

## DIGITAL TRANSITION FROM SECONDARY TO HIGHER EDUCATION FOR STUDENTS WITH DISABILITIES

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**Abstract:** Digital transition from secondary to higher education for students with disabilities would help students with disabilities cross historical, structural, psychological, behavioural and attitudinal barriers and provide equal opportunities for all students. The overview of the last decade attempts shows that the full inclusion of these students has not been achieved. For this reason, different aspects related to infrastructure, the teaching–learning process and institutional management have to be improved in order to facilitate the presence of these students in university classrooms.

Regarding environmental modifications, it is important to include technological resources and implement digital tools that would improve the accessibility of higher education institutions by providing tailored resources and support students with disabilities need to succeed academically and participate fully in the learning process.

**Key words:** digital tools, inclusive education, transition, barriers, higher education

### 1. INTRODUCTION

Students with disabilities in Serbia continue to struggle in their daily lives and academic endeavors due to a lack of resources and support structures that suit their needs. Educational exclusion and discrimination are still present in Serbian education system, constituting real barriers or obstacles to further progress. Even though inclusion was introduced into the education system of the Republic of Serbia in 2009, occasional failures and denials were encountered in the process of implementation into practice [1] The development of inclusive practice has been slow but continuous, passing through various phases. Recognizing and accepting the need for special social support gave birth to more than forty documents that provide support to these children. World Health Organization, UNESCO and the International Labour Organization supported the development of inclusive practices, by prescribing documents related to the inclusion of children with the need for special social support in the regular education system and education [2]. The prescribed documents were significant because to a certain extent they influenced the change of society's attitudes towards children with a need for special social support.

### 2. THEORETICAL FRAME

In the framework of the European Higher Education Area, a more inclusive character is being demanded as evidenced in different international declarations. Furthermore, Sustainable Development Goal (SDG) 4 on education of the European Agenda 2030 calls for ensuring an inclusive and quality education and promoting lifelong learning opportunities for all by 2030. It emphasizes the importance of inclusion and equity as the foundation for quality education and learning. Inclusive practice initiated the formation of an inclusive environment which would respect and appreciate the individual characteristics of each child. By responding to specific needs of each child, an inclusive environment will contribute to the child's growth and development, respecting innate potentials. Therefore, in addition to a family environment, educational institutions have to plan the strategy that would give equal rights to all, as well as an open access to the opportunity to gain, create and disseminate

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knowledge. The Law on Education in Serbia stipulates the right of every person to education [3] Even though the access to university for people with disabilities is a legally recognised right, there are still numerous gaps in its implementation. Students with disabilities recognise the value of universities for their social and educational inclusion, but at the same time they consider that their experiences are not always positive Therefore, it is not enough to guarantee access, but rather it is necessary to establish policies and plans to ensure that all students, including those with disabilities, remain and succeed in university studies.

The systematic review of four databases in 20 studies published between 2011 and 2021 indicates that students with disabilities face numerous challenges in accessing higher education. Therefore, it is necessary to give continuous support to students with disabilities, from preschool period to primary and secondary school, as well as at the level of higher education (depending on the affinity of individuals). In order to provide equal opportunities and success in higher education for students with disabilities it is necessary to be acquainted with the specific characteristics of this process if adequate strategies are to be proposed.

In order to address this issue and get the better comprehension of the experiences of students with disabilities it is necessary to take into account the current state of theory and research related to the higher education experiences of students with disabilities . Weidman’s conceptual model of undergraduate socialization [4] Perna’s model of college choice [5]; and Hurtado, Alvarez, Guillermo-Wann, Cuellar, and Arellano’s Multicontextual Model for Diverse Learning Environment [6] are suggested as three higher education conceptual models. The scientific literature shows that there is a wide range of definitions around access and participation of students with disabilities in higher education. Thus, according to the World Health Organisation barriers to inclusion are all those physical, social, and attitudinal factors that prevent or limit the full realisation of individuals. Within the studies referring to the school environment, Pivik, McComas and Laflamme identify three aspects to be addressed as facilitators: environmental modifications, changes in policies, and institutional resources[7]. Regarding environmental modifications, they consider it important to include technological resources and to adapt the infrastructure to the needs of the students, and about policies, they recommend educating the population and making curricular adaptations.

