INCLUSIVE EDUCATION AND ACCESSIBILITY
ABSTRACT

**KEY REQUIREMENTS** for inclusive education are barrier-free school environments. The principles of universal design help to remove physical, sensory and cognitive barriers in the school system and to ensure accessibility, orientation, usability and safety of schools for all children and adolescents. Education policy, development cooperation and educational science will support the contextualisation process and the adaptation of the universal design approach to the local economic, social, cultural and religious conditions of the countries of the global south.
BARRIERS ARE USUALLY ASSOCIATED WITH MATERIAL OBSTACLES – PHYSICAL BARRIERS SUCH AS FENCES OR WALLS THAT HINDER OR PREVENT PEOPLE FROM FOLLOWING THEIR WAY.

OVERCOMING THESE barriers requires at least additional time and/or effort. Moreover, material obstacles have a symbolic character. A fence – however low and easily accessible it may be – clearly has the meaning of “No trespassing!” in all cultural and social contexts. The same information may also be conveyed by a sign, in which case the obstacle loses its direct physical/material meaning as a barrier.

ACCESSIBILITY MAY furthermore be governed by conventions, requiring people, for instance, to pay admission fees or to prove their membership by presenting a valid membership or ID card. Barriers may thus also be indicative of power relations and hierarchical structures. Barriers can both include and exclude people. They can ensure safety and constitute a benefit, while at the same time they may discriminate against people and deny them participation.

PHOTO
GIZ
Liliana Aldana, EDUVIDA
MAYBE ONLY, well, it is not that serious, but I do feel that since we have children with physical disabilities, for example children with paralysis who do not move and everything. I do feel, I have seen that I as an adult, even for me it is hard to go down to enter the school because everything is dirt with stones and when it rains, more stones. I think that if it is hard for me, it might be even harder for the lady’s son, for those who walk a little, or those who come with their devices, it is hard to go up and to come down. Another problem is the bathroom because here we have bathrooms in the back, so these might not be matters of life or death but they do put at risk their PHYSICAL INTEGRITY.

WE ARE helping the children with a free school bus paid by the municipality, to help them overcome that barrier, we could say the barrier of distance. Transportation is also part of what we were considering as a barrier, we provide free transportation in the morning, at noon and in the afternoon for those who study in THE AFTERNOONS.
WHEN EXAMINING the potential barriers that deny children and adolescents access to school, different dimensions are usually distinguished in research:

- **MATERIAL CONDITIONS** (e.g. lack of school buildings, insufficiently equipped classrooms, insufficient learning materials);

- **FISCAL FRAMEWORKS** (e.g. underfinancing of the education sector, lack of teaching staff or inadequately qualified teaching staff, charging of formal or informal tuition fees);

- **SOCIO-SPATIAL** or infrastructural conditions (e.g. long distance from home to school or inaccessible/hazardous roads);

- **POLITICAL AND/OR** economic structures (e.g. war, riots, poverty, hunger);

- **SOCIAL PRODUCTION** of inequality and discrimination against social groups based on collective stereotyping (sex/gender, skin colour, diseases such as HIV/AIDS, certain disabilities, linguistic, ethnic, religious or sexual minorities, social ostracism of orphans or street children etc.).
ALL BARRIERS TO EDUCATION THAT ARE BASED ON STEREOTYPING HAVE ONE THING IN COMMON: THEY RESULT FROM PEOPLE’S THINKING ABOUT OTHERS

The lack of data and information available on the topic comes together with the attitudes and fragmentary knowledge on the part of the decision-makers, who deny these groups the right to education, often on the pretext that they do not meet the requirements to attend school. Thus, a paradigm shift is necessary when it comes to investigating the reasons for dropping out of school: Children are not able to change the school, but the schools can be adapted in such a way as to ensure full access to education for all children regardless of limitations or impairments.

