



Visual Impairment in the Classroom

Dr. habil. Sabine Lauber-Pohle
University of Marburg, Department of Educational Science



Outline

- Visual impairment and functional vision
- Didactical Aspects
- Interaction with students with visual impairment
 - Information and communication
 - Didactics and methods
 - Verbalization

- Information on Inclusion

EYE AND VISION

First thoughts

- What do you know about the topics blindness and visual impairment?
- Where may have one or both of these topics occurred?

- Which questions do you have about these topics?

Function of Seeing

Communication

- Verbal and nonverbal; direct, analog, digital; assisted and non-assited, writing

Orientation and Mobility

- Orientation principles, Orientation indoor and outdoor, mobility strategies, mobility devices

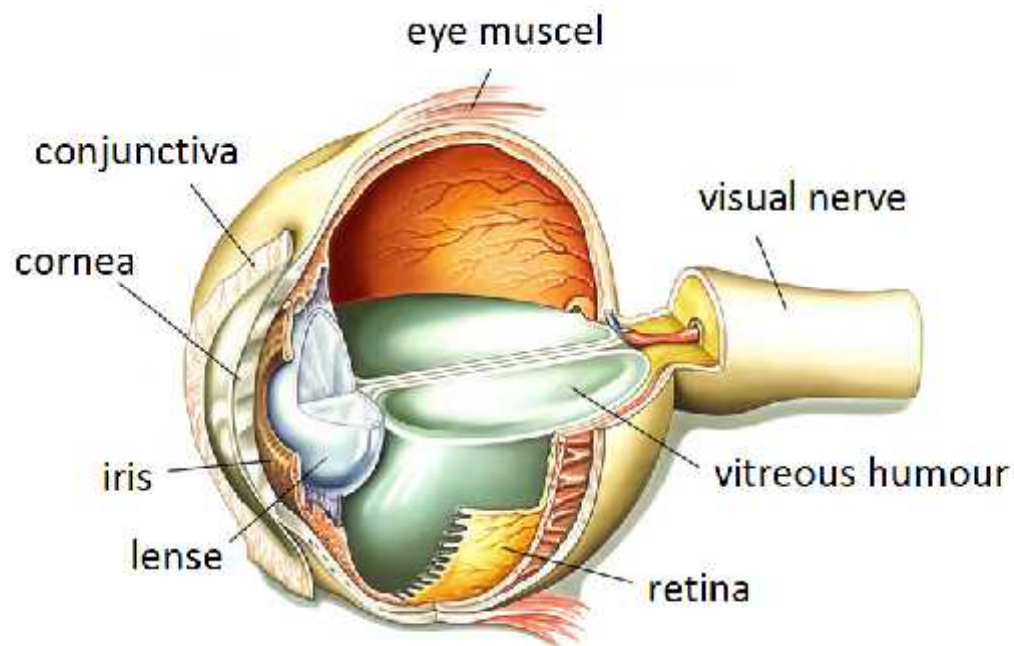
ADL (Activities of Daily Living)

- executional functions and organization of everyday life, health and care, clothing, nutrition and food, housekeeping, communication and interaction

tasks, which need close vision for a longer time

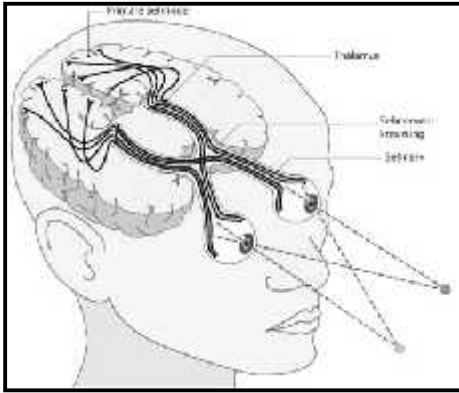
- writing, reading, drawing, needlework, practical work

