



# GUIDELINE FOR ADJUSTING THE LEARNING PROCESS AND PARTICIPATION OF STUDENTS WITH DISABILITIES



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# **Guideline for adjusting the learning process and participation of students with disabilities**

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# Guideline for adjusting the learning process and participation of students with disabilities

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# Introduction

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Persons with disabilities have been acquiring higher education ever since. However, there is a need to improve and develop the adjustment and delivery of the teaching process with a support that would improve their access and equal opportunities for learning and participation. It is necessary to enable equality in the acquisition of knowledge, skills, competencies and opportunities for advancement in accordance with the potentials, possibilities and interests of students with disabilities.

The approach and delivery of higher education should be based on the belief that the personality is a characteristic of a person from which dignity arises, equal and inalienable rights in the community.

This is recognized through the Strategy for inclusive education 2019-2025. At a higher education level, an inclusive continuity should be maintained and the principles of equal opportunities should be fully met through selection in accordance with individual possibilities, the teaching process should be adjusted to the individual, and support should be provided for achieving educational outcomes and individual characteristics.

We believe that we offer the teaching staff at the tertiary level of education useful materials that will serve in many ways, with the aim to optimally advance the learning and participation of students with disabilities. Having this Guide, the teaching staff of the faculty can be informed about the characteristics and specifics of a certain disability, gain a better insight into the nature and the need to adjust the teaching process. As well as, to get acquainted with the possibilities of using aids that will facilitate the work and progress of students with disabilities, and make it easier for them to prepare, adjust the teaching and select the strategies for the delivery of the teaching process for these students.

# Legal framework and strategic documents

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All actors in higher education at the European level have incorporated views and recommendations on equal opportunities in higher education in their strategic documents.

These include the institutions of the European Union, the governments – signatories of the Bologna Process, the Organization for Economic Co-operation and Development (OECD), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the International University Association (part of UNESCO), the European University Association (EUA) and the European Student Union (ESU).

Under the Convention on the Rights of Persons with Disabilities - States recognize the right to education of persons with disabilities. In order to exercise this right without discrimination and on the basis of equal opportunities, States are obliged to ensure comprehensive education at all levels and lifelong learning.

*The Strategy for Integration of Persons with Disabilities in Montenegro 2016-2020* in the field of education aims to - Ensure the right to education without discrimination and an inclusive system at all levels, lifelong learning aimed at full development of potential, dignity, self-worth, inclusion with reasonable adjustments according to the needs of individuals.

*The Strategy for the Protection of Persons with Disabilities from Discrimination and Promotion of Equality for the period 2017-2021*, whose strategic goal in the field of education and vocational training is - To enable inclusive education at all levels, for all pupils and students.

*The Strategy for Inclusive Education* specifically points to an envi-



*ronment* that should be convenient and accessible for *learning* - that everyone feels safe, supported, stimulated and able to express themselves. A *successful transition* is important - pupils receive adequate support to ensure a successful transition from school to vocational or higher education, and then to work. A promotion and access to tertiary education is planned, the development of guidelines with recommendations for adjusting teaching, providing accessible and adjusted teaching materials, and to encourage faculties that are close in profile for assistive support.

## Values and principles

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The right to education implies, inter alia, competence-based higher education accessible to all (European Center for Training and Research in Human Rights and Democracy - ETC, 2003, Graz). The responsibility for the realization of the right to education is assumed by the governments of many countries by incorporating these rights into their laws.

Inclusive university education should be based on the following principles which can be evaluated and monitored based on the following questions offered:

- *availability*: sufficient number of adequately equipped institutions.
- *equality & equity*: provide all members of the university community with equal conditions for professional formation, expression of abilities and advancement.
- *accessibility*: institutions physically and economically accessible, equal access to all social groups.
- *acceptability*: educational programs provide quality education, study conditions in accordance with minimum international standards.
- *adaptability*: flexible system, meets the interests of pupils/students, the wider community and the labor market; adapts adequately.

According to the Law on Higher Education, education is accessible to all

and can not be indirectly or directly limited on the basis of, inter alia, disability.

A principle of affirmative action is applied for persons with disabilities when enrolling in study programs. The affirmative action implies special measures for creating conditions for equality and protection of the rights of persons who are on any basis in an unequal position in education.

A student with a disability has the right to take exams at a place and manner adapted to his/hers abilities in accordance with the statute of the institution.

The Law on Academic Integrity regulates moral and professional principles that academic and other staff and students must comply to. Academic integrity is academic behavior that ensures the preservation of academic integrity, dignity of the profession, quality of work and products of work, the spirit of equal cooperation with all participants in the academic process, truth-orientation as a fundamental value and respect for legal regulations as the basis of responsibility of members of the academic community in accordance with the principles of academic integrity. The academic community consists of academic staff designated by special law and students. The principles of academic integrity are: honesty, objectivity, openness, freedom in teaching and research, and accountability to the academic community and society.

Members of the academic community should professionally, responsibly, conscientiously and ethically properly fulfill their obligations towards students. The Code of Ethics of the University of Montenegro prescribes that: "Any form of discrimination against students on the basis of, inter alia, disability is prohibited".

To understand the nature of necessary adjustments to students with disabilities, it is important to look at their characteristics and specifics of functioning in the best way, the obstacles caused by disability and those that arise from the barriers that society sets on them.

The right path in quality studying is the individualization of the approach according to the possibilities and specific needs of a person with a disability.

