BOOK OF CASE STUDIES:

SERVICE LEARNING SUCCESS STORIES IN MACEDONIA AND CROATIA

Editors:

Ana M. Lazarevska
Ivana Bilić
Aida Koçi

Skopje, 2012

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To all the exquisite persons
who entered our lives
touched our hearts
acted as the backbone of our deeds.

You are the moral nexus
where we continuously draw
our ideas and energy from.

CHIEF EDITOR'S PREFACE

I remember that late afternoon in February 2011, when Dr. Aida Koçi and I sat in one café to discuss the main points of our potential project application for the Alumni Engagement Innovation Fund competition 2011. That was the first time the competition had been opened and we had no one to consult for previous experiences concerning the application process. Moreover, it was to be only my second project application, following the first successful story in my track record – organizing the Regional JFDP Alumni Conference "Enhancing Accessibility of the Higher Education to the Disabled", November 22–24, 2010 in Skopje/ Ohrid, Macedonia, funded by the Junior Faculty Development Program (JFDP) Alumni Grant.

Simply said, we were overwhelmed. On one side, we were very well aware of the importance of the topic we were to apply with (initiation of utilizing the service-learning methodology in higher education institutions in Macedonia and Croatia), and on other, we had to be appreciative of the immense significance of the targeted community with our project proposal (the persons with disabilities, whose rights for equal access to education and life represent a continuous struggle in our societies). However, I believe that precisely this synergy was crucial for compiling the final version of our project proposal titled "Ensuring Equal Access through Service Learning for Persons with Disabilities"[†]. We, the project proponents, both emanating from the higher education institutions and being granted the honors to carry the title State and/or JFDP Alumni, were expected to identify and distinguish such societal issues that need immediate, fervent and enthusiastic approach in order to at least facilitate if not to enable a decent life with equal opportunities for our fellow citizens – the persons with disabilities. What is special about our project is that we tend to consider our endeavors far beyond the everyday understanding of the syntagma '*equal access and equal rights for the persons with disabilities*', because, in parallel and de facto, it is a fight for our rights and for ourselves – all of us in a certain period of our lives were, are, or shall become persons with certain kinds of individual needs which the persons with disabilities are facing on a daily basis.

I drew the energy and strive for writing our project proposal from the experiences I gained during my previous study visits in the USA, Germany, Japan and some other European countries. While working and temporarily living in these states, I started to be fully aware and observant of the persons with various types of disabilities – on the street, in institutions of all levels of education, in the theater, opera, movies, markets, parks, sports events – and moreover, I began seeing how they experience the joys of everyday life. It would be my dream come true to have such conditions for our fellow citizens in our countries. Therefore, I consider this project as just another pave in the yellow-brick-road towards the wisdom and the magic which will help us discover the deepest and the most secluded parts of our hearts and minds needed to fully embrace the persons with disabilities.

This publication is only ***one of the outcomes*** our AEIF project has produced in its attempt to initiate and ensure equal access to education for certain groups of users/ consumers/ customers, be it, in this case, the persons with disabilities. It represents a compilation of the students' assignments under the mentorship of their professors and lecturers that were conducted during the two semesters (winter and summer semesters 2011/2012) as part of the Project Activity: Conducting Service Learning Case Studies of our AEIF Project. Among them are students' works from *undergraduate* and *postgraduate* level. Covered is a vast variety of fields, from engineering, information sciences, social sciences, economy, arts, languages, teachers' education etc. The merging topic of all herein presented students' works is that through the implementation of the Service Learning methodology, each work was to somehow be related to the notion, needs and rights of the persons with disabilities. With this variety of fields, we have proven that the issue of securing equal access and

[†] http://www.equalaccess4pwds.org/

equal rights for the persons with disabilities is not a problem that affects only one societal section, but on the contrary it is an issue that has to and, of course, can and should be solved both on all horizontal and vertical levels of our society.