Cross section through the eye

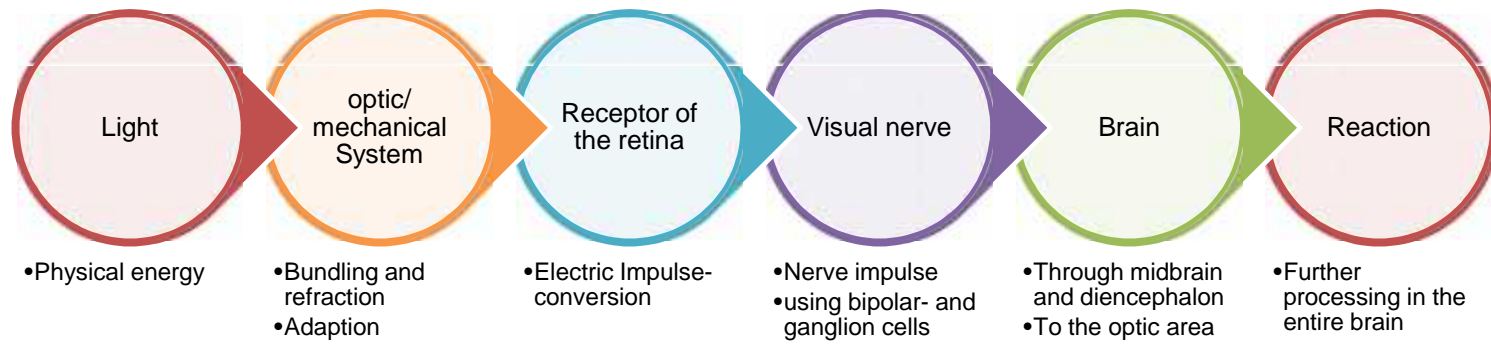


<https://www.gesundes-auge.de/auge/aufbau/>

- Changes of vision
 - myopia
 - hyperopia
 - presbyopia
- Corneal irregularity
- Clouded lens
- Retinal detachment
- Changes in the visual field








Process of Vision



Nach Grehn, 2012, S. 14

WHO - definition of blindness and visual impairment

Classification of severity of vision impairment based on visual acuity in the better eye

Category	Visual acuity in the better eye	Worse than:	Equal to or better than:	Worse than	Equal or better
Mild vision impairment 	6/12	6/18		0,5	0,3
Moderate vision impairment 	6/18	6/60		0,3	0,1
Severe vision impairment 	6/60	3/60		0,1	0,05
Blindness 	5/60			0,05	
Near vision impairment 	N6 or M D 8 or 40cm				

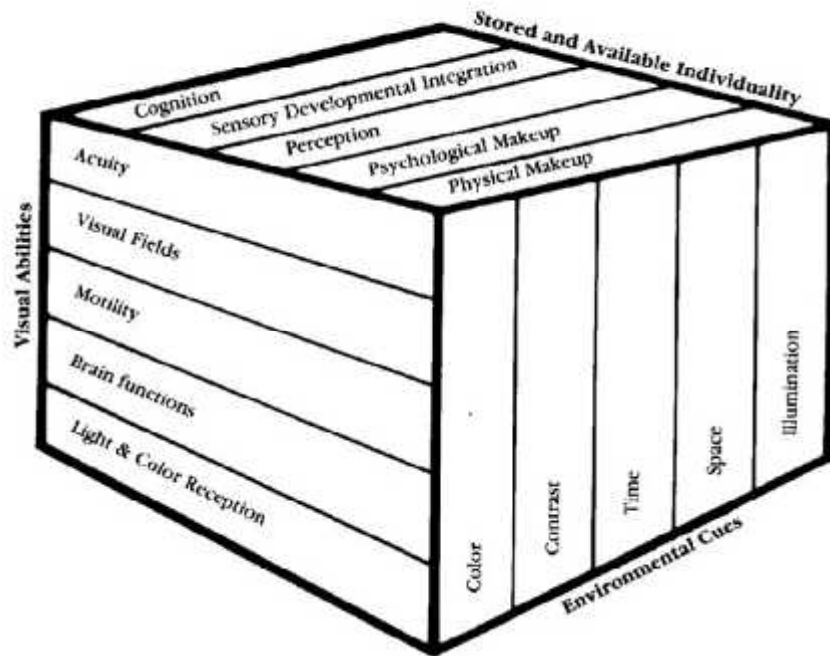
Typically, epidemiological surveys measure the degree of visual impairment and blindness according to the above classification table using visual acuity (61). Severe visual impairment and blindness are also categorized according to the degree of constriction of the central visual field in the better eye to less than 20 degrees or 10 degrees, respectively (62, 63)