# Adjustment

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The material is designed according to the types of disabilities of students: visual, physical, hearing, autism spectrum, dyslexia, ADHD.

Informations are organized in a manner that reflect:

- Description of the characteristics of disability or difficulty in functioning;
- List of aids which can be of use with certain disabilities or difficulties in functioning;
- Suggestions on treating the student with certain disability or difficulty in functioning;
- Ideas and recommendations for adjusting the teaching for a student with a particular disability or difficulty in functioning.

\* These are valid at all times when promoting, advocating and implementing the principles of academic integrity. As in the part of student responsibility - respect for the dignity of academic and other staff, rights, obligations and academic integrity of other students, fair and ethical fulfillment of their obligations for the purpose of academic excellence. Thus, in relation to the responsibility of academic staff - contribution to the development of students and the transfer of the highest level of scientific knowledge, respect for the dignity of students, an objective, reliable and uniform system of student performance and assessment.

\*\* It is important to be to mention that in accordance with the Law on Social and Child Protection, one of the support services for living in the community is personal assistance. A personal assistant assists a person with a disability in daily activities that he or she would not be able to do, or would find it difficult, without the assistance of another person. Most often, it is in the situation such as going to work, to the faculty... In that case relationship is contracted: person with a disability is employer to the personal assistant which are employee. A personal assistant cannot be a family member. It is realized with licensed service providers through a contract that defines the type of assistance and the duration. It is usually provided by project.

# Adjustment of teaching and learning process for students with visual impairments

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## Characteristics of visual impairment

Visual impairments are manifested as reduced or completely absent sensory sensitivity to light stimuli, which significantly interferes with visual communication. They are represented by the rest of the vision in percentages. The impairment can be present from birth or occur as a result of eye diseases at any age. There is a difference between:

- Partial loss of sight
- Complete loss of sight

They affect different segments of visual functioning and the way sight is used - the use of sight does not depend on the rest, but on the functionality of sight. Some persons do not see clearly, some will see the central part blurry, and the peripheral more clearly, some see only black and white, some rely on only one eye. Some persons do not see in low light, while others need to darken the room.

Due to the impossibility of collecting information by sight, students with complete loss of sight engage other senses in order to compensate for the absence of the senses of sight (tactile, auditory, olfactory and kinesthetic perception). Their tactile inclinations, preserved channels of perception and communication (audio above all) should be used, and at the same time they should be oriented towards their management. In order to successfully conduct the teaching process for a student with visual impairment, it is important to be informed about the specifics and needs for adjusting the teaching, to have information about the measure of visual functionality and what are the strengths of the student. Some

students with visual impairments have difficulty navigating, functioning independently, and organizing their time. Gathering information based on touch *takes longer*.

**Aids** - In working with students with visual impairments, tactile and means that have enhanced sensory stimuli are recommended.

The faculty should enable students to use assistive technology.

**Assistive technology** is a collective name that includes assistive, adaptive and rehabilitation aids. It is any product, piece of equipment or system, whether used in its original form, modified or adapted, that is used to increase, maintain or improve a person's functional capabilities. It is a set of instruments, apparatus, means and devices that they use to perform tasks that they would not otherwise be able to perform. Instruments can be industrial products or home-made tools - from simple pencil grips, to expensive equipment such as computers.

The assistive technology which is most commonly used for students with visual impairments is a *screen reader and speech support*. Written information, i.e. learning materials, are translated into speech with the help of a software program. The *Braille display* is the hardware part of the electronic notebook for the blind and provides reading of written information, and its immediate function is to convert written text into a tactile form – *Braille Alphabet*. There are *programs for enlarging the content on the screen and electronic magnifiers*.

Students with a partial loss of sight can use notebooks with accented lines and squares on matte paper marked with contrast, tactile paintings, sound books, soft pencil, black felt-tip pen, contrasting lines, line spacing, typoscope for text orientation (handmade cardboard or plastic, reading aid in following the line, moving from line to line, marking the beginning and end of the line when reading the text). Felt-tip pens of different thicknesses and high-contrast colors, sometimes they need additional lighting that can be placed on a table, and sometimes it can be part of a magnifying glass.

Geometric accessories for the blind, foils for positive drawing, matte paper, models and real objects in question are in use. Recommended: Times New Roman 14–20 font, pointer, classic and electronic magnifiers; calculator, dictaphone, accessories and means for graphic works accessories for geometry, foils for positive drawing, electronic notebook. There are also a Screen Reader; printer for relief printing; keyboards. We emphasize the role of Braille<sup>1</sup>, which is a relief letter.

Braille writing boards (large and small Braille board, awl for writing, marking strips); typewriters for the blind; drawing accessories; printers for making relief content; text readers (reading pen, wireless reading pen, note reader); sound recording and reproducing apparatus (dictaphone, sound recorder and player, book reader).

