OVERVIEW OF PROBLEMS THAT STUDENTS WITH DISABILITIES ENCOUNTER IN THEIR HIGHER EDUCATION

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Abstract- Students with different types of disabilities experience a number of problems in their higher education. This fact results in some of potential disabled students not enrolling in higher education institutions or not finishing their studies. In this paper an overview of disabilities, problems and barriers that students with different disabilities encounter in their higher education is given. Models of disability and methods for aiding students with disabilities are also stated and elaborated.

Keywords- Overview, Students with disabilities, Problems, Higher education.

I. INTRODUCTION

Students with different types of disabilities experience different obstacles and problems in their everyday life. Similar problems that can be found in their business activities can be found in their higher education. Despite their disabilities these students should have as equal education and business opportunities as possible. The wish of students with disabilities to enroll and finish their higher education exists and is something that should be taken into consideration and that deserves more attention. A number of problems that affect students with disabilities in a number of cases results in prolonged studies or in students not finishing their studies. This consequently results in discouraging of potential students with disabilities which leads to lower enrolment rate of these students. If enrolment rates of students with disabilities and students without disabilities are compared then it can be shown that students with disabilities are 40% as likely to enter higher education as students without disabilities [13].

Despite the fact that a number of researches show that the support for students with disabilities exists as a part of higher institutions' practice, there are still many problems that exist and can be linked to the potential lack of knowledge about how to exactly help these students. Many different types of disabilities can affect students and each of these disabilities requires appropriate support.

The overview of disabilities that are commonly found in the focus of a number of universities are given in the later section of this paper. It is important to note that there are disabilities that are not visually obvious and that a number of disabilities can affect students later in the course of their studies (anxiety or depression are some of possible examples). In order to properly deal with this kind of disabilities the teachers are required to possess a suitable knowledge and skills. Laws that protect individuals against discrimination on the basis of disabilities have been included into overall legislation along with the directives such as a common legal European framework on non-discrimination with the Treaty of Amsterdam from 1997, Article 13 [4].

Based on this, a number of laws that promote equal opportunities on national levels have been established and European Union has put an emphasis on creating jobs for people with various disabilities in several strategic documents [2; 14]. The United Nations Convention on the Rights of Persons with Disabilities (Article 24) has also emphasized the principles of non-discrimination and equal opportunities in education at all levels [4]. Nevertheless, statistical data still points out to the difference between employment rates of people with and without disabilities. In the European Union there are 47% of people with disabilities who are employed compared to 72% of employed people who have no disabilities [6].

II. TECHNOLOGY BEING USED TO HELP STUDENTS WITH DISABILITIES

Using different technology in higher education has been gaining its momentum and has been increasing since the 1990s. To include some technological solution in the higher educational process requires in many cases an appropriate financial budget but also appropriate skills needed to effectively use the newly adopted technology. The very question about effective usage of technology has been pointed out by many authors who point out that, although there has been an increase in adoption of various technological solutions in higher education, there is a question about how effective is the usage of this technology regarding making students' learning experience better [7; 8].

Students with different types of disabilities need special methods of teaching which can in some cases

also help the students without disabilities to better understand some particular topics. The main problem that can be point out when talking about usage of different technological solutions is the very application of this technology.

Many authors state that technology is in many cases used to simply support or supplement existing teaching methods [3; 5; 11]. This results in new technology not brining as huge difference to the way of teaching that it potentially could, instead it just reinforces and supports the existing teaching methods and patterns. This kind of approach in the end does not support students with disabilities in a suitable way since these students require new aiding technology to be included as a part of new and more suitable teaching methods that would suit their needs.

When considering different usage of technology in the higher education, it can be stated that there are several different ways in which technology can be used: to copy existing teaching processes into a virtual environment (in this case all teaching methods and practices remain the same, they just become digital and virtual), to support or supplement existing teaching processes (in this case technology is used to add some value or segments to the existing teaching methods and practices) and finally technology in some cases can be used to actually change previously formed and well-known teaching methods and patterns and to create a new teaching platform that will be suitable for particular group of students or for all students in general. The last mentioned application of technology is the very approach that is best suited for supporting students with disabilities.

Some of the used aiding means can be used to improve the teaching results (in quantitative or qualitative aspect) and some can be used to motivate the students.

III. DIFFERENT TYPES OF DISABILITIES AND BARRIERS TO A MORE ACCESSIBLE EDUCATION

It is important to note that students can be affected with disabilities in many different ways and that even the students with the same type of disability can be affected differently and consequently they will need different teaching methods to make their learning experience more suitable for them. World Health Organization defines three dimensions that comprise disability [15]:

1. Impairment in a person's body structure or function, or mental functioning; examples of impairments include loss of a limb, loss of vision or memory loss.
2. Activity limitation, such as difficulty seeing, hearing, walking, or problem solving.