Children with disabilities are commonly assumed not to possess the intellectual or cognitive capacity to follow the curriculum. What all schools should aim at, though, is to develop curricula tailored to the needs of all children:

Inclusive education requires "a new, child-centred curriculum that includes representations of the full spectrum of people found in society (not just persons with disabilities) and reflects the needs of all children".

Another common justification for denying children with disabilities access to regular schools is that the school buildings are not adapted to children and adolescents with disabilities. Here, too, a change of perspective is required:

What infrastructural, physical and educational aspects need to be considered in the design of schools to make them accessible for all children? This perspective helps to make the topic of accessibility a key issue to be sustainably included in the design of schools across all levels.

---

2 Also see http://www.eenet.org/uk/resources/docs/barriers%20to%20education.pdf

3 KEY RESEARCH FINDINGS

IN THE ANALYSIS of the current state of research on the accessibility of the educational systems in the countries of the global south, methodological and applied publications (scientific journals, project papers and evaluation reports, good practice documents etc.) in English, Spanish and German were examined as to their use of central key words such as

ACCESSIBILITY, USABILITY, DISABILITY, INCLUSIVE EDUCATION, BARRIER-FREE AND UNIVERSAL DESIGN

What becomes obvious here is that this dimension of school-related inclusion, especially when it comes to possible barriers, has not received much attention: Apart from a number of project reports, country reports and comparative studies by international organisations, the amount of available empirical data is rather limited. Despite an extensive search through publications across various disciplines (architecture, civil engineering, educational and rehabilitation science) and across various regions, covering countries in Africa, Latin America and Asia, the list of findings turns out to be remarkably short. This, though, does not come as a surprise, given the fact that even in the global north this topic as it relates to school tends to be widely neglected in research and politics.

ONE FINDING derived from the analysis of the sources is that in the meantime in some emerging and developing countries the legal framework for embedding the principle of accessibility has been established in the form of appropriate political regulations. Comprehensive legal regulations have been introduced, inter alia, in Brazil (2008), Uganda (2010) and South Africa (2013). Among the 24 countries that participate in the programme “ISO/TC 59/SC 16 – Accessibility and usability of the built environment”, with the exception of a few industrialised countries, there are primarily emerging countries (South Africa, China, Colombia, Ecuador, Brazil and Uruguay); India and Bolivia are involved as observing countries only.

http://www.iso.org/iso/home/standards_development/list_of_iso_technical_committees/iso_technical_committee.htm?commid=291991
THE COUNTRY REPORTS examined here document, for the most part, building projects for barrier-free school facilities. Handicap International, for instance, conducts regional projects on inclusive school development in Burkina Faso, Liberia, Mali, Niger, Senegal and Togo that in some cases take aspects of accessibility in the planning of school buildings into account. Other NGOs organize similar projects in Bangladesh, Kenya, Nepal or Cambodia. A compendium on the topic presents “School Construction Strategies for Universal Primary Education in Africa” (Theunynck 2009), with just the example of Uganda explicitly relating to the issue of accessibility. Another document examines examples of inclusive design of school latrines in Ethiopia (Jones 2011).

VARIOUS INTERNATIONAL studies on the barriers to school attendance for children and adolescents with disabilities have yielded relatively similar results. A study on the situation in Rwanda, for instance, involving parents and caregivers, has shown the following: “Among others, the distance from home to the nearest school, school design and inappropriate roads were the main barriers. To achieve inclusive education, appropriate school buildings such as toilets, seats or chairs, playground, doors and class should be designed in a way that also considers children with disabilities.” With respect to the physical environment, the study “Schools for All: Including disabled children in education” examines the significance of the areas of transport and school buildings. This analysis on the situation in Zimbabwe, provided by the Leonard Cheshire Disability and Inclusive Development Centre in cooperation with the University College London, highlights a lack of assistive devices and teaching aids along with insufficiently trained teaching staff and long distances to school as major barriers to attending educational offerings.