The **main goal** of this publication is to show the innovative approaches of our students, their ideas, concepts, urges, that could be utilized as a solid basis for other students, faculty and staff – primarily but not exclusively – in the institutions of higher education, to obtain more insight in the ways, means of utilization of the service learning in order to start considering the needs of the persons with disabilities each in their fields of work. Moreover, its **purpose** is to initiate faculty not only to expand on their imagination to seek new ways and methods of teaching, but to as well, instigate and utilize diverse extra–curricular activities which enable incorporating persons with disabilities, primarily in the campus, but on a longer run, facilitating horizontal inclusion of the persons with disabilities in all fields of the every-day societal life. This **approach** is the only way for us to contribute towards strengthening the awareness that we should all join our efforts to fight for common needs and a better and more meaningful life, as well as extend over to guaranteeing, securing, maintaining, promoting and fighting for equal rights of the persons with disabilities, in general.

First, on behalf of the entire project team, I would like to express appreciation to the **State Alumni Office**, the **AEIF Management** and the **AEIF Review Board** for their decision to select our proposal among 683 projects worldwide in the first round, among the 137 short-listed – where we ended up 3rd after the worldwide transparent voting – and among the 38 projects that finally obtained funding. I also believe that our success would not have been possible without the continuous support from the team working in the **Public Affairs Office at the US Embassy in Macedonia**. My deepest gratitude goes to **Mr. John Surface**, the former Attaché for Cultural and Educational Affairs in the US Embassy in Macedonia, who recognized the importance of our idea, believed in us, and thus, provided moral and logistical support of his team throughout the application process. He paved the way of a fruitful work of his successor **Mr. Brian P. Bauer** whom we owe the moral and logistical support throughout the implementation phase of the project.

Further, I take this opportunity to thank the **complete team of students**, **teaching assistants**, **lecturers**, **professors** for their prompt readiness to accept this challenge and agreed to take part in compiling this Book of Case Studies. Their contribution – each in their own field of work – gives a significant weight towards completing our goal. On the other side, following and assisting them in their work stood the selected group of our friends and collaborators with disabilities who entered our lives, and touched our hearts. They act as the backbone of this and every future project in this area and represent the moral nexus where we continuously draw our ideas and energy from.

Last but not least, I would like to thank the ***complete Project team*** **consisted of people who are full of enthusiasm and prepared to follow the working pace dictated by the timeline of this project**. Together, with all the other persons with disabilities who entered our lives, and touched our hearts, they act as the backbone of this and every future project in this area and represent the moral nexus where we continuously draw our ideas and energy from. I was really blessed with such a team. With our work, I can only hope that we have justified the expectations we set for and from ourselves.

Editor-in-Chief and Project Leader

Skopje,
September 2012

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Contents

Sign Language Tutor

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University "Sts Cyril and Methodius", Faculty of computer science and engineering

Abstract:

This case study presents an application that is an interactive e-learning platform for tutoring everybody interested in learning the Macedonian Sign Language (MSL). It represents a collection of modules and games dedicated to ease the learning of the Macedonian Sign Language (MSL), but also to improve the mental and memory capabilities. The central part of this project is 3D simulation of a model that signs a chosen letter or object. Computer games to assist with the learning are used: one is a 2D adventure where the hero fights monsters and collects items as rewards – sign of the collected object, the other is memory where the subject should connect a card with a sign of the letter.

Keywords: deaf, hard of hearing, sign language, tutorial, human-computer interaction

1. INTRODUCTION

Service-learning as an educational strategy that involves students in meaningful service to their schools and/or to society, engages them in some form of study related to the service. Well designed service-learning projects connect with, reinforce, enrich, and enhance what students learn during the courses by providing them with opportunities to apply the content of curricula and skills to address real-world problems. Service-learning projects give students opportunities to make their learning practical as they apply what they are learning to real-world issues.

Information Communication Technology (ICT) is an important part of the service learning platform. One of the possible approaches is developing software applications that serve different target groups of citizens and simplify their work or even everyday life. ICT can be used in providing a great help for persons with some kind of disability. There is a plethora of possibilities to develop different interfaces that will help the challenged people to communicate with the environment more easily.

In the curricula of the Faculty of Computer Science and Engineering (FCSE) there are several courses that teach students how to develop this kind of applications. One of them is the course Human-computer interaction (HCI). In this course the students learn how to use the state-of-the-art technologies and create different kind of useful software products. It introduces the students to the basics of the complex interaction between the computer and the user. The students grasp the principles for building interfaces that compound the interests of the humans and the possibilities of the technology. During this course, the students understand that the humans are the main component of the computer systems and they learn how to develop the software and the hardware for utilizing different groups of users.