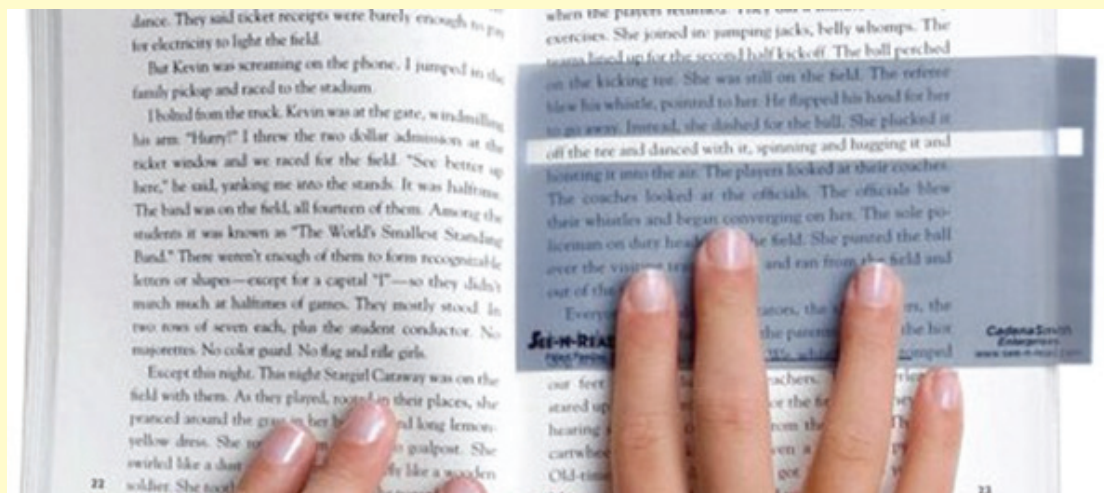


Figure 1: Examples of aids for the visually impaired listed in the order in which they are displayed: marker paper with highlighted lines, marker-pen, Braille machine, magnifying glass, pencil text reader, book reader - Daisy player, keyboard for the visually impaired, Braille printer, computer for the blind, Braille, tactile tape.



Marker-pen

<sup>1</sup> This simple solution was devised by the French blind professor Louise Braille, who lived in the period 1809-1852; after him the letter was named Braille.

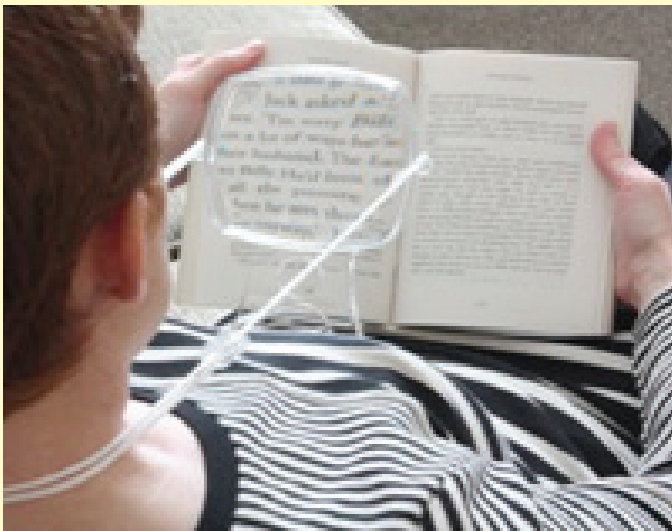




Marker paper with highlighted lines



Braille machine



Magnifying glass



Pencil text reader



Daisy player



keyboard for the visually impaired



Computer for the blind



Braille printer



Tactile tape



***The manner in which you behave and communicate with student with visual impairment*** – people with visual impairments have impaired visual communication. In order to compensate for the absence of the senses of sight, it is necessary to engage other senses (tactile, auditory, olfactory and kinesthetic perception). Verbal aspects are a good tool for explanations that we provide to a person with visual impairments. They should be short and clear, the answers not too complicated. Take care while addressing them that you are confident in yourself, without tension, discomfort, warm, encouraging, authentic. The answers must be unambiguous. If you have noticed a student with a visual impairment nearby, greet him. Do the same when entering or leaving a room with a visually impaired student. In this way, the student is informed who is in his immediate vicinity. Define rules for disposing of unnecessary items in the hallways and classrooms of the faculty in order to remove obstacles and enable unimpeded movement of a visually impaired student. Offer help with movement, if needed. When offering help, be direct, do not speak loudly and keep your eyes on the student. Ask if the person needs help, by name, report the action, say: “Here’s my left hand”. Touch the upper arm of the student with your hand, he will know how to grab your upper arm.



## RECOMMENDATIONS FOR ADJUSTING THE TEACHING AND LEARNING PROCESS:

- Arrange all adjustments with the student.
- Depending on the functionality of the rest of the sight, the student chooses a writing tool: black print or Braille.
- Some students prefer listening to written materials, i.e. “Auditory reading”.
- Allow the use of the dictaphone for learning purposes, for personal use only.
- Oral knowledge testing is used to evaluate learning outcomes.

- If a student with a visual impairment wants to be examined orally instead of a written exam, it would be good to explain and give information about the given test in advance: number of questions and number of points; type of question (fill in, discussion on a given topic, open type of questions); exam duration.
- Allow students with a partial loss of sight to write in capital letters.
- You can give feedback on the test, seminar, essay... orally and in writing.
- If the information is handwritten, use a felt-tip pen or a soft (B3) pen.
- Ask the student which font size and type suits him best. Feedback can be sent electronically, and the student can choose the font, font size, contrast, font color and more.
- If a specific tool, apparatus, something tangible is taught, ensure that the student tactilely experiences the subject and describes its key characteristics.
- Use *online platforms* for teaching and materials, learning applications, mastering skills, etc.
- In accordance with the stated request of the student for help from other persons, provide an assistant in acquiring certain contents and/or testing knowledge.

