. All resources are aggregated, curated and managed by MADA and partners, through collections, and groups, and development tools available on the Hub. The community of ICT accessibility professionals, experts, advocates, educators, and learners can discover, create, and share open learning and teaching resources, and connect with others to expand their capabilities and improve inclusive practices.

We have been collaborating with partners, namely, the Ministry of education and higher education (TEDC) and universities in Qatar (CCQ, HBKU, UDST) to develop digital accessibility courses aligned with MADA ICT-AID competency framework and to integrate these courses in undergraduate (CCP) and postgraduate levels.

For the time being I am trying to integrate AI capabilities into ICT-AID assessment.

To learn more about MADA ICT-AID Competency framework, visit the [MADA ICT Aid website.](https://ictaid.mada.org.qa/?lang=en)

To learn more about MADA OER HUB, visit the open-access repository available through the [MADA ICT-AID OER Hub](https://oer.mada.org.qa/) website.

Here is a list of four of our related publications:

* M. K. Khribi. (2022). MADA ICT Accessibility and Inclusive Design ICT-AID Competency Framework. Nafath, 7(21). <https://doi.org/10.54455/mcn.21.04>
* M. K. Khribi, A. Othman, A. Al-Sinani. (2022). “Toward Closing the Training and Knowledge Gap in ICT Accessibility and Inclusive Design Harnessing Open Educational Resources”. The 22nd IEEE International Conference on Advanced Learning Technologies ICALT 2022.
* M. K. Khribi, A. Othman, A.N.  Al Jabor. (2022). “Fostering ICT accessibility proficiency through Mada ICTAID Competency Framework”, The 8th International Conference on ICT & Accessibility (ICTA), 2021.
* M. K. Khribi, & A. Al-Sinani. (2021). Harnessing OER to build capacity in ICT Accessibility and Inclusive Design. Open Education Global Conference, OEGlobal’21.

## **Appendix 6: Statement from Disability Activist, Ms. Ghanimeh El-Taweel**

1. So, let's start with the information pack. The information pack had all the information about this session. However, it is not that accessible. An example, the colors used are not high contrast. It is blue on blue, and the text was not clear. I will leave it to the accessible document experts to educate us more on what else is needed.
2. I think the fact that this discussion was held in English and not Arabic is something to think about. Culture was brought up in the roundtable. Culture and language go hand in hand. The official language of the country is Arabic, and we need and want to encourage more Arabic responses and participation.
3. We actually are at a point where we cannot discuss disability or accessibility in just Arabic because Arabic discussions are so limited that we do not have proper terminology to address these issues.
4. I think the topic should have been more specific to Qatar. What is available in Qatar and how can Qatar improve? What is needed in Qatar? What is working and what is not working?
5. The whole idea of a roundtable discussion is good and well. But as Dr Josélia said in her introduction, it is now time to walk or even run. However, my experience with roundtables in Qatar so far have not gone past the discussion. I think it would have been better to form a task force and decide on what are the actions that needed to be taken and start that discussion. The information pack said there would be 10 key actions, but correct me if I am wrong, not even one was decided.
6. The terminology used in the discussion was quite problematic. Academics were using terms like normal vs special needs. This is completely offensive, especially when they referred to the end users who have disabilities as a niche and boiled everything down to does this make us money or not. One of the key words in the discussion was humanity. Is this humanity? Plus, as Dr Camilla said, it is an untapped market and as another said it is not two different apps it is one app that benefits all.
7. It was mentioned that AI is not judgmental. However, those of us who are Arab or Muslims are aware of how biased AI is. First, AI is not very compatible with the Arabic language, nor does it recognize specific linguistic and dialectal features. Plus ask AI about Palestine and it will show you how biased it is.
8. The topics discussed went beyond AI, which is extremely important. AI is just a tool and at the moment the foundation is lacking
9. A thought leader brought up legislation. I could be wrong but how is it legislation when it is specific to the governmental entities and no one else? Doesn't legislation mean there is a law that all must follow? Why is the legislation specific only to websites? Is that the only online platform that this covers?

To contact Ghanimeh please email her at [ghanimeh@gmail.com](mailto:ghanimeh@gmail.com)

## **Appendix 7: Statement from Leyla Mroueh, Disability Advocate and Public Affairs Manager at Sasol**

I am a person with an 'invisible' disability who has been employed in creative media environments, such as advertising, TV, and radio, for over 20 years. I never considered myself as having a disability as I have been fortunate to be surrounded by people who have made reasonable adjustments, allowing me to participate and contribute fully. In my work in broadcast media, and subsequent work in both the public and private sector, I have had the freedom to challenge traditional ways of working and processes to build more horizonal dot joining to drive human -centric warm webs of knowledge sharing, and create inclusive and equitable ecosystems, programs and initiatives that support organizational objectives and drive social impact.

This was and still is possible because of people, not technology. For my own experience to be the norm It was also a corporate culture of equity and inclusion, driven by organisations like Qatar Foundation and Sasol that champion diversity and have the institutional courage to think outside the box. For other, it may be the families who are informed and schools that embrace customized learning and other less tangible enablers that are the ‘difference’ that I believe ‘make the difference’ in any policy solutions ahead. With the increasing dependency on technology, AI has added value to my life by providing additional writing support through programs like Grammarly, and it has allowed me to personalise my educational journey through various platforms. However, AI is not perfect, and I still face challenges with software that is not user-friendly for neurodiverse individuals or digital services that have been made for more neurotypical users. I look forward to further advances as we build more multi-sectorial bridges and join new dots between people, resources and impact and encourage more dialog and debate.

### **Recommendations:**

1. We must view AI's potential holistically, in context with other human-centric enablers, equitable and inclusive practices, and reasonable adjustments to support individuals with disabilities in the future of work if we want to stand a chance of building a truly equitable and inclusive future for all.
2. We must ensure that technical equity and affordability are considered for any product or services. This can be achieved by having reduced rates [or](https://www.libraryofthings.co.uk/) lending libraries from which people can loan equipment.
3. Continue to spotlight senior leadership publicly supporting the importance of Ethical AI and championing it, celebrating startups and organisations working towards contributing to it in line with the 2030 vision.
4. We need stronger collaboration and coordination at a national level to ensure that laws and policies ensuring inclusive hiring practices, events, and activities are followed. There should be consequences for non-compliance.
5. It is important to raise awareness that not all disabilities are visible. This can be achieved through positive media spotlighting and role models that challenge perceptions and empower persons with disabilities.
6. We must work with families and schools to encourage more empowered thinking. This means acknowledging that everyone has a place to contribute to the future of work. In many cases, it’s just a matter of ensuring that the right enablers are in place, from inclusive hiring practices to matching skills to opportunities.
7. Leaders and HR teams need more training to ensure that they can see the benefits to businesses of having a fully inclusive and diverse workforce.
8. Greater media representation of persons with disabilities is important. Working closely with key stakeholders, this is very possible and will inspire others, as if you can ‘see it’, you can ‘be it’!

To contact Leyla, please send an email to: [leyla.mroueh@sasol.com](mailto:leyla.mroueh@sasol.com)

---END OF REPORT---