THE BARRIER “distance to school” already clearly points to the fact that an approach to eliminating barriers to attending school for children and adolescents with disabilities cannot be regarded in isolation: The distribution and the design of schools in a rural area with poor infrastructure have direct implications for the educational opportunities of all children and adolescents. The analysis of this situation and the establishment of norms – a distance norm, for instance, defining the “maximum distance children are expected to travel to school” – concern all pupils. It is only when the situation of children and adolescents with disabilities is given equal consideration in a distance norm or in any other school quality norm (classroom size, teacher-student ratios etc.) that a strategy for one school for all can be realised. As examples such as “distance to school” or “classroom size” and “teacher-student ratio” indicate, solutions eliminating barriers which are of benefit to children with disabilities and meet their needs will also lead to the enhancement of educational offerings for all children and adolescents.
Despite the limitations of the research findings, it can be concluded, as a conceptual principle, that guidelines and policies should follow the universal design approach:

“Universal design means the design of products, environments, programmes and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. Universal design shall not exclude assistive devices for particular groups of persons with disabilities where this is needed.”

Isolated strategies for enhancing accessibility and inclusion for people with disabilities are insufficient; they are too often considered as additional, costly and optional measures in support of a minority.

12 UNCRPD, Art. 2
According to the Universal Design Approach, the barriers to attending school for children and adolescents with disabilities that arise from the physical school environment may be categorised as follows:

The Way to School
This concerns the distance from home to school, the accessibility/quality of roads under different weather conditions (rainy season, drought) with particular respect to users of wheelchairs, walking aids and walking sticks, safety aspects on the way to school (especially girls with disabilities are at risk of specific forms of violence) as well as the accessibility of public transport.

The Infrastructure of School Buildings
The school building is supposed to ensure full access for all learners and in particular for children and adolescents with disabilities. This not only includes the classroom, but relates to the school canteen, school administration (head teacher’s room/school office, staff room, library etc.), workshops or the school garden as well. For all rooms aspects such as circulation space (for users of wheelchairs, walking aids, and walking sticks), seating and workplace design (furniture and fixtures, space requirements) along with the possibility to provide orientation have to be taken into account.

When addressing the issue of the limited usability and accessibility of school toilets, commonly considered a major “weakness”, cultural, religious as well as disability-related aspects are to be united. Children and adolescents with disabilities may need special retreat or therapy rooms, where they can have some time off to better cope with the requirements of the school day. These rooms, thus, have to be incorporated into the planning of school buildings as well.

Extracurricular Learning Spaces Including Transfer
The importance of extracurricular learning spaces as barriers to school attendance is commonly underestimated. It is generally not perceived as a problem when children with disabilities are not able to attend cultural or political events, school trips or field trips to nearby companies or institutions and instead are being left behind and excluded from their class. This exclusion from common learning processes is sometimes even misinterpreted as positive, as it would leave children with disabilities more time for individual support or relaxation. What is required here instead is to provide a thorough analysis of the barriers encountered in these learning spaces (institutions, companies, theatres, museums) or in the related transfer and to address these accordingly.

---

WHEN IT COMES to eliminating the barriers identified above, especially those relating to the physical school environment, the pure preparation of a data checklist is not sufficient. Isolated technical data based on international norms such as ISO 21542 (Building construction — Accessibility and usability of the built environment) set the standards for the width of doorways and hallways, the height of handrails, the ways of approaching and entering the building or for circulation/turning spaces. Such normative guidelines may even prove counterproductive, as there may be a considerable gap between aspirations (such as the three types of toilets for wheelchair users, allowing for a variety of possible transfer positions\textsuperscript{14}, that are comprehensively covered by ISO 21542) and reality (where schools have no water supply, electricity or wastewater treatment system\textsuperscript{15}). This obvious gap may lead to resignation or to a significant postponement of the building project as a whole, with dramatic effects. Thus, analysing the specific requirements in a given situation and context, while also considering traditional, cultural and fiscal frameworks will certainly yield more useful results\textsuperscript{16}.

