The fast advancement of technologies of various kinds, and our increased reliance on them in everyday life, in education, employment and public life has led to improved accessibility and inclusion for many persons with disabilities. Consequently, there is also increased interest in using various forms of technology to achieve inclusive education. However, progress is never a linear benevolent process, and technologies can also be a contributing factor to inaccessibility and exclusion. Therefore, in this statement, IF outlines the bases and need for a human rights approach to this increasingly important topic and what needs to be done to ensure that technological progress contributes to attaining inclusive education for persons with Spina Bifida and/or Hydrocephalus (SBH).

Human rights

‘Leaving No One Behind’ is the core principle of the 2030 Agenda of the Sustainable Development Goals (SDGs). When discussing inclusion and persons with disabilities one must begin with the UN Convention on the Rights of Persons with Disabilities (UNCRPD). The general principles of the convention are outlined in article 3; they include but are not limited to respect for individual autonomy, non-discrimination, full and effective participation and inclusion in society, equality of opportunity as well as respect for differences of persons with disabilities as part of human diversity and humanity. These principles must be at the heart of anything and everything that has to do with disability.

In General Comment no 4, the UN Committee on the Rights of Persons with Disabilities highlights that inclusive education has benefits beyond safeguarding the rights of students with disabilities. It is key to ensure high-quality education for all learners and fosters the development of inclusive, peaceful, and fair societies. Regardless of the educational tools or methods being discussed, we must always start with a strong foundation in the principles and obligations of the UNCRPD.

Accessibility and inclusion are too often big challenges for individuals with SBH. Stigma, discrimination and lack of awareness create barriers for individuals with SBH and their families when going about their daily lives and prevent them from achieving their full potential. Too often these barriers begin in childhood and in the schools. As highlighted in General Comment no 4, it is not only students with disabilities that suffer when inclusion and accessibility is not ensured, but the entire student population. When accessibility is prioritised, barriers that hinder inclusion are dismantled, fostering a more equitable and compassionate world where every individual can
thrive and be recognised for their invaluable contributions.\(^1\) It is in schools where communities can begin to dismantle the stigma against persons with disabilities among the next generation. By approaching inclusive education from a strong rights-based perspective we avoid inadvertently framing students with SBH as a challenge to be solved, but rather as part of humanity’s natural diversity, and therefore, a natural part of society.

**Obligations**

In the convention, it is article 24 which establishes the right to inclusive education. Despite limited competences of the European Union in this field, the right to inclusive education should be considered and protected by the EU, as being part of its fundamental values and principles and a universal human right. The State Parties to the UNCRPD, which include the European Union, commit to not only recognise the right of persons with disabilities to education, but also that persons with disabilities have a right to accommodations and support. Furthermore, it is established that persons with disabilities have the right to receive this support within the general education system. People with SBH require accommodations in order to realise their right to education; these can include technologies which enables students to cope with the cognitive symptoms such as short-term memory or processing challenges or mobility aids. Access to mobility aids, and the ability to use them in the community is particularly important for people with SBH. Yet, many in the SBH community struggle to afford and access the necessary mobility aids and/or find it hard to use them due to inaccessible environments.\(^2\)

Necessary accommodations do not only come in the form of physical items but also in attitudinal changes and acceptance from both staff and students,\(^3\) which highlights again that regarding scaling up the enrolment of children with disabilities and using technology to provide accessible learning models, the absolute first question that must be asked is how will these initiatives facilitate the implementation of the UNCRPD? Because it is not enough to provide support to be in line with a human rights approach to inclusive education, the support itself needs to be fostering inclusion and acceptance and not segregation or integration disguised as inclusion.

Technology itself is not sufficient for inclusion unless it is paired with inclusive mentality and behaviour. Often well intended behaviour does not allow for full inclusion and sometimes ‘integration’ is confused for ‘inclusion’. An integration approach is not just about simply placing persons with disabilities in existing mainstream educational institutions with the understanding that they can adjust to their standardised requirements. Its roots are in the stigmatisation of disability and the expectation that success for a disabled student is in their ability to look less

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disabled, that at times can mean no longer using assistive technologies even if these technologies make certain tasks easier to complete.