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The case study that is presented here is a result of a research done as a part of this course. Afterwards, this project was enriched and became a diploma work of the author of the presented application.

The group that was working on this project was highly motivated to develop the Sign tutor application. The investigation showed that the community of deaf and hard of hearing people (DaHHp) is a closed one in Macedonia and that there isn't much help in electronic form to ease the learning of the Sign language. Also, this kind of application will help these persons to learn the language in a fun way, through visual and game playing modules. Also, the broader community that is involved in some way with children or adults with hearing problems is interested to learn the MSL in order to communicate easily – parents, teachers, academic personnel, friends, relatives. It is never too late to learn the Sign language and this application will help in achieving this goal.

This service learning application has provided a great benefit to everybody that took part in the developing process. All of us have learned more about the community of DaHHp, about their everyday struggle and their healthy perception of the environment around them. The psychologist recommendation is that everybody should accommodate themselves according the environment, and this has a special meaning for challenged persons.

2. METHODOLOGY

The methodology that is used during the course HCI has lead to the development of the final software application. The students are taught about the place of the humans in the Human-computer interaction, the technologies of the HCI, development of efficient interfaces, the process of evaluation of interfaces, design of interfaces for persons with special needs, incorporation of technologies in interfaces.

There was an idea of developing a software application that would serve as a tutor for learning the Sign language. The development of software that supports learning the Sign language is very important. It becomes a service to the population that needs this kind of education.

During the process of the investigation about the project, we have learned that the community of deaf and hard of hearing people (DaHHp) is not a small one. In a large study conducted by Conrad (1979) it has been discovered that deaf and hard of hearing children attending schools using an oral approach rarely acquire sufficient lip-reading skills. The children with hearing loss greater than 85 dB could only comprehend about 25% to 28% of the words through lip-reading that they could comprehend through reading. The children with hearing loss less than 65 dB could only comprehend about 36% of the words through lip-reading that they could comprehend through reading. Also the studies have shown that many deaf and hard of hearing individuals have difficulty reading (Conrad, 1979; Gallaudet, 2003). This is explained by the fact that the words and the writings are based on the spoken language, something that the deaf are not truly acquainted with (Sears and Jacko, 2008).

On the other hand, the interactive computer systems enable vast amount of possibilities. The software becomes a service in different aspects of our lives and the digital technology can reduce the gap between physically and mentally challenged people and for this project, it can help deaf and hard of hearing people to communicate with each other and their surrounding. When developing a software of this kind, it is important to consider the following general recommendations: to provide visual form of all auditory information, to ensure that all visual cues are noticeable, to offer an operation mode for noisy environments or if sound is turned off; to Support ShowSounds feature if it exists in the operating system.

The next steps were learning about the sign language, designing the system, incorporating the right technologies, developing the application and testing it.

3. ELABORATION OF THE PROBLEM

The Sign language uses not only the hands, but also the head, lips or the torso. This is not universal language and the languages differ from country to country. Also sign languages are not based on the spoken language of the region.

The Macedonian sign language is based on gestures and body gestures, as all the other sign languages. The hands are the basic communication means. The signs are performed with predefined movement and location using one or both hands. Not every hand movement has a meaning. There are additional elements that enable more efficient and understandable communication like head movement, facial expression, mouth or body movement.

The Macedonian sign alphabet consists of 31 signs, the same with the number of letters in the Macedonian alphabet. There are two versions of the alphabet: one version is signed using only one hand, and the other is using both hands.