AS A FIRST step in the creation of an inclusive school environment, the different target groups need to be considered together to be able to structure the areas of realisation. Afterwards, the target structures are to be examined, and finally the structure for establishing the “universal design in physical spaces” approach as a section of “universal design in education policy” and for anchoring it there has to be addressed.
For the very reason that the basic principle here is the universal design approach, it is vital to consider different target groups. Only when including the requirements of all groups in the solution, the system becomes truly usable by all, thus making it a universal design system. For the universal design of physical spaces then, people with limited mobility, with motor and physical disabilities and with cognitive, linguistic, visual, hearing and mental impairments need to be taken into account.

Consequently, the areas of realisation include the following aspects:

Physical aspects
ramps instead of steps, doors without thresholds, sufficient width of doorways, hallways and entryways, learning and working places with adjustable heights to allow wheelchairs underneath;

Sensory aspects
adherence to the “principle of two senses”\(^ {17}\), room signage with lettering of sufficient contrast and size, use of the Braille writing system and/or of raised letters, alarm systems with light or acoustic signals;

Cognitive aspects
arranging pictograms and textual information in such a way as to make them perceivable and fully understandable to people with different linguistic and cognitive abilities.

\(^ {17}\) All sorts of information – especially safety-relevant instructions – must be communicated in different modes, in such a way as to address at least two of the three senses of seeing, hearing and touching.
THE AIMS OF ACCESSIBILITY

are:

Availability
steps, stairways and landings in front of
buildings or part of buildings as well as roads
that are muddy and full of water when it
rains and display a hard uneven surface
in dry seasons make it impossible for
wheelchair users and people with walking
aids to enter the building on their own;

Orientation
high-contrast signage on doors etc. enables
safe and unassisted orientation for people
with visual impairments;

Safety and usability
According to the principle of accessibili-
ty, being able to “physically get into a
room” is not sufficient. More than that, it
must be possible for people to use this
room for what it is intended for in the
way that is common, without additional
effort or assistance. Thus, in a workshop,
for instance, it must be possible to use a
workbench. This requires its adjustability to
allow wheelchairs underneath and maybe
also grab bars and fixation devices. In the
school garden, raised herb beds should be
installed alongside regular beds. Moreover,
in all accessibility-related solutions based
on the universal design approach, safety
aspects – the aim of a quick, complete and
easy evacuation of all pupils and teachers
in case of thunderstorm, flood, forest fire or
earthquake, for instance – are to be
considered as well. For the most part, both
aspects, that of safety and that of usability,
are strongly connected: The aisles in the
classroom need to be wide enough and must
not be obstructed by school bags or other
objects so that pupils using a wheelchair
or a walking aid/stick are able to use these
areas without assistance. At the same time,
sufficiently sized aisles not obstructed
by objects provide the necessary
prerequisite for evacuation in case of
emergency. Similarly, step edge markings
are not just indispensable for people with
visual impairments, but also helpful to
reduce the number of accidents on stairs
as a whole.

THE PROCESS OF IMPLEMENTING AND
ANCHORING

an accessibility policy is supported by various
institutions and organisations. The following
areas are involved in the process:

Laws
on the development of infrastructure, public
transport, school infrastructure, school
building programmes, building legislation;

Standards
on a direct level: norms such as ISO 21542
and processes of national implementation;
on an indirect level: with a focus on the key
principles and their implementation under
consideration of traditional, cultural and
fiscal frameworks (example of toilets) as
well as topographic conditions (e.g.
arranging for buildings on a slope in such
a way as to enable entrance without
additional ramps);

Knowledge and attitudes
The assumption that the reasons for
problems lie in the child’s disability and
the conviction that these cannot be
changed constitutes the major barrier.

It is therefore crucial to
promote the knowledge that
problems can be alleviated
or eliminated by changing
the environment, that there
are measures available to
ensure accessibility and
that these measures as
set by the universal design
approach are indispensable,
necessary or at least
convenient for all users.