# Adjustment of teaching and learning process for students with physical disabilities

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## Characteristics of physical disability

Physical disability can occur as a result of damage to the locomotor system, central or peripheral nervous system, chronic diseases of other organ systems. It indicates altered bodily function from minimal to conditions that make functioning and independence impossible and difficult.

Concrete adjustments to the environment, teaching and accompanying study content will enable students with physical disabilities equal participation, personal and academic growth and development, a sense of full belonging and participation in the student community. The goal of accessibility and adaptation is to ensure the greatest possible independence in performing student activities and communication at the faculty.

The purchased equipment can serve a larger number of students over a longer period of time, for several generations. If the funds are the property of the student, the faculty should provide storage in accessible premises. In the context of studying, spatial accessibility and the possibility of using assistive technology refer to:

- a) spatial adaptations and aids in classrooms, cabinets, laboratories, reading rooms and libraries;
- b) spatial adaptations and aids that the student uses in the activities of everyday life (student accommodation, toilets, student restaurant ...) and
- c) spatial adaptations and aids in other spaces (administrative spaces of the faculty, space of the sports hall, common student spaces ...)

**Assistive technology** can help people with disabilities to live independently in their homes, but also to actively participate in the classroom, workplace and in their communities. These can be: writing utensils (plastic guides/writing frames, grips, covers, custom pens, pen holders, rulers with handles), means of access to computers (alternative or mouse simulators, cursor movement and targeting, double-click, drag, pointing devices, keys with a corresponding switch console, touch screens, touch panels, cursor control of head or eye movements, robust keyboards, various holders and holders, etc.); tables for wheelchair users; walkers; trolleys (manual or electric); barrier platforms, augmentative communication aids (speech generation devices, speech recognition devices), voice amplifiers, telephones, dictaphone, book holders, eye tracking device that facilitates access to the computer for people who cannot use their hands - mouse replacement, can control the computer using only the eyes.

Figure 2: Examples of aids for people with disabilities listed in order as exposed: Plastic guides/ writing frames, grips/covers/pen holders, iPad, Touch screen monitor, robust keyboard, computer mouses, PCEye Go



Plastic guides/ writing frames



Grips /covers /pen holders



Touch screen monitor



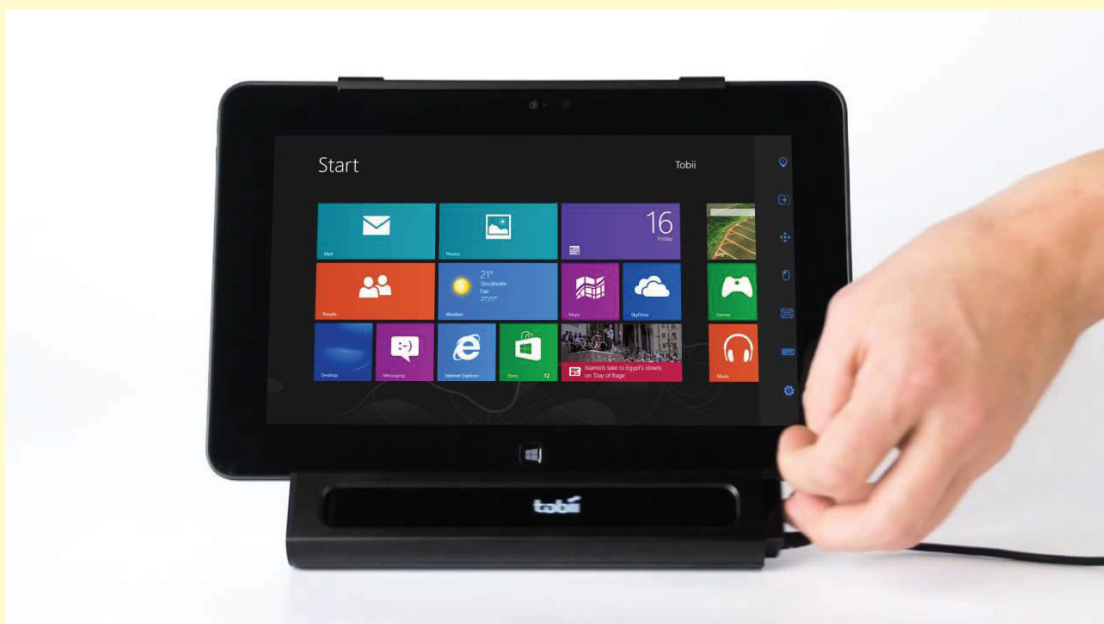
I pad



Robust keyboard



Computer mouses



PCEye Go



## RECCOMENDATIONS FOR ADJUSTING THE TEACHING AND LEARNING PROCESS:

- Provide an accessible classroom, without barriers.
- Use assistive technology in agreement with the student.
- If the student uses a wheelchair, provide a seat in the first bench, at the end of the row, along the aisle, so that he/she can get out when needed.
- Enable the use of dictaphones or printed lectures.
- At the beginning of the semester acquaint the student with the examination materials and literature.
- Exams should be adjusted to student's abilities - to extend the exam time, replace the written exam with an oral one or enable the use of computers, etc.
- Demonstrate understanding and tolerance in the event of anxiety, insecurity that can make it difficult to follow classes, concentration during learning and exams.
- Be careful when providing help not to overdo it because it can disrupt the need for independence.
- In accordance with the stated request of the student for help from other persons, provide an assistant in acquiring certain contents, conducting laboratory classes and/or testing knowledge. It is the best peer support because it has mutual influence - acceptance, attitudes and efficient functioning.
- Use *online platforms* for teaching and materials, learning applications, mastering skills, etc.