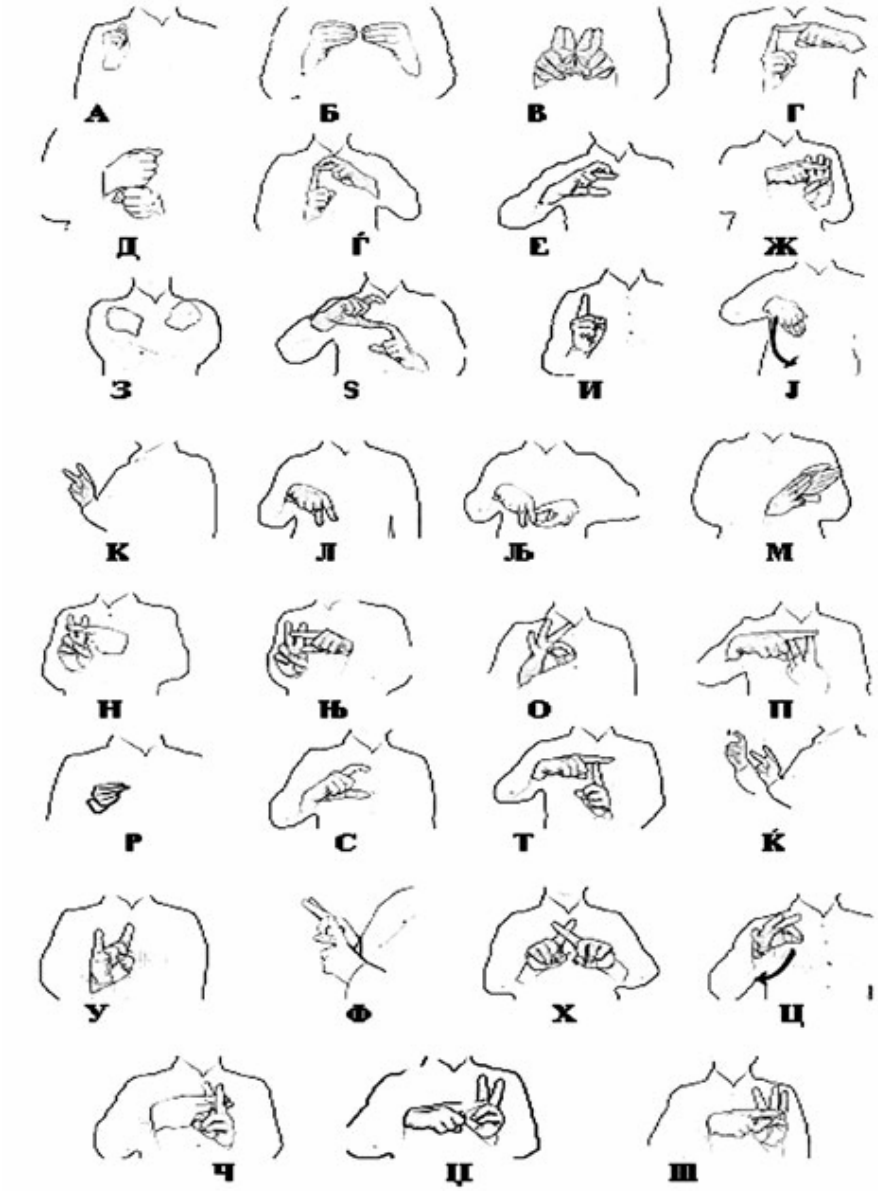

Figure 3.1. The Macedonian sign language alphabet signed with two hands

4. RESULTS AND DISCUSSION

The result of the used methodology is the interactive application named Sign Language Tutor. Its technical details are given below.

The most important part of this application is the incorporation of the visual technology. From the work of the previous researches we can conclude that the products with visual interfaces are the most recommendable for communication with the SL. A lot of researches are exploiting this technology in different ways.

In the implementation of this solution for this project, few specific platforms and technologies are used. The main one is the Microsoft platform in order to build the video games XNA. It is represented by set of dynamic libraries that can be included in the development environment Visual Studio 2010, and the C# is used in the programming part. The XNA framework enables the design of 2D and 3D games. The main basic components, types and objects that are used in the process of building the games (the same for 2D and 3D games) are: points, vectors, matrices, transformations, camera view, effects, texture, index buffer, components of the game.

The whole visual part is created using the tools: AutoDesk Maya 2012 и Adobe Photoshop CS4. Maya is used for creating 3D visual objects and suitable animations, while the Photoshop is used for creating the textures, pictures and backgrounds that are incorporated into the application.