3. Participation restrictions in normal daily activities, such as working, engaging in social and recreational activities, and obtaining health care and preventive services.

There are many different types of disabilities that can affect students and their learning experience. Disability can affect a student/person in many different aspects [16]:

- Chronic Medical Conditions
- Intellectual Disabilities
- Learning Disabilities
- Mental Health Conditions
- Neurological Conditions
- Physical Disabilities
- Sensory Disabilities

There are also other categorizations of disabilities such as [17]:

- Physical Disabilities
- Intellectual or Learning Disabilities
- Psychiatric Disabilities
- Visual Impairments
- Hearing Impairments
- Neurological Disabilities

Another categorization gives the following categories [18]:

- Physical or Mobility Impairment
- Visual Impairment
- Hearing Impairment
- Learning Difficulties
- Mental Health Difficulties
- Medical Conditions

Along with previously mentioned categorization examples related to education from, respectively, Australia, Canada and United Kingdom, the following categorization from United States gives the following categories: [19]:

- Attention Deficit / Hyperactivity Disorder (AD/HD)
- Autism Spectrum Disorder (ASD)
- Deaf and Hard of Hearing
- Learning Disorders
- Mobility & Upper Extremity Impairments
- Neurological Disorders
- Physical Health Disorders
- Psychological Disorders
- Vision Impairments

American CDC organization classifies disabilities in the following categories [20]:

- Vision
- Movement
- Thinking
- Remembering

- Learning
- Communicating
- Hearing
- Mental Health
- Social Relationships

Independent news source Disabled World provides the categorization of disabilities that comprises of the following categories [21]:

- Mobility and Physical Impairments
- Spinal Cord Disability

- Head Injuries - Brain Disability
- Vision Disability
- Hearing Disability
- Cognitive or Learning Disabilities
- Psychological Disorders
- Invisible Disabilities

It can be seen that there are some differences in categorization of disabilities among various institutions. Fig. 1 shows a graphical representation of mentioned categorizations.
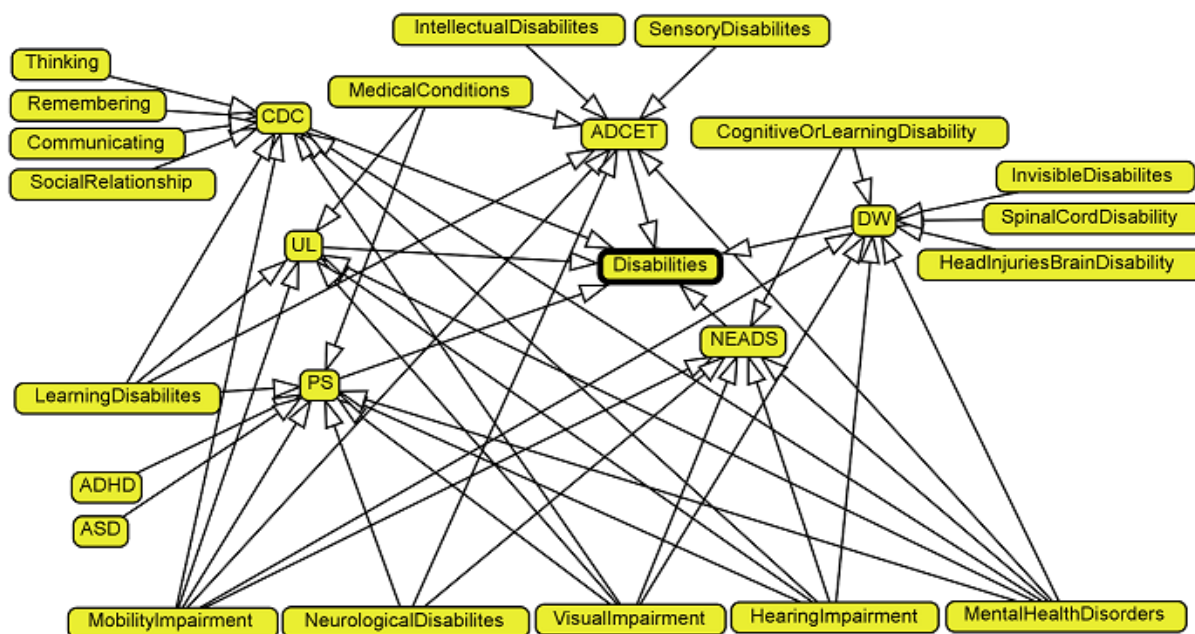

Fig. 1. Graphical representation of disabilities categorization

All disability names that, according to their description, refer to the same type of disability (and only those) are given a common name. For example, all categorizations have mental health issues under various names: Mental Health Conditions / Psychiatric Disabilities / Mental Health Difficulties / Psychological Disorders / Mental Health / Psychological Disorders. Common name that is used in Fig. 1 for this disability type is "Mental Health Disorders". Some disability types are mentioned only in one categorization, for example Social Relationships. Also, some disabilities are grouped under one name in one categorization (Sensory Disabilities), but divided in several types in other (Vision Disability, Hearing Disability). The purpose of given graphical representation is to show similarities and differences of institutions' approaches in addressing the disability issues.