# Adjustment of teaching and learning process to students with hearing impairments

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## Characteristics of hearing impairments

Impairments in the development of hearing abilities are manifested as reduced or completely absent auditory sensitivity, which seriously interferes with the development and use of speech and language, as well as social communication. These people have a narrowing of the auditory field, difficulty or complete inability to make contact with sound, which causes difficulties in the formation of speech and interferes with verbal communication.

The impairment also manifests as more scarce vocabulary, agrammatic speech, problems in written expression, difficulty understanding written text, and acquiring knowledge. According to the degree of hearing impairment, we distinguish: deaf and partially deaf. Regardless of individual differences, common to all deaf and hard of hearing people is that to a greater or lesser extent they have a problem in communication, interaction, speed of mastering educational content.

Visual, written means are recommended when working with students with hearing impairments. Approaches for adapting the working material and the teaching process are: linguistic transformation of the working material, graphic display/images, objects, models, written form, images, graphofolia, multimedia material, computer. Suitable for the teaching process are word separators, made of transparent plastic with a drawn arrow that suggests the direction of writing and a small ruler. Then, graphic organizers that allow visual display of information. The reading guide is used by placing strips on a piece of text, sentence or word, the text becomes colored and framed. We point to sign language as a natural means of communication for people with hearing impairments, where terms/words are presented with conditionally agreed signs that are made by hand movements with adequate facial expressions.



**Assistive technology**, which is intended for people with hearing impairments (voice, speech and language), can be divided into three categories: 1) hearing aids (sound amplifiers) to enable the listener to hear certain sounds better; 2) warning devices (alarm devices) that can be connected to the house bell, telephone, etc. – these emit a loud sound or light signal and thus warn people with hearing impairment that a certain event has occurred; 3) devices for enhanced or alternative communication that help people with communication difficulties to express themselves.

There are a variety of means to transmit and amplify audio signals: The inductive loop is convenient because it sends a sound stimulus directly to the user’s hearing aid via a magnetic field, while blocking ambient noise and background noise that reduce clear sound.

FM system devices use a radio signal to transmit amplified sound. The slot or transparent part allows you to focus your gaze on the selected part of the text and makes it easier to read. Reading pens<sup>2</sup> work by dragging the tip of the pen over any printed text. This digital marker is connected to a computer and converts text to speech.

High use value have the Push Buttons<sup>3</sup> - small devices for recording a voice message for 10 seconds, communicators<sup>4</sup> for recording and playing messages by pressing a large color key.

The iPad<sup>5</sup> has recently become an easily accessible and favorite communicator.

Figure 3: Examples of aids for people with hearing impairments - inductive loop, FM



2 Scanner

3 Talking pocket

4 e.g. Bigmack, Littlemack, BIG Step by Step, Step by Step with Levels, iTalk, Talk Track, Go Talk, GoTalk Overlay Softver, Portable Clear Communication Device, Attainment Talkers AT6 i AT24, Quick Talker, Super Talker, etc.

5 iPad is a device from the family of tablets that runs the operating system.





***The manner in which you behave and communicate with student with hearing disability*** - *Get attention* before you start a conversation. Call the person by name and/or pat them gently on the shoulder. *Turn towards the person* - be in the same level of visual field, maintain eye contact. *Avoid ambient noise* - try to neutralize background sounds that interfere with listening with amplifiers. *Take advantage of the best lighting* - it helps with reading (lip reading). Avoid light coming from the back or shadows. *Speak clearly* at a normal pace, maintaining modulation and rhythm of speech. Don't shout - it can distort the message. Specify a topic and indicate any change in topic

*Check comprehension* - seek feedback to check comprehension of what is being said. Use facial expression and body language.



## RECCOMENDATIONS FOR ADJUSTING THE TEACHING AND LEARNING PROCESS:

- Arrange all adjustments with the student.
- As measures of primary technical adjustment are proposed: the use of a computer, the student sits in the first bench or in a central place (1-1.5 meters from the speaker) so that he can see the movements of the lecturer's lips.
- Eliminate background sounds (close windows, silence air conditioners and other appliances that can be an interfering factor).
- Attach squeak-relieving accessories to the chairs. The light source should be directed at the face of the interlocutor, so that the student can see the face, lips, hands.

- *Enable audio recording of classes*, so that a close hearing person can later repeat the presentation (using sign language, writing, etc.), clarify possible ambiguities.
- Use as many *visual aids* (graphics/images, objects, models) as possible that facilitate understanding.
- Use *keyword highlighting*.
- All instructions given *orally, give in writing*.
- *Prepare earlier lectures*, presentations or even the whole text.
- For reading, use the *usual speed and intensity of speech* during the lecture. *Take breaks during speech*. Speak slowly and clearly. When addressing verbally, it should be accompanied by appropriate facial expressions, without foreign words and double meanings.
- Present any information so that the person is looking directly at the speaker's face. Repeat keywords multiple times.
- Take several short breaks so the student can rest. The optimal concentration time for reading is 20 to 30 minutes.
- People who have residues in hearing abilities can be significantly helped in communication by a *hearing aid* that serves as an amplifier of sounds and voices from the environment, and makes listening easier for people with hearing impairments.
- *Sign language* - *Sign language* is the natural language of the deaf. These are conditionally agreed signs that are made with hand movements. Dactylology - finger alphabet, a form of writing words with the movements of the fingers of one hand in the air.
- Use *online platforms* for teaching and materials, learning applications, mastering skills, etc.