Figure 4.1. 3D animation of the girl signing

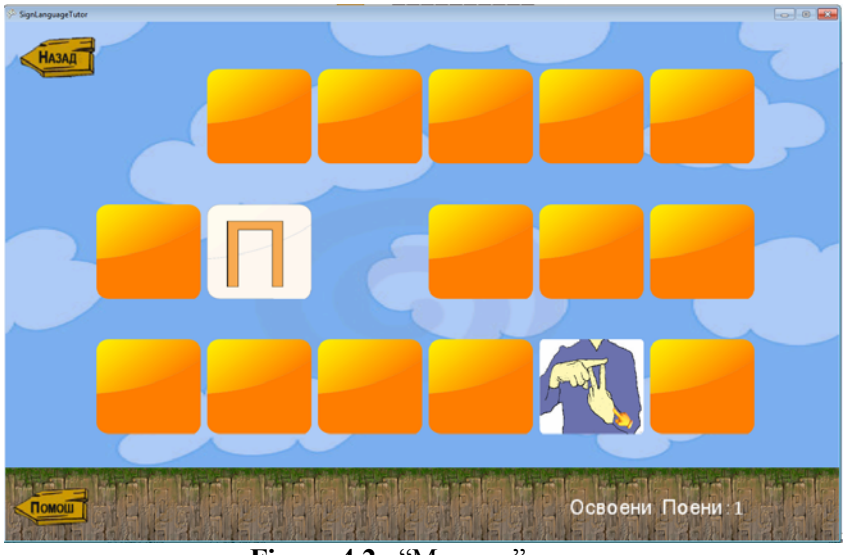

Figure 4.2. "Memory" game

The application consists of several modules:

- 3D simulation – this module provides signing alphabet letters and words. The user chooses the letter or the object and the 3D animation illustrates the chosen sign. The user can rotate the animation in all directions and enables different views to better capture the signing. This is of outmost importance, since the signs and words are actually expressed in 3D, usually with more than just fingers and hands. The animation can be paused and started again.

- Memory – this module represents a standard memory game where the goal is to pair an alphabet letter with the appropriate sign.

- Explore – this module is a 2D game where our hero goes in an adventure against monsters and collects objects. Each of the collected objects is an award – an animated 3D sign of that object in MSL. The game doesn't require too many skills and it is adapted for children.

The Sign Language tutor is built from several software modules that are interconnected. This enables easier manipulation and expandability of the project. The following modules are created:

- SignLanguageTutor
- SignLanguageTutorContent
- SignLanugageTutor.Core
- SignLanguageTutor.AnimationPipeline
- SignLanguageTutor.AnimationAux
- SignLanguageTutor.TileEngine
- SingLanguageTutor.LevelEditor
- SingLanguageTutor.LevelEditorContent

5. CONCLUSION AND FUTURE WORK

Starting from the fact that in most of the developed countries, the community of deaf and hard of hearing people are included into society and in Macedonia they work only in closed circles, an idea for service learning project was developed in one of the courses held in the FCSE – the course Human – computer interaction. This project offers bigger inclusion and increases the awareness of the problems in communication of the deaf and hard of hearing people, and an easier to learn the Macedonian sign language.

The project follows the recommendations given by research human-computer interaction with deaf children (Zafrulla et al, 2010; Alonso, 1995) about deaf children psychology and abilities and the product will help in easier learning combined with fun.

As we know, the service-learning process doesn't end when a service activity is completed. A project may be finished, but service-learning is a transformational process where students, practitioners, and communities continue to grow as they discover mutual interests. In this project, there are several ideas about how to expand the usability of the application. First idea is to enrich the dictionary with more words and phrases. Another goal is to create a mobile version of this application for the popular platforms like Android and iPhone, and make the application closer to the potential users. We believe that it will enable the broader community to get more acquainted with the Macedonian Sign Language.

The next possible step is to explore the possibilities of automatically signing text in Macedonian language with using of software patterns. This requires deeper understanding of the MSL grammar.

The students from the Faculty of Computer Science and Informatics have much to offer to the community of disabled persons and to help in developing the assistive technologies. This project was only one idea that was realized during the educational process. A mandatory part of each course is developing a software or hardware product, and we always try to make them practical and useful in a certain domain. Developing designs that will help the persons with special needs is a big

challenge and our student will be more than happy to take part in much more service learning projects of this kind.