### 3. AFFIRMATIVE MEASURES

As far as the enrollment in the first year of study is concerned, College of Applied Studies – Sirmium applies affirmative measures for enrollment of persons with disabilities. By the government's decision for affirmative measures College is allowed to enroll three students with difficulties (wheelchair users, students with partial or complete visual impairment, with partial or complete hearing loss, who have learning or speech difficulties, with chronic diseases (hemophilia, epilepsy, diabetes type 1, malignant diseases) or psychological or mental difficulties. Students who enrolled the College had to submit relevant medical documentation issued by the competent health authority institution in the past six months. This documentation is stored in accordance with the personal data protection act. The candidate has to inform the College about the adjustments necessary to take the entrance exam no later than 20 days before the date set for taking the entrance exam. The College names a person who assists the candidate during the entrance exam, as well as in the preparation for the exam. Students who are enrolled on the basis of programme of affirmative measures are ranked in a special ranking list and retain the budgetary status if they obtain 36 ECTS, in accordance with the law on higher education. Students with disabilities are guaranteed a seat in the student parliament, independent of the election of other members of the parliament. Students with disability have the same status within parliament as other members of parliament, that is, they can equally participate in decision-making on all student issues, not only those concerning the rights of students with disabilities. College of Applied Studies - Sirmium considers it important to motivate students with disabilities to engage in decision making process and actively participate and contribute to the work of the parliament. This experience motivated the management to suggest adoption of regulations on the method of determining the status of students with disabilities, which is currently being formulated according to the similar document adopted by the Senate of Belgrade University at the Session held on

March 23rd, 2022 [8]. We consider adoption and implementation of internal documents regarding status and position of students with disabilities to be highly important in the process of inclusive environment creation and implementation of its principles.

#### 4. OVERCOMING BARRIERS

In order to ensure full intellectual, emotional, physical development of every student developmental needs and interests the College has taken the first steps to remove physical obstacles. Architectural or infrastructural barriers are the most common access barriers for students with disabilities. This may be since College facility is an old buildings, therefore, its spaces is not adapted to the needs of students, affecting their mobility. The elimination of the different architectural barriers, such as the absence of spaces reserved for people with disabilities, the absence of ramps, inadequate signage, or acoustic barriers in classrooms, would facilitate the movement and permanence of these students at college. Second barrier refers to teaching-learning process. Reasonable adjustments to the curriculum (flexible timing and methodological strategies) are necessary to help students participate in the teaching and learning processes on an equal footing with their peers. Barriers involving educational materials, access to information, and teacher training should be taken into account. Learning resources should be adjusted to students' needs (Braille and audio text, fewer items on each page, tape recorded responses, responses on the test booklet, frequent breaks, extended testing time, testing over several sessions, small group setting, preferential seating and the use of a sign language interpreter for spoken directions). Also teachers' attitude towards people with disabilities is essential to facilitate student learning. Therefore, teachers should apply diverse and participatory methodological strategies but in order to be able to work in inclusive context they have to gain not only professional but personal competences as essential values in order to be able to create open, inclusive and supportive learning environment. Educators have to be trained to develop the skills and competence to teach students with disabilities. They should implement flexible teaching methods, give support during exams, allow additional time to complete courses. Students with disabilities are those who have been diagnosed with a physical or mental impairment that prevents them from performing well in one or more important life activities. Every student with a disability experiences different learning difficulty and it is necessary to design a concept accessible for everyone in the educational system. Thus, education would be accessible to all students and adaptable learning settings that support the needs of all students while lowering obstacles to learning would be created.

Even though College of Applied Studies-Sirmium encourages its staff to participate in professional development programmes that would help them gain and strengthen these competences, the management of the institution has to take into account the aspects that are not related to the teaching-learning process or at the infrastructure level, too in order to build organizational policy. Assistance services for students with disabilities should be created in all university institutions, or at least, the possibility for all students who need it to have a person or scholar to help them with their integration into the university. A day-to-day basis to help students with disabilities study should be provided, too. It could include someone to interpret words into sign language, take notes for, write down student's words, for example, in an exam, help them overcome physical barriers. Nurturing inclusive education in a university is not an easy task. It requires many resources and a shift in perspective. Building an inclusive culture, networking with special education institutions and making campus disability friendly are among many concrete steps universities can take to demonstrate their commitment to helping more students with disabilities attend university

It is not only necessary to make changes in the academic aspect, but also deep cultural changes, development of clear educational policies, establishing economic funds, as well as protocols of good practices are needed to achieve inclusion.

Peer support is also one of the most important issues and it is of vital importance to acquaint students with the difficulties that their peers with disabilities face in order to develop empathy and be able to present themselves as supportive factor in creating inclusive learning environment. Students with disabilities are often part of the minority group in public society and their special needs are often neglected, as well as in the field of education. There are many studies that agree that negative attitudes towards the disabled still exist due to myths and bad stereotypes that make prejudiced

attitudes towards this group. This can be seen in the form of negative attitudes and behavior towards them whether in a social, educational or vocational context. The attitude of social rejection by the general public as well as the high social reach towards the disabled is one of the main causes of stress among the disabled. Therefore, the College should collaborate with disabilities organisations and charities and invite students with disabilities to spend a day as a college student. Thus, we would continuously promote diversity and inclusivity through awareness programmes, training and other activities that promote inclusivity as a basic norm. College can also promote its programmes by visiting special-need and inclusive schools.