# Adjustment of teaching and learning process to students with autism spectrum

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## Characteristics of autism spectrum

People with autism have specific communication difficulties, primarily in understanding the “need to communicate”.

A person does not understand the fact that speech is used to convey messages to other people, expressed by gestures, mimicry, facial expressions... They have poor non-verbal communication and the ability to read non-verbal messages.

Added to this are difficulties in establishing interaction, difficulties in expressing one’s emotions, and interpreting those expressed by others. They understand words exclusively in the literal sense. They do not understand the meaning of jokes, hints, irony, sarcasm, metaphors, which challenges full socialization. Often they want to discuss only one topic about which they know a lot of scientific facts, using complex terminology and sounding a bit formal.

They often have a certain, very narrow sphere of interest in certain phenomena, events, things, a certain type of music, painting, drawing, most often electronic devices.

They want everything around them to function according to their appropriate, unchanging patterns. Any sudden change in routine or steady rhythm of life leads to pronounced anxiety in people with autism. In cases when they cannot follow their own routine or cannot control their emotions, they become irritable and react violently. They do not learn by imitation.

There may be sensitivity to sensory stimuli - e.g. light, sounds or certain textures. People with autism best acquire knowledge and skills through the visual sensory system.

**Assistive technology** Augmentative and alternative communication is a term used to describe the means used to improve inefficient speech communication.

There are many, various means to improve or “augment” (increase) the ability to communicate: images, symbols and printed words, which

can be printed on paper, whiteboard, computer or using special devices or means.

The use of means of augmentative communication, as part of assistive technology, should be considered in situations: When there is a significant gap between the student's understanding of language and his ability to expressive communication; When expressive language is underdeveloped, which significantly impairs functional communication skills; When speech is incomprehensible to those around him.

Some of the means of assistive technology used for augmentative communication are: Communication board - a board for focusing the gaze; Simple device with voice output (e.g. BIGmack, Cheap Talk, Voice-in-a-Box, MicroVoice); Apparatus with voice output and dynamic display (e.g. Dynavox); Activity calendars or weekly planners. Instead of written (textual) information, images or symbols are used to indicate an activity. Standardized symbols from BoardMaker or another non-standardized symbol program can be used. There are software for smartphones, such as "First Then", "Icom", "Grace" that have the function of a calendar/planner and that can be adapted to the needs of users. A touch screen monitor is a touch screen that allows the user to communicate by touching images or words on the screen. All common computer functions can be performed without a classic keyboard and mouse.

Figure 4: Examples of aids for people with autism spectrum disorders listed in order as follows: activity schedule, Go Talk Communicators, GoTalk Overlay Software, Communicators - Attainment Talkers, iPad as communicator, quiet corner.



Activity schedule



Go Talk Communicators



GoTalk Overlay Software



Communicators - Attainment Talkers



iPad as communicator



Quiet corner

**Ophođenje i komunikacija** – kako su ključne komunikacijske teškoće kod osobe s autizmom preporučljivo je da se koristite kratkim, konkretnim rečenicama. Budite iskreni, jasni, precizni, nedvosmisleni. Govorite bez metafora. Obavezno koristite ispravnu terminologiju jer su apstraktni pojmovi teški za mnoge, a posebno za one sa smetnjama iz spektra autizma. Posebno neka emocije budu prisutne praćene pojačanom facijalnom ekspresijom na vašem izrazu lica.

***The manner in which you behave and communicate with student with autism*** - In your communication to them is recommended to use short, concrete sentences. Be honest, clear, precise, undoubtedly. Speak without metaphors, use the correct terminology because abstract concepts are difficult for many, especially for those with autism spectrum disorders. We want to point up that your emotions has to be followed and reinforced by your facial expression.



## RECOMENDATIONS FOR ADJUSTING THE TEACHING AND LEARNING PROCESS FOR STUDENTS WITH AUTISM:

- Approaches based on organization, structure, routines, focus, functionality are applied.
- Structuring activities that must be pre-designed, well-organized, skills-oriented and functionally oriented.
- Through instructions ensure that the rules and organization are clear and indicate: what to do; how long a certain activity will last; when the activity ends; what follows after the activity.
- “Think in pictures” and thus learn and remember information that is displayed visually. Present the class with a visual layout, highlight it pictorially and with the help of symbols of what will be done, and visualize the duration of the class.
- If the student’s area of fascination is memorizing facts, use it as a technique or a means of acquiring knowledge and skills. It’s the same with other fascinations - use them, give them use value.
- Knowledge should have a “literal” meaning and a concrete (literal) application in life.
- Ask questions clearly, in short sentences, concretely.
- Focus teaching in the field of social sciences and natural sciences towards functional and experiential application - with a visual and



structured approach.