World Report on Visual Impairment 2019

Most Common Eye Disorders in Europe

- Age dependence Macula-Degeneration (AMD)
 - Glaucoma
 - Diabetic Retinopathy
 - Retinopathia Pigmentosa
 - Retinal detachment
 - Cataract
 - Neural diseases
 - CVI
- [Fact Sheet WHO](#)
 - [World Report on Vision Impairment](#)
 - [IAPB – Atlas](#)

Corn Model of Functional Vision



Visual Abilities

- Acuity (Vision)
- Visual Field
- Motility
- Brain functions
- Light and Color Reception

Environmental Cues

- Color
- Contrast
- Time
- Space
- Illumination

Individual Abilities

- Cognition
- Sensory Developmental Integration
- Perception
- Psychological and Physical Situation

Model of Visual Functioning. From "Visual Function: A Theoretical Model for Individuals with low Vision," by A. L. Corn (1983), Journal of Visual Impairment and Blindness 77, p. 374. Copyright © 1983 by American Foundation for the Blind. All rights reserved.

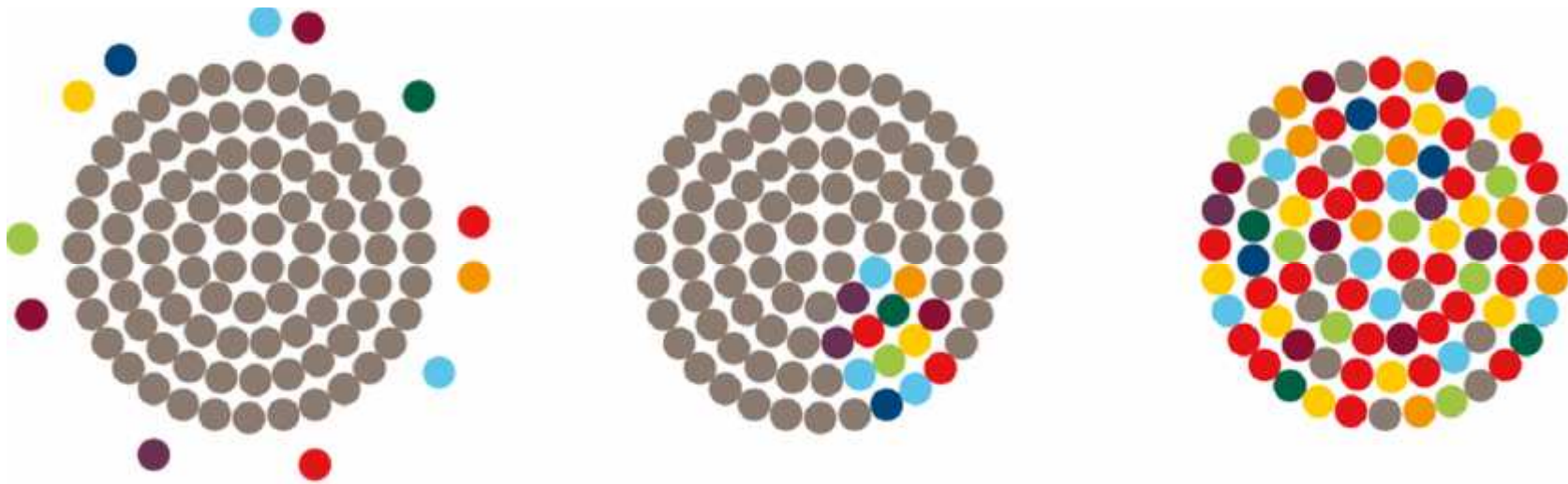
Typical Aids and Tools

- White Cane
- Braille Printer and digital line
- Screen reader
- Laptop/Tablet with Camera: Filming of Information and enlargement
- Audio and speech assistance via smart phone