LIST OF ABBREVIATIONS/ACRONYMS

DaHHp	deaf and hard of hearing people
SL	Sign Language
MSL	Macedonian sign language
FCSE	Faculty of Computer Science and Engineering
HCI	Human-computer interaction
ICT	Information Communication Technology

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Awareness about the Needs of the Students with Disabilities (SwDs) and Attitude towards the Students with Disabilities at the Faculty of Electrical Engineering and Information Technologies in Skopje

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Abstract:

This paper deals with the problem of full inclusion of SwDs at the Faculty of Electrical Engineering and Information Technologies (FEEIT) at Ss. Cyril and Methodius University in Skopje. Using different techniques (surveys, observation, measurement, and interviews), the authors made research in five different areas regarding the problem of access to the FEEIT of SwDs. The physical access to the facilities used by the FEEIT for educational, research, administrative and other utility purposes has been taken as a starting point to move to the next level of interest - the attitude of the students and the faculty members towards students with disabilities as their colleagues and students. By interviewing members of the administrative staff, conclusions were drawn about the efforts the Faculty makes in order to provide enhanced access for SwDs. Finally, the interview with the library staff answered the questions about FEEIT's equipping with technology and resources for study and research for students with different needs. The results showed that despite the relatively positive attitude regarding the issue of greater inclusion of SwDs at the Faculty, there is still much to be done in order to improve the full inclusion and service learning in this higher education institution.

Keywords: students with disabilities, persons with disabilities, FEEIT-Skopje, attitude, access, inclusion

1. INTRODUCTION

Republic of Macedonia as an underdeveloped country has to cope with many issues in education. One of them is to maintain the quality of the higher education on a high level in a time of a considerable portion of unemployment, reforms in education and constant changes of the needs of society, industry and business. In order to keep pace with other European countries in the field of higher education, Macedonian educational institutions have to provide high quality study programmes and high quality research. It is still a challenge for the universities to improve the conditions they offer as to ensure equal access for all students and greater inclusion of people with disabilities (PwDs) in the academic process, even though the Law on Higher Education (Official Gazette of the Republic of Macedonia No.35/2008) provides that all the citizens of the Republic of Macedonia have the right to obtain education at the institutions of higher education of the Republic of Macedonia, under equal conditions.

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This Case Study analyses the Faculty of Electrical Engineering and Information Technologies - Skopje (FEEIT) at Ss. Cyril and Methodius University in Skopje, regarding the inclusion of students with different kinds of disabilities into the study programmes and research offered by this Faculty. The study covers five different topics of the problem of full inclusion of SwDs. The parts of this study shall be presented separately, describing the methodology used, the obtained results and the conclusions.

2. PHYSICAL ACCESSIBILITY OF FEEIT'S FACILITIES

2.1. Methodology

Higher education institutions should ensure that all students can access the physical environment in which they are supposed to work, study, and socially interact. That means that institutions have to make sure all the facilities and equipment are as accessible as possible to disabled students (Hopkins et al., 2005).

In the first stage of the research, special attention has been paid to the physical accessibility of the facilities and rooms used for educational, research and administrative purposes and rooms used in student's everyday life - restrooms, canteens, and photocopy facility. In this stage, observation, measurement and comparison to valid standards have been used.

The authors carefully observed all of the rooms used by FEEIT - its students and employees, and made preliminary notes about the discovered weaknesses. The Rulebook on the manner of provision of uninterrupted access, movement, and stay and work of the persons with disabilities to the objects and into them (2010) and the reference book "Accessibility: Reference book for provision of access to open spaces and facilities," (Korobar et al., 2006) have been taken as references and standards. The existing entrances, hallways, ramps, elevators and spaces were measured and compared to the recommended standards. Photographs of specific places were taken in order to document the results and help conclusions to be drawn.

2.2. Results

FEEIT mostly uses two buildings - the main building with two main entrances, and the annex building just opposite the main building. Figure 2.1. shows the only ramp for access to the Faculty's main building. The tilt angle is too sharp and the surface is slippery. Also, the slope is accompanied by one handrail only.

Figure 2.1. The ramp at one of the entrances

The entrance to the annex building has no ramps at all, as can be seen from Figure 2.2.:

The dimensions of the stairs and front doors nearly meet the criteria for physical accessibility to persons with slighter forms of physical disabilities. The entrance which has a ramp has wide doors,

but is not suitable for independent use for people in wheelchairs - the door is heavy and an assistant to open the closed door would be necessary. The entrance without a ramp has power doors.

Figure 2.2. Entrance to the annex building with no ramps

The main building is equipped with two elevators. Students are not instructed how to use them as they are locked most of the time and are mainly intended by the employees and for people with disabilities. However, the elevators do not meet the needs of all PwDs as their entrances are 70 cm wide, measured from outside, and 63 cm measured from inside, as there is an outer and inner door. The cabinet dimensions are 200x98x117cm (length x width x depth) and the standards (Korobar et al., 2006) prescribe a minimum of 110 cm in width and 140 cm in depth. The current dimensions allow neither access nor rotation of a wheelchair.