- Presentations and learning materials should not contain too much text. Use pictorial representations, diagrams, charts and mental maps instead of text.
- Significant help is provided by pictograms that convey their meaning through images, ie. a symbolic representation of the phenomenon.
- Determine a quiet corner to work, things should always be in the same place, provide only the material needed for specific tasks.
- Explain metaphors and words of double meaning.
- Provide the opportunity to use audio recording for learning purposes, so that a student with autism can learn independently or with support outside of class.
- The number of oral questions should be limited to avoid confusion in thinking.
- It is desirable to get acquainted with expectations and rules of conduct.
- Enable computer use.
- Provide the material before the lecture (e.g. via online pages, presentations, written materials).
- Each written assignment grade in accordance with personal characteristic and abilities of the student. Focus on the accuracy and clarity of the argument, and not on the way of expression - ignore spelling and grammatical errors, if that is not the essence of the task.
- Provide 50% extra time on exams and tests (including practical exercises). For exams that contain an essay as a means of checking, consider options for other types and ways of taking the exam.
- In cases where spelling is crucial, such as in a foreign language, it is necessary to extend the time (50%) to allow for checking and possible correction of spelling mistakes. Subsequent corrections should be considered.
- Special room: a room should be provided where attention will not be disturbed, which means that there can be an examiner and another person in it.
- In accordance with the expressed request or need for help from other persons in understanding complex contents, mastering certain contents, checking knowledge, help can be provided by one of the students or a person chosen by the vice dean for teaching.

# Adjustment of teaching and learning process to students with dyslexia

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## Characteristics of students with dyslexia

Dyslexia is a difference that makes it difficult to acquire and use reading, spelling and writing skills. It is of neurological origin. Within dyslexia, the characteristics of dysgraphia and dyscalculia are included and treated. This difficulty is manifested among students by problems in reading, writing, organization and mathematics. The strengths of a person with dyslexia are expressed visual ability, originality, creativity, intuitive problem solving, “artistic” way of thinking, a strong understanding of the global capacity - should be used to meet the academic requirements.

Also, present are problems of fluent and accurate reading. They read the text several times to understand it. Reading aloud is very difficult. In reading from the board or presentation they lose order, they read more slowly than others. They are especially tired of reading from a white and glossy background.

Students with dyslexia will often not show their real knowledge in written exams, even though they have shown an enviable level of knowledge in exercises, seminars...

Essay writing is the biggest challenge that can be overcome with proper teaching. Accurate writing, application of spelling rules, grammatically correct forms, use of punctuation and understanding the content of the text can be very difficult for students with dyslexia.

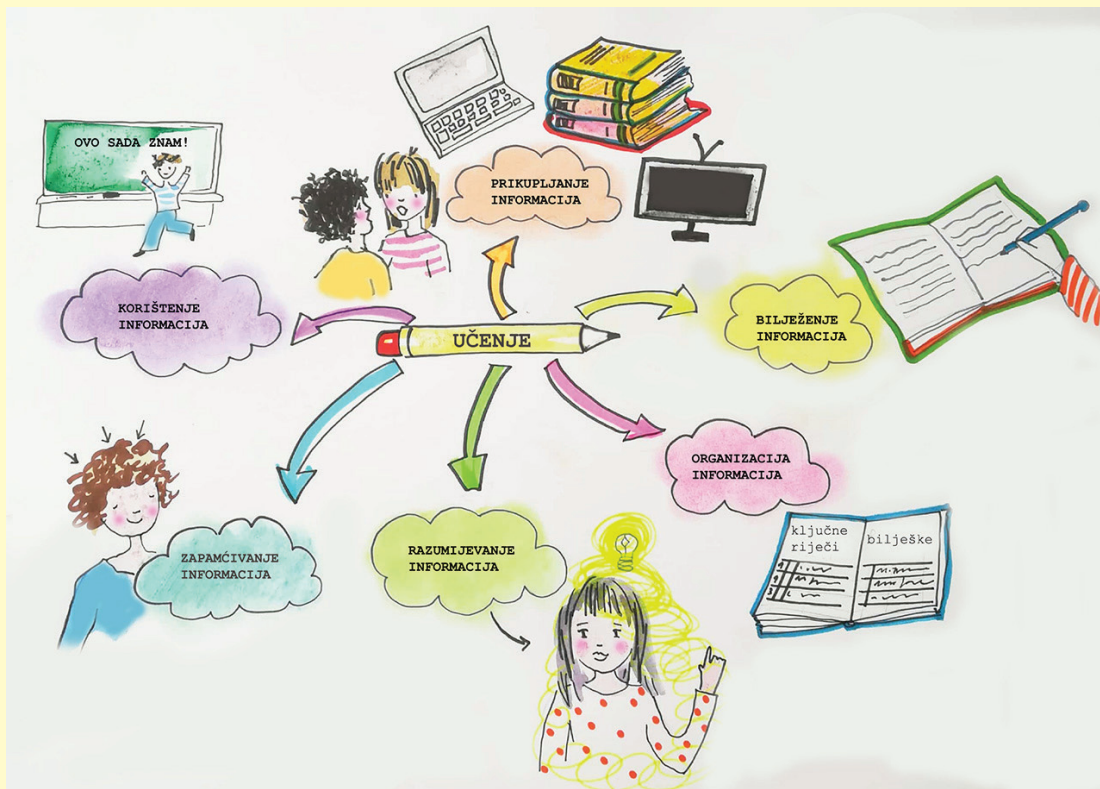
Performing complex tasks or performing multiple simple tasks at the same time can be demanding (e.g. some multi-part laboratory tasks in which the order of ingredients and activities is very important). Respecting deadlines, remembering dates, a large number of obligations (e.g. the date of submission of seminar papers, exercise results, exam day, exam registration...).

People with dyslexia may have difficulty performing simple mathematical operations although they can grasp complex concepts, solve tasks at a higher mental level without using paper and pencil. Sometimes they have problems transferring and transcribing numbers from the board into mathematical operations and ways of solving them.