INCLUSIVE ORGANISATIONAL DEVELOPMENT

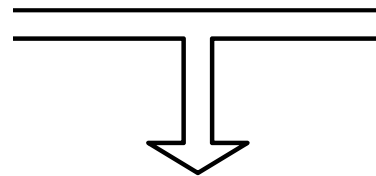
Terminology



To Study With Disability - Double Necessity of Orientation

Common Requirements

- Choice of subject
- Finding suitable educational programs offers
- Organize learning process (learning conditions, social acceptance, biographic fitting)



Search movement

Specific Requirements

- Clarification of disability, specific accomplishments belonging time/room/content/form/etc.
- „learning under conditions of disability“

Inclusion in education - a multilayered task

- Inclusion involves all of the institution
 - Inclusion requires
 - a mind-set and culture of inclusion
 - Inclusive structures and procedures
 - Inclusive interaction and communication
 - A network of educational institutions, politics, social organizations and organizations of self-representation
 - Training and qualification for all staff members (administrative, planning and teaching staff)
 - Awareness for all members (fellow students)
- >> Practice and patience and time for reflection and development.

4-A Scheme of the UNESCO

Availability – Verfügbarkeit

- For all levels of the educational system
- Every age
- All regions/areas

Accessibility – Zugänglichkeit

- On physical, economic, administrative, legal, gender-related, socio-cultural level
- And disability

Acceptability – Annehmbarkeit

- Qualified staff and accessible materials
- Adequate level of programs and degrees

Adaptability – Anpassungsfähigkeit

- Adjustment to different forms of disabilities
- Adaption of time, space, materials and content

DIDACTICAL ASPECTS

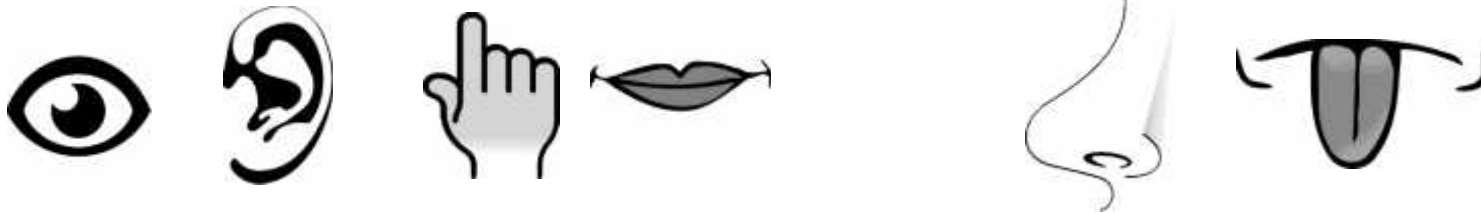
Two-Senses-Principle

When possible, **at least 2** senses should be addressed in every situation.

Possible Forms:

- visual, auditive, tactile/haptic,

olfactory, gustatory



Examples:

- Written Information plus audio description / audio file
- Labeling of the doorplate with Braille (tactile) and normal print (visual)
- Written Information plus digital information (QR codes, links)

UDL for Training I (Mcquire, Scott & Shaw 2018)

1. Broad, equitable Usability

- Usable instructions as well as teaching-learning-materials and -materials for all students.

2. Flexibility in Use:

- Planned teaching and learning by considering individual abilities.

3. Simple and intuitive Use:

- Unnecessary complexity of the learning environment should be avoided, without reducing academic standards.

4. Perceptible information:

- All necessary information are effectively available for the students.

5. Tolerance for Error:

- Individual learning behavior and individual conditions will be considered.

UDL for Training II (Mcquire, Scott & Shaw 2018)

6. Low physical Effort:

- The physical strain will be held as low as possible.