## 5. DIGITAL TOOLS

International Erasmus + project Harvesting (Digital) Alternation In Ways That Knock-Down Inaccessibility Of New Generations (Hawking)<sup>5</sup> includes 8 HE Institutions in the region of the Western Balkan with the aim of improving conditions in higher education field for better transition of students with disabilities from secondary to higher education. College of Applied Studies – Srmium has had an important role within the project, firstly to share its experiences in the field of implementation of digital tools in higher education, since our Institution accredited Distance Learning Study Programme for Preschool Teachers in 2012 and secondly to prepare materials that would provide information on mechanisms for supporting inclusion as well as the implementation of digital tools in the process of transition. Our team paid special attention to the Strategy for the Development of Digital Skills in the Republic of Serbia for the period from 2020 to 2024 as well as the Strategy for Improving the Position of Persons with Disabilities in the Republic of Serbia for the period from 2020 to 2024, in order to identify crucial elements. Standards for web accessibility and The Web Content Accessibility Guidelines (WCAG) were also analyzed, as well as assistive technologies that can be used to enable students with disabilities to be included in regular educational activities. Advantages and disadvantages of assistive technologies (Speech Synthesis, Speech Recognition, Text Magnification, Braille Displays, Alternatives for Data Input, Screen Readers, Text Scanning Aid, Customized Mice and Keyboards) were analyzed and recommendations for adapting materials in digital forms were given in order to ensure accessibility for students with disabilities. Moodle LMS (Learning Management System) is Web Content Accessibility Guidelines (WCAG) 2.1 AA compliant, meaning that Moodle meets the respective accessibility criteria. Whether you are an educator, learner, developer, or system administrator, Moodle LMS evaluation tools are endorsed by WCAG as perceivable, understandable, and compatible. It was emphasized that both software developers and educators must strive for true inclusivity and LMS accessibility. It was pointed out that the educational content that instructors create must be designed with a broad range of abilities for users to perceive, understand, navigate, and interact with it. By providing accommodations like assistive technologies, adapted classrooms, or accessible course materials, institutions can allow all students to participate fully in education activities. The implementation of AI-Driven Virtual Tutors which analyze students' individual learning patterns, adapting the content and pace to suit their specific needs is also suggested as one of the means of creating inclusive learning environment and AI tools such as JAWS (Job Access with Speech), NVDA (NonVisual Desktop Access), Seeing AI (Microsoft), VoiceOver (Apple), Dragon Naturally Speaking, Google Voice Typing and Tobii Dynavox (Eye-tracking system) are considered to be helpful in fostering better academic and social outcomes. This diversity enriches the learning experience for everyone, encouraging creative problem-solving and innovative thinking, as students are exposed to a wider range of viewpoints and approaches to learning. Inclusive learning environments help prepare all students for the diversity they will encounter in the workplace and society. By learning in environments that value and support diversity, students develop empathy, collaboration skills, and a deeper understanding of the importance of inclusion in all aspects of life.

## 6. CONCLUSION

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<sup>5</sup> PROJECT 101128741-ERASMUS-EDU-2023-CBHE – HAWKING

Promoting the educational inclusion of students with disabilities in higher education is a challenge. However, in order to make further progress on this path, we need to know what the challenges are that make it impossible for them to access higher education. Students with difficulties are often part of the minority in public society and their needs are often not heard, as well as in the field of education. We have to be more acquainted with their social surroundings, mental state, and support network from their own perspective based on their experience. We must bear in mind that the support system is dynamic, and students with difficulties must be ready for any future developments. The majority of the support required is related to the special equipment, facilities, and infrastructure in order to ease their mobility. In order to develop assertiveness and the capacity to assimilate into society, students with difficulties also need to be subjected to training or courses that can improve mental resilience, emotional control, and social skills. To meet the students with difficulties expectations, present systems need to be improved in accordance to the effectiveness of technology and changes in the demographics. This is to ensure that the rights and needs of students with disabilities can be implemented.

The overview of the last decade attempts shows that the full inclusion of these students has not been achieved. For this reason, different aspects related to infrastructure, the teaching–learning process and institutional management are necessary to facilitate the presence of these students in university classrooms. Only by improving the accessibility of higher education institutions, training university teaching staff, and raising the awareness of the educational community for inclusive education in higher education will it be possible to promote the success of students with disabilities in university education.

Higher education institutions should promote inclusion and plan their organizational policies in a manner that helps them cross historical, structural, psychological, behavioural and attitudinal barriers, as well as numerous prejudices in this field that could prevent them from being fully committed to achieving this goal. Identifying and acknowledging these barriers provides an opportunity to create a more inclusive space and create and disseminate knowledge. Therefore, the role of each higher education institution is to acknowledge that dialogue and openness to including different experiences and situations in the academic work are crucial to eliminating these barriers, as well as to advancing excellence in higher education. Their aim should be to create an open and accessible environment where the fullest range of knowledge and perspectives is included. In order to achieve this aim, it is necessary to reexamine the process of knowledge creation, as well as its transmission. It has to include changes of the structures and procedures that were established when there was less diversity.

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