When considering more accessible education for students with disabilities many different barriers can be identified [22; 23]:

- Inadequate funding
- Physical inaccessibility
- Accommodation process

- Lack of individualization
- Ineffective dispute resolution mechanisms
- Negative attitudes and stereotypes
- Lack of available options
- Lack of information to families or prospective students about options
- Inconsistency (lack of equivalence) between various education providers and sectors
- Insufficient equipment, technological aiding means and other devices
- Disability unrecognized or undiagnosed
- Lack of proper training and support from teachers
- To large class sizes (class sizes need to be reduced where classes are inclusive)

Addressing all mentioned issues is important for creating a well-suited educational environment for students with disabilities.

Although there have been efforts to stress that students with disabilities should not be discriminated [10] and that they should be included into general curriculum, some authors suggest that there should be

a special set of standards for students with more substantial disabilities [1].

IV. MODELS OF DISABILITY AND DIFFERENT MEANS FOR SUPPORTING STUDENTS WITH DISABILITIES

When talking about the dealing with different obstacles and problems of students with disabilities several various models can be identified. Two of these models that are most commonly mentioned and used are [12; 24]:

- Medical model
- Social model

Medical model deals with the disability as problems that need to be solved by the usage of an appropriate aiding means in order to enable person with disability to access all resources available to the general public. For example, medical model would suggest that visually impaired students need an appropriate audio based controlling device as an appropriate aiding technology in order to operate the radio.

Opposite to the medical model, the social model focuses more on different barriers to the greater inclusion of people with disabilities that can be found in everyday life and different systems. For example, social model would suggest that radio devices should have built-in audio interface in order to enable visually impaired people to use them.

A number of higher education institutions have addressed the barriers and difficulties encountered by students with disabilities and have established special offices for educational equity, usually under the name Student Disability Services or Student Disability Resources. Staff of these offices is usually well-trained and well-informed about different types of disabilities as well as about the aiding technology and tools that can help student with disabilities in their education [9; 25; 26].

Nevertheless, there are a number of higher education institutions that still have not recognized the importance of problems that students with disabilities face and that have not established sufficient means of support for students with disabilities. In order to make higher education institutions more aware of problems that affect students with disabilities more education about accessibility and disability resources needs to be conducted among the staff of various higher education institutions.

When considering different aiding means for supporting students with disabilities in higher education it can be stated that visually impaired students require the most complex support regarding their learning materials since these materials have to be transformed into a suitable form that enables

visually impaired to read these materials and learn. In most cases some sort of Braille form or audio form is used. The transformation of different learning materials in a form that suits visually impaired can be very time-consuming and it also requires a special set of skills and knowledge about how to transform these materials. This is something that teachers and other staff members that support the teaching process at higher education institutions have to adopt.

The process of transforming materials requires that many details are properly taken into consideration and things are never as simple as they seem. For example, the fact is that most of visually impaired students actually do not read Braille. Another aspect that needs to be taken into consideration and that in many cases is not implemented properly is the reading order of text paragraphs and other text elements in all audio-based documents that are prepared for visually impaired students.

Many specific problems occur in the case of teaching visually impaired students about programming. In this case visually impaired students have to memorize the context and an entire code structure of every particular program they are trying to develop. These challenges ask for a specific and sophisticated aiding technology. Students with hearing impairment require titled video materials while students with learning disabilities require different parts of the text to be marked differently in order to be able to track and follow the text.

In order to create usable and accessible learning materials for students with different types of disabilities many details have to be considered. The knowledge and skill about how to create these materials should be made available to key staff of all higher institutions that are responsible for supporting as well as conducting the teaching process.

CONCLUSIONS

Students with various types of disabilities face many different problems when trying to enroll and finish their higher education studies. This kind of situation consequently results in a decreased number of students with disabilities enrolling higher education studies. Each type of disability requires a specific set of knowledge, skills and methods from higher education staff in order to overcome barriers that students with different types of disabilities encounter.

Despite the fact that the problems of students with disabilities have been recognized and that some higher institutions have established a special offices to deal with barriers and obstacles that students with disabilities encounter, there is still a number of higher institutions that have not yet established adequate support for these students. There is a need to make

aiding technology and knowledge about how to use it in a proper way more available to student and teachers at all higher institutions.

In this paper an overview of problems and obstacles that students with disabilities face has been presented and elaborated. The current state regarding support to students with disabilities in higher education institutions has also been stated and discussed. Different categorizations of disabilities have also been given and complexity of aiding solutions and technology has been presented and elaborated. Creating a detailed model of problems and obstacles that students with disabilities encounter, along with the potential solutions that are or should be available will be a part of future research.

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