7. Size and space for access and usage:

- Corresponding design of buildings and classrooms.

8. Learning community:

- Consultation hours, good and regular communication between students and staff, promoting communication between the students.

9. Learning atmosphere:

- Respect towards diversity; Communication of high expectations; direct communication with students

3 Network of the brain in UDL

Perceptual Network: Description and Explanation

- Several forms of presentation:
 - addressing different senses,
 - varying redundancy in an explanation,
 - combine symbols and language.

Strategic Network: Action and Expression

- Diverse possibilities of action,
- active participation and experience
- Variation of forms of cooperation, preparation and presentation.

Affective Network: Commitment and Participation

- Promote motivation
- participant- and biographical orientation
- consider rhythm and arc of suspense, breaks,
- promote self-regulation

UDL Matrix of Reflection

Teaching	Service	IT and literature	Facilities
Group dynamics	planning Rules and values	purchase, development and procedures	planning rules and values
interaction		IT-rooms, Hard- and Software	appearance
equipment	evaluation	staff	entrances, lanes, lettering
Methods of teaching	staff	Input/Output, navigation, adaptivity	Equipment and technology
IT and resources	IT and resources	Intersection of assistive technologies	IT
Feedback and evaluation	Events		safety
adaption			adaption

PRACTICAL DIDACTICAL ASPEKTS

How to reflect and support?

- Reflections about students
 - Blind or Low Vision
 - (Learning-)Biographie
 - Assitive needs and existing assitive devices
- Reflection of Teaching Surroundings
 - Building, ways to school and class, classroom
 - Seating, Illumination, Accustics, Assistive Devices
- Reflection of Teaching Materials
 - Accesability, barrier reduced or barrier free
 - Adapted materials for students with VI
 - UDL
- Reflection of Teaching Methods
 - Group activities
 - Verbalization of visual Material
 - Practical Assistance

Arrangement of the Environment

- ✓ Barrier free Access:
 - ✓ Guidelines, QR-Codes/Braille for Signs,
 - ✓ accessible information about class room and office hours,
- ✓ Accessible Information about procedures (Websites, Leaflets, etc.)

Communication and Visual Impairment

- ✓ introduce yourself with your full name, maybe even an description of yourself, when meeting the first time.
- ✓ Speak with the person not about the person (direct communication)
- ✓ Be punctual

- ✓ ask, whether the person needs help or not
- ✓ offer help and wait for instructions

- ✓ Do not touch persons without announcing yourself and asking the person if it is o.k.

» s.a. So und nicht so.

Meeting at the office

- **Orientation:**
 - Description of the room and its position in the building (clock principal, distances in meters or doors)
 - Description of the room situation and kind of seating arrangement
 - Exercise: write an description of the way form the bus stop to your office
- **Sighted guide technique**
 - Offer your elbow for orientation
 - Be the first person, who enters rooms, etc.
 - Announce steps and doors
 - Use your arm as a guideline
 - Video: <https://www.youtube.com/watch?v=AuGb4yge-ys>

Classroom

- ✓ Illumination and acoustics should be considered
 - ✓ Dimming of lights, blinders, avoiding of echoes
 - ✓ Blend free surfaces and lights
- ✓ Clear seating structures
 - ✓ Give information about building and classromm (verbal, tactile)
 - ✓ no bags or cables on the floor
 - ✓ Allow free choice of seating for best position
- ✓ provision of electricity for assistive technology

Materials

- ✓ Accessible materials: Presentations, texts, information
 - ✓ Make it a routine to develop barrier free documents – step by step
 - ✓ Use clear typography and large prints
 - ✓ Hand out materials in advance for transfer and preparation
 - ✓ Talk to students about best access
 - ✓ Possibility to format, no secured documents
 - ✓ Using service centers for transfer and assistance if possible
 - ✓ [Guide to accessible Documents: https://www.euroblind.org/publications-and-resources/making-information-accessible-all](https://www.euroblind.org/publications-and-resources/making-information-accessible-all)