Figure 2.3. Elevator in the main building

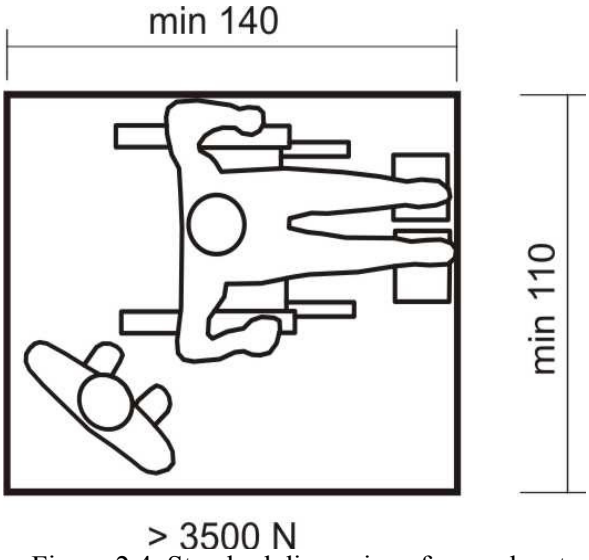

Figure 2.4. Standard dimensions for an elevator (Korobar et al.,2006)

On the ground floor of the main building, there are the Library, the Reading Room, the Amphitheatre and the Dean's Office. All of them are accessible for the students - with and without special needs, except the Amphitheatre - there are two steps which prevent people in wheelchairs to access the room in which lectures are held every day. There are two doors to this lecture room and they are 195 cm wide, which allow a wheelchair to access.

The restrooms on the first floor, which were measured and compared to standards, are completely out of standards. With a doorstep and a width of only 77 cm of the first door and the 65 cm of the

second door, they are inaccessible for persons with physical impairment. The restrooms are not equipped with handrails or specially designed toilets and the door of the cabinets open in direction opposite of the standards - towards the inside of the cabins.

Figure 2.5. Entrance to the Amphitheatre

According to ADA standards (2010), a parking with less than 20 parking spaces should have at least one place for people with special needs. In general, 3% of the total number of parking spaces should be designated for people with disabilities and clearly marked with the international sign for PwDs. The agreed standards in Macedonia are bit less strict and they prescribe that a parking with less than 200 spots should have less reserved spots than the ADA standards (Korobar et al., 2006). The Faculty uses three big parking areas and not a single space is reserved for PwDs and no sign has been put to mark some parking spots as spots for SwDs.

2.3. Conclusions

The main building of the FEEIT was built in 1960s and it was not build to suit the needs of the PwDs. Since 1960, the building has been slightly renovated, but it needs a lot more changes and adaptations to be fully accessible for all. At this particular moment, a person with physical disability, especially a person with mobility impairment cannot independently use the FEEIT's facilities.

3. ATTITUDE OF THE STUDENTS WITHOUT DISABILITIES TOWARDS STUDENTS WITH DISABILITIES

3.1. Methodology

To find out about the attitude students of FEEIT have towards SwDs and their opinion on the inclusion of PwDs in the regular education and research processes, a survey was conducted among first-year students enrolled in the English course at the Faculty. A survey questionnaire with 13 questions was distributed to 80 students. Most of the questions offered multiple choices for answers. All of the distributed questionnaires were returned answered, but some students did not provide answers to all the questions.

3.2. Results

The survey results show that most of the students, 79% of the respondents, believe that they are well informed about the term "persons with disabilities" or "people with special needs". More than a half of the students (53%) responded that they have never had a closer contact with PwDs, but 73% of the total number of students who responded the survey have attended a lecture, a training or a workshop where disabilities were in focus.