They are more prone to a stronger experience of failure and stress.

**Assistive technology** for reading and reading aids: Standard texts, Predictable books, Changes in font size, spacing and text color, background color, Use of images/symbols with text, Voice electronic devices or software that „pronounce“ complicated words, Scanners for one word, Scanner with Optical Letter Recognition (OCR) and voice text software, E-books, a reading pen that can also be wireless, text marker strips. For writing and task orientation, the following can be used: paper with accentuated or raised relief lines, plastic guides/ frames for writing, word separator, graphic organizers, visual timer.



## RECCOMENDATIONS FOR ADJUSTING THE TEACHING AND LEARNING PROCESS:

- Enable the use of a dictaphone - audio recording of lectures for personal use only.
- Enable computer use.
- Provide material before the lecture (e.g. through websites, presentations, written materials).

- Presentations should not contain too much text. In order to be legible, they need a beige background and dark blue letters. The same goes for printed material.
- Use diagrams and mental maps (visual diagrams that select the most important information, connect it logically, understand it, remember it, use it fully and easily) with the text whenever possible.
- Allow longer deadlines for writing works - up to 25% compared to other students.
- The line spacing should be 1.5 or double, and the text should be separated into smaller subheadings.
- Use “simple” letters such as “Arial” or “Comic Sans”.
- Separately print and mark new, professional terms.
- Provide longer deadlines for submission of papers - up to 25% compared to other students.
- Assess each written paper in accordance with the characteristics and abilities of the student.
- Focus on the accuracy and clarity of the argument, and not on the way of expression - ignore spelling and grammatical errors, if that is not the essence of the task.
- Prefer oral testing or combine oral and written exams.
- Allow 50% extra time on exams and tests (including practical exercises).
- Avoid short and quick written examinations and such a way of assessment. Use orally instead of written examination. For exams that contain an essay as a means of checking, consider options for other types and ways of taking the exam.
- Avoid methods of giving multiple choice questions related to similar content.
- In demanding cases, apply assessment based on the assessment of presentations, exercises, oral presentations, activities during lectures.
- In subjects where spelling is crucial, e.g. foreign language, extend the time (50%) and allow for checking and correcting spelling mistakes. Respect corrections.
- In the written exam, the questions should be written in a simple and larger font (e.g. Arial, 14), and the questions should be separated by a larger space, with enough space to answer (these students usually have a clumsy handwriting).

- Special room: a room should be provided where attention will not be disturbed, which means that there can be an examiner and another person in it.
- In accordance with the request for help from other people in reading - it can be provided by one of the students or a person chosen by the vice dean for teaching: it is read without interpretations or explanations of the text. The help with writing is very simple: it is written exactly what the student dictates, without commenting on accuracy.
- Use *online platforms* for teaching and materials, learning applications, mastering skills, etc.

# Adjustment of teaching and learning process to students with Attention Deficit Hiperactivity Disorder (ADHD)

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## Characteristics of students with ADHD

Characteristics of ADHD are attention deficit hyperactivity disorder. In students, adults, these characteristics are different in relation to children. Difficulties arise in the areas of: Problems of concentration and focus on daily activities. They disconnect in the middle of a conversation, unaware of it. Wandering attention that disturbs them to send some activity to the end. Difficulty focusing while reading or listening to others. Difficulty completing tasks, even simple ones. They do not notice the details, which is why there is a high frequency of errors. The paradox of hyperfocus - in contrast to the problems with focusing on tasks that are not interesting to them, the expressed attention is focused on tasks that are stimulating and rewarding. Tendency to postpone and procrastinate. Difficulties with starting and finishing work (obligations, projects). Chronic delay, frequent forgetting of agreements, obligations and deadlines. Underestimating the time it takes to complete tasks. They often interrupt the speaker, have poor self-control, utter obscene and inappropriate thoughts without thinking. They have difficulty behaving in a socially acceptable way (sitting quietly during long lectures), have difficulty managing emotions, especially when it comes to anger or frustration, have feelings of failure, insecurity, mood swings, are irritable, overly sensitive to criticism, often low self-esteem.



## RECOMENDATIONS FOR ADJUSTING THE TEACHING AND LEARNING PROCESS:

- Before the lecture enable the teaching material (electronically sent by mail or in printed form).
- At the beginning of the lecture, briefly state the content and goal of the teaching unit.

- When creating power point presentations: little text, only important information, larger letters without decorations, line spacing 1.5 or double, with image and graphic display, no details.
- Highlight and abstract new terms, definitions, symbols (e.g. on a separate slide).
- Assign shorter and more frequent assignments (compared to other students).
- Maintain eye contact and make sure the student follows and understands.
- Important information should be repeated several times
- Whenever possible, give preference to an oral test or a combination of oral and written exam.
- In a written exam, questions should be written in a simple and larger font (e.g. Arial, 14), and questions should be separated by a larger space, with enough space to answer.
- Writing answers to a special paper or protocol should be avoided (due to attention deficit, the order may be confused and therefore the working time may be extended).
- The requirement to rewrite questions (e.g. mathematical tasks) should be avoided because due to attention deficit there can be an error in rewriting, loss of interest, attention.
- Extended time: the time and place of the test must be agreed in advance. It is usually enough to extend the time by 50%.
- Special room: a room should be provided where attention will not be disturbed, which means that there can be an examiner and another person in it.

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