Alternative texts and verbalization

- ✓ In class
 - ✓ verbalize all content which is on display
 - ✓ Special attention to charts, tables, diagrams and pictures
 - ✓ Allow filming or audio recording if possible

- ✓ Written material:
 - ✓ Offer alternative texts to all images, that contain information
 - ✓ Keep the description short and neutral
 - ✓ Include the source
 - ✓ Mark non-informational illustrations as illustrations

Group work

- Create an open atmosphere
 - encourage students to tell about best assistance
 - Raise awareness for disabilities within the learning group
 - Without creating outings and stigma
- Adapt methods to the needs of the students
 - Hand out written text in advance or provide audio files
 - Look for alternatives to visual task by using a second sense
- Organize groups and important content by numbers, letters, or tactile information instead of color only
- Make sure digital learning environments and platforms are accessible

Examination and grades

✓ Compensation of disadvantages

- ✓ Generally contained in the general regulations
- ✓ To be granted by application
- ✓ board of examination decides about the form
- ✓ It is useful to have additional individual arrangements between examinee and examiner

✓ Possible Forms of Compensation

- ✓ More time, different medium (own Laptop, oral instead of written exam, reformulate proposing of questions with visual contents)

- Goal: solution instead of formalism
 - Equal requirements not identical procedures

How to reflect and support? revisited

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 - Group activities
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LINKS AND LITERATURE

Literature

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- ERIC - ED611680 - Creating Inclusive Learning Opportunities in Higher Education. A Universal Design Toolkit, Harvard Education Press, 2020-Dec (2022). Online <https://eric.ed.gov/?id=ED611680>,
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Links and Videos

- Fact Sheet Visual Impairment WHO:
<https://www.who.int/news-room/fact-sheets/detail/blindness-and-visual-impairment>
- UN CRPD:
<https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html>
- Marrakesh treaty: https://www.wipo.int/marrakesh_treaty/en/
- Accessible Documents: <https://www.euroblind.org/publications-and-resources/making-information-accessible-all>
- Sighted guide techniques: <https://www.youtube.com/watch?v=AuGb4yge-ys>

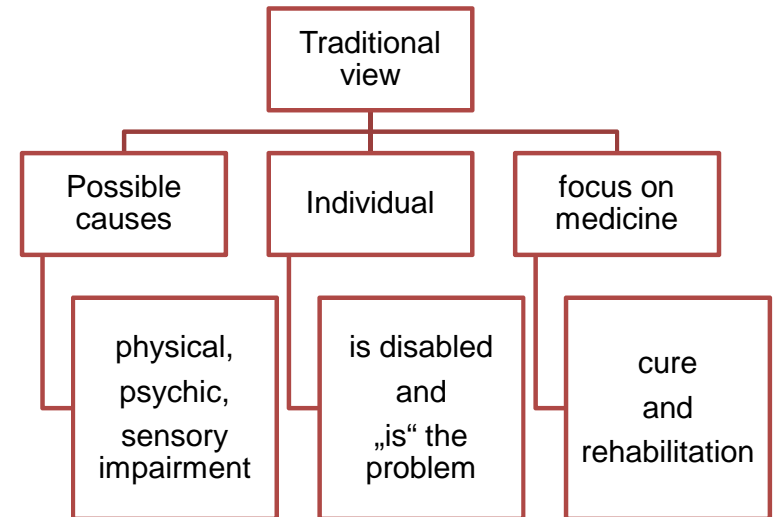
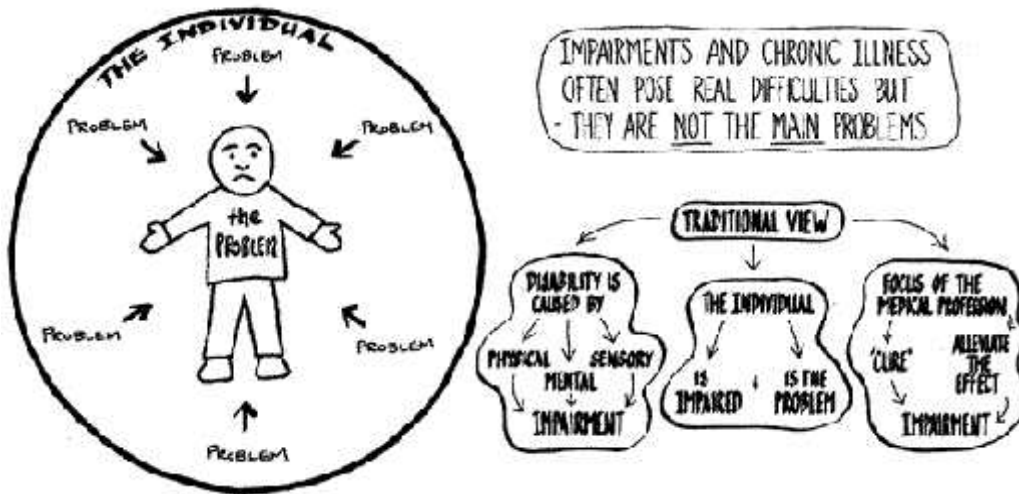
INCLUSION – BASIC THOUGHTS