What really is needed is an inclusive approach to technology in education which reflects a process of systemic reform embodying changes and modifications in content, teaching methods, approaches, structures, and strategies with a vision to provide all learners an equitable and participatory learning experience and the environment that best corresponds to their requirements and preferences. Fostering a culture of disability acceptance counters stigma against persons with disabilities. It is about attitudinal change as well as change in resources.

**Commitments**
SDG 4 on education cannot be realised without including children with disabilities, and SDG targets 4.5 and 4.a explicitly focus on ensuring equal access to all levels of education and vocational training for children with disabilities. Technology appears in six out of the ten targets in SDG 4. These references recognize that technology affects education through several distinct channels, such as input, means of delivery, skills, tools for planning, and providing a social and cultural context.

The 2023 Global Education Monitoring Report by UNESCO⁴ stated that for persons with disabilities, technology can be an extremely useful tool to enable equal access to education. Whether it be in the form of technologies that are made with a universal design and used by all students, for example accessible eTextbooks, or assistive technologies which persons with disabilities use specifically to assist with their needs, the power of technology to overcome certain barriers is significant, especially as more and more technologies and software have accessibility and customisation features embedded in them, increasing affordability and easy access as well as making the use of assistive technologies less auspicious for the user.

**Implementation and Barriers**
Implementing article 24 of the UNCRPD and creating inclusive education has not been a straightforward process. Inclusive education for persons with disabilities is reliant on access to affordable technologies and assistive technologies of various types, including mobility aids, that are used largely or even exclusively in education for many years. Affordability is a particular concern for children with disabilities as they need more frequent adjustments or replacements as they grow and mature.

Not all technologies used by persons with disabilities are specifically adjusted or created for persons with disabilities. In recent years we have seen a very positive trend of technologies being created with accessibility features and settings embedded in them. This leads to technologies which all students can use equally, which is extremely important in generating inclusive learning environments.

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Experiences with these technologies have demonstrated their power to remove learning barriers. However, the challenge with upscaling programmes that use technologies to enable persons with disabilities to enrol in schools is not just affordability or access, but also stigma. Assistive technologies can make an invisible disability visible to other students, draw attention to the student with disabilities or even increase bullying. There also needs to be in many cases a culture change among school staff; some teachers are still reluctant to use technologies and may even forbid students with disabilities from using technologies in their classrooms.

General Comment no 4 also identifies many barriers of which State Parties to the convention have encountered in implementing article 24, and while lack of resources and tools, including technologies, can certainly be one of those barriers. Other barriers include lack of understanding of a rights-based approach to disability as well as problems that originate in societal attitudes and the design of social and educational systems including but not limited to institutionalisation, persistent discrimination and inappropriate or inadequate funding mechanisms. These are challenges that need to be tackled alongside early detection, support, and access to technologies.

The 2023 UNESCO report demonstrated that lack of awareness and insufficient training for staff remain significant challenges. Technology can also create inequalities and discrimination, for example not all devices and software are created equal regarding accessibility; and training in accessibility of technology is not only important for teaching staff, but also for anyone involved in procuring technologies for educational institutions.

But regardless of their limitations, when faced with stigma and societal attitudes, inclusive education cannot be achieved without access to technologies and mobility aids.

**Recommendations:**

1. Greater investment to ensure that all students with disabilities have access to the necessary equipment, including mobility devices, to complete their studies;

2. Implementation of awareness raising campaigns as outlined in article 8 of the UNCRPD, focused on the use of assistive technology by students and staff to reduce stigma;

3. Introducing any type of technology intended to assist students with disabilities should be accompanied by training for school staff;

4. Training for school staff on technologies for students with disabilities should also include training on a rights-based perspective to disability;

5. Ensuring that the use of technology is not used instead of ensuring accessibility of built environment.
The International Federation for Spina Bifida and Hydrocephalus (IF) is the international organisation representing people with Spina Bifida and Hydrocephalus (SBH) and their families worldwide. IF has country members in Africa, Americas, Asia-Pacific, and Europe with unique and expert knowledge on SBH. The mission of IF is to improve the quality of life of people with SBH and their families, and to reduce the prevalence of Neural Tube Defects (NTDs) through improving maternal health literacy, raising awareness, political advocacy, research, community building, and human rights education.