This change of perspective
regarding knowledge and
attitudes concerns all areas
of society, but in particular
decision-makers at all
levels. The process of
implementing and anchoring
an accessibility policy,
especially when it comes to
the area of “universal
design in physical spaces”,
must emerge from the
efforts of society as a
whole.

18 cf. concept
"ISO and
developing
countries" – see,
for instance:
http://www.iso.
org/iso/home/
about/iso-and-
developing-
countries.htm
For the development of relevant laws, norms, standards and recommendations – for the granting of an award for outstanding school design or a similar strategy, for instance – various models of implementation are under discussion. For this purpose, the network of the local (school) community (the users), the civil society, NGOs and governmental institutions of all levels is to design concrete measures and at the same time aims at identifying and addressing basic requirements for change. From the perspective of accessibility then, the historically and culturally evolved understanding of steps as reification of hierarchical structures will be challenged, which contributes to facilitating decisions such as choosing a ramp instead of – and not in addition to – stairs or steps.

Also, the network is supported by experts in all phases of planning and implementation. This help to prevent that in the functional planning of a building, for instance, a classroom is placed directly next to a noise-intensive supply room or that tactile ground surface indicators are installed not as a guiding pattern but just as a visually appealing element. The effectiveness of all measures and the work of the experts, though, require constant evaluation by the users and the people concerned, as no law, no standard and no planning process (alone) can ensure the sustainable implementation of universal design.
THE IMPLEMENTATION process has to focus on different time periods, considering short- as well as medium- and long-term goals. It has to be noted, however, that a postponement of building measures to create accessibility to a “later period” or to when a “particular need arises” not only contradicts the principle of universal design, but also means considerable additional costs.

“Research has demonstrated that the cost of accessibility is generally less than 1% of total construction costs; however, the cost of making adaptations after a building is completed is far greater\(^{20}\). In the end, the creation and maintenance of accessibility includes various activities that do not necessarily incur costs and are not strictly dependent on governmental or non-governmental decision-makers. Providing and keeping a visually clear structure in the classroom, preventing disturbing noise, keeping aisles clear of obstacles (paying attention as to where school bags are placed etc.), providing adequate wheelchair storage and circulation/turning spaces (preventing misuse of the spaces for stocking purposes etc.) and several other strategies do not at all necessitate the implementation of cost-intensive measures. Instead, they just require the combined efforts of all people involved: the teaching staff, the service staff as well as the children and adolescents and their parents.

BEST PRACTICE – Uganda
Accessibility Standards have been published in 2010 by Uganda National Action on Physical Disability and the Ministry of Gender, Labour and Social Development\(^{21}\). They are part of the guidelines to be consulted for the construction of public buildings including schools\(^{22}\). Accessible toilets and classrooms have been constructed in the last years\(^{23}\).

BEST PRACTICE – Nepal
“Tribhuvan Madhyamik Vidhyalaya [school] is well equipped in terms of accessibility and physical infrastructure. The school is adjacent to the highway; this makes it easy for children with wheelchairs to access the school area. Within the building, children using wheelchairs do not face difficulties. There is a special toilet with a ramp.”\(^2\)


\(^{21}\) Uganda National Action on Physical Disability UNAPD) and Ministry of Gender, Labor and Social Development (2010): Accessibility Standards – A practical guide to create a barrier-free physical environment in Uganda.


\(^{23}\) cf. Theunynck 2009 p. 26 f. and 59

\(^{24}\) http://www.unicef.org/rosa/InclusiveNep.pdf page 23
FOLLOWING THE “one education for all” approach, the schools and educational systems in the countries of the global south will have to fulfil the criteria of accessibility with respect to infrastructural, architectural and educational aspects if children and adolescents with disabilities or impairments are not to be restricted in their access to education or even denied access altogether from the very beginning.

Education policy, development cooperation and educational science will identify and comprehensively analyse the particular local material, fiscal, socio-spatial and infrastructural barriers that hinder or prevent children and adolescents with disabilities from attending school.