Aim of Inclusion

- „Inclusive education signifies, that all persons regardless of their gender, religion, ethnical background, social or economic situation or disability – have the possibility to achieve a qualitative education and to unfold their potentials.
- **Not the learning person needs to integrate itself into the existing system, but the educational system has to consider all of the learners needs and to adapt to them.**
- Inclusion focuses on different needs of all learners and comprehends diversity as a chance of learning- and educational processes.“
 - (German USESCO Comission e.V. 2014)

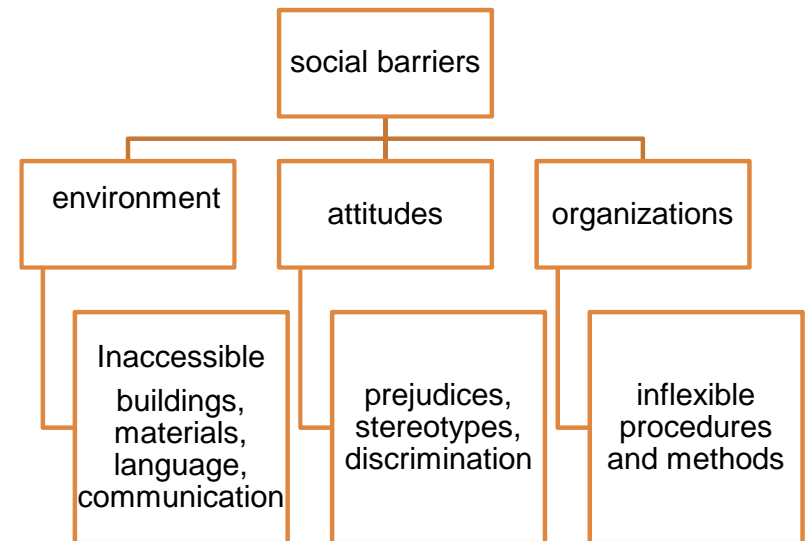
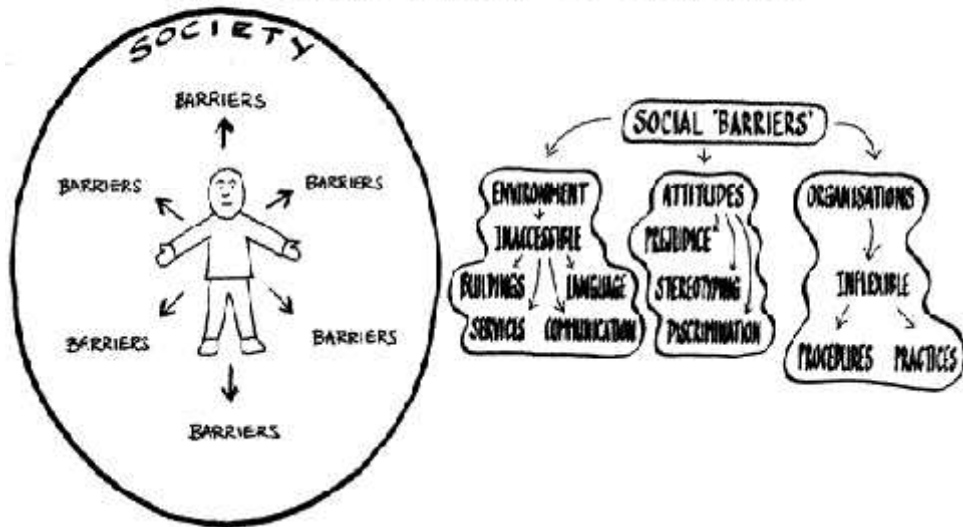
Medical Model of Disability

THE MEDICAL MODEL OF DISABILITY



Social Model of Disability

THE SOCIAL MODEL OF DISABILITY



Models of Disabilites

Perspective	Individualistic Model	Social Model	Human-Rights Model	Cultural Model
Theory	„personal tragedy“	„social suppression“	„Citizen- and human rights“	„De-Construction“
Disability-term	Personal Problem	Social Problem	Human rights topic	(Non)disabled = cultural interpretive frame
Solution approach	Individual treatment	Social action	Protection of human rights	Acceptance (social and socially)
Approach of action	Expertise of the experts	Experience of those affected	Notion of human dignity	Experience of all members of one culture
Aims	Individual adaption	Social change	Equality	Cultural change

Vgl. Waldschmidt 2005, Boban/Hinz 2011

Convention on the Rights of Persons with Disabilities (CRPD)

§ 1 – Purpose

- The purpose of the present Convention is to promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities, and to promote respect for their inherent dignity.
- Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.
- Full Text: <https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html#Fulltext>
- UN CRPD in Georgia:
 - https://www.ge.undp.org/content/georgia/en/home/library/democratic_governance/un-convention-pwds-rihgts.html
 - <https://georgia.un.org/en/114986-un-commends-ratification-optional-protocol-convention-rights-persons-disabilities>

CRPD §24, Education, Passage 1

- 1. States Parties recognize the right of persons with disabilities to education. With a view to realizing this right without discrimination and on the basis of equal opportunity, States Parties shall ensure an inclusive education system at all levels and lifelong learning directed to:
 - a. The full development of human potential and sense of dignity and self-worth, and the strengthening of respect for human rights, fundamental freedoms and human diversity;
 - b. The development by persons with disabilities of their personality, talents and creativity, as well as their mental and physical abilities, to their fullest potential;
 - c. Enabling persons with disabilities to participate effectively in a free society.

CRPD §24, Education passage 4+5

- 4. In order to help ensure the realization of this right, States Parties shall take appropriate measures to **employ teachers, including teachers with disabilities, who are qualified in sign language and/or Braille**, and to train professionals and staff who work at all levels of education. Such **training shall incorporate disability awareness** and the use of appropriate augmentative and alternative modes, means and formats of communication, educational techniques and materials to support persons with disabilities.
- 5. States Parties shall ensure that persons with disabilities are able to **access general tertiary education**, vocational training, adult education and lifelong learning without discrimination and on an equal basis with others. To this end, States Parties shall ensure that reasonable accommodation is provided to persons with disabilities.

Statements about Inclusion – Hinze (2008)

- Inclusion faces the heterogeneity of groups and their diversity of people in a positive way.
- Inclusion exerts itself for gaining control of all dimensions of heterogeneity, and therefore, to take a look at both topics
- Inclusion opposes dichotomous thinking (man – woman, disabled – non-disabled people, poor – rich, educationally advantaged – educationally disadvantaged)
- Inclusion is orientating towards the civil rights campaign and is opposing itself against any social marginalization.
- Inclusion represents the vision of an inclusive society, that reduces discrimination and marginalization.

Terms

- disability – impairment – disablement/handicap
- participation
- stereotypes and prejudices
- marginalization - stigmatisation
- ableism