Education policy, development cooperation and educational science will also investigate the local social, economic, cultural and political conditions in order to illuminate the genesis and social function of barriers and to challenge and potentially change them.

FOLLOWING AN isolated accessibility approach in education policy, development cooperation and educational science (and elsewhere), though, will certainly not be successful, as it traditionally refers to additional costly adjustments or rebuilding measures introduced at a later period for people with disabilities or impairments. The universal design approach may prove more adequate here, because it considers the usability of products, services and facilities for all people from the very beginning.

Education policy, development cooperation and educational science will actively promote the idea of designing educational systems based on the principles of universal design in all fields of education policy. Education policy, development cooperation and educational science will insist on the strict adherence to the principles and standards of the universal design approach in the planning, implementation and evaluation of educational programmes, also in the global south.
Education policy, development cooperation and educational science will, moreover, conduct and critically assess programmes aimed at testing and evaluating how the global concept of universal design can best be transferred into the educational systems of the global south. Education policy, development cooperation and educational science, thus, not only consider the universal design approach as a guiding principle, but will substantially contribute to its further development.

**INCLUSIVE SCHOOL**

Development in the countries of the global south relates to all areas of the school environment and aims at designing all infrastructural, architectural and educational fields according to the universal design approach, ensuring comprehensive accessibility for all children and adolescents, including those with impairments and disabilities.

Education policy, development cooperation and educational science will consider the needs of children and adolescents with limited mobility, with motor and physical disabilities and with cognitive, linguistic, visual, hearing and mental impairments in inclusive school development, enabling accessibility, orientation, safety and usability on the physical, sensory and cognitive level.

Education policy, development cooperation and educational science intend to create accessibility, orientation, safety and usability of educational programmes for all children and adolescents both on the way to school as well as in all rooms and facilities of the school building. The often-neglected extracurricular learning spaces in the school context are also included in the inclusion efforts.

For the consistent development of schools and educational systems according to universal design, international, national and municipal guidelines and policies are required in order to make all necessary information, feasible methods of implementation and tried and tested quality assurance tools available and usable across all levels.

Education policy, development cooperation and educational science support the formulation of laws, norms and standards of an accessibility policy to enable the sustainable implementation and continuous evaluation of the basic underlying ideas, principles, standards and strategies of universal design in the institutions and organisations of the education sector.

Education policy, development cooperation and educational science will – aided by the training of all people involved (school planners, architects, head teachers, school administration) and with participation of parents and pupils alike – promote the establishment of local/municipal networks for all those who are interested in the universal design approach and in discussing it and implementing it into practice within the context of the respective school development.
BIBLIOGRAPHY


SEE ALSO ON THE INTERNET

- http://educateachild.org/
- https://www.handicap-international.de/
- http://www.eenet.org.uk/resources/docs/schools_for_all.pdf
- http://www.iso.org/iso/home/about/iso-and-developing-countries.htm
- http://www.washington.edu/doit/
- http://www.udlcenter.org/

LIST OF FIGURES

- p. 16-17: Fig. 1 Elements of a barrier-free school environment according to the universal design in education (UDE) strategy; © Sven Degenhardt & Joachim Schroeder
- p. 22-23: Fig. 2 Accessibility of physical environment: universal design of physical spaces; © Sven Degenhardt & Joachim Schroeder
- p. 26-27: Fig. 3 The development process of a barrier-free school environment: "universal design in physical spaces" as a section of "universal design in education policy"; © Sven Degenhardt & Joachim Schroeder
HERAUSGEBER
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

SITZ DER GESELLSCHAFT
Bonn und Eschborn

Friedrich-Ebert-Allee 40 53113 Bonn
Telefon: +49 228 44 60-0 Fax: +49 228 44 60-17 66

Dag-Hammarskjöld-Weg 1-5 65760 Eschborn
Telefon: +49 61 96 79-0 Fax: +49 61 96 79-11 15

E-MAIL
info@giz.de

INTERNET
www.giz.de

GESTALTUNG
Betty und Betty
www.bettybetty.de