Most of the students (64%) completely agreed to the statement that persons with disabilities should be entitled to the same rights and opportunities as people without disabilities, whereas only 2% did

not agree with this. Opinions about whether in Macedonia persons with disabilities enjoy the same rights and opportunities as people without disabilities were divided as follows:

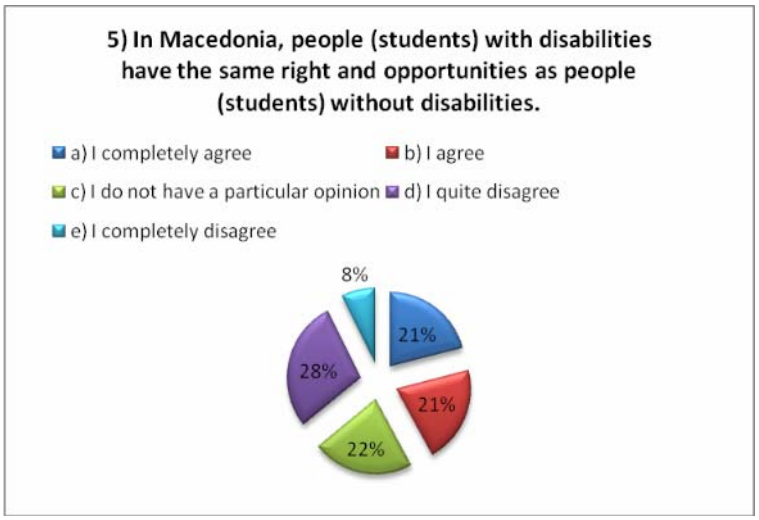

Figure 3.1. Distribution of answers to question no. 5 of the questionnaire

Regarding the inclusion of SwDs into the higher education, 11% believe that SwDs are included enough, 46 % are not sure (they do not know) and the rest, 43% of the students who responded, think that SwDs are not included enough into the higher education in the country.

Asked if they would mind the professors to modify the study programmes in order to make them suitable for SwDs, 79% responded that they would not mind, and 80% of the students who responded the questionnaire would not mind their professors to extend the due time of the exams for their colleagues with disabilities.

According to the answers, when they meet a colleague with disability 38% of them offer help, 43% wait for the colleague with disability to ask for help, 9% get confused and are not sure how to react, 1% ignores the person, and the rest (9%) either did not answered or circled “other”.

Opinions were rather different on the statement that SwDs should study at special institutions - 25% responded that they completely agree, 20% that they agree, 33% had no opinion, 15% disagreed and 7% completely disagreed with the statement. On the other hand, 42% completely agreed that SwDs are able to study and successfully complete all the necessary activities and tasks needed for graduation and another 40% just agreed with this. The rest either did not know (12%) or disagreed (6%) - no one completely disagreed.

The final question asked the students to choose among several offered answers (on a Likert scale) regarding the statement that the teaching staff of the Faculty is well trained for adaptation of teaching materials in order to meet the needs of SwDs. Results were: 49% remained neutral, 20% disagreed, 15% agreed, 9% completely disagreed, and 7% of them completely agreed.

3.3. Conclusions

The answers that students gave to the questionnaire show clearly that students of FEEIT are aware of the fact that SwDs are not fully included in the HE in Macedonia. Despite the fact that most of them believe to be well informed about disabilities and the needs of PwDs, most of them have had no direct contact with such persons. They mainly believe that all students should have same treatment and opportunities, but they think that this group of people is not equally represented in the HE in the country. Students are sometimes not sure how to react in the presence of a person with disability and it can be concluded that the students lack education and information regarding this matter. They are mostly positive towards SwDs, but there is a hint that they may not

understand well what does modification and adaptation of educational materials and programs mean.

4. ATTITUDE OF THE TEACHING STAFF TOWARDS STUDENTS WITH DISABILITIES

4.1. Methodology

For examining the attitude of the teaching staff of FEEIT towards students with disabilities an electronic questionnaire was used. A questionnaire containing 10 questions - 1 about the academic title of the respondent and number of years of experience in teaching in HE, and 9 problem specific: 7 structured and 2 open-ended questions. The questionnaire was sent to approximately 200 addresses by use of a single address. Out of those nearly 200 addresses, some 120 belonged to members of teaching staff. The text of the e-mail with the link of the survey clearly stated that it was addressed to members of the teaching cadre only. The number of filled in questionnaires is 30, which would say that the response was some 25% (from the 120 addresses).

4.2. Results

Most of the respondents are junior teaching assistants or teaching assistants (11 out of 29 people), then full professors follow (8 full professors), after them are associate professors (6 associate professors) and assistant professors (4 assistant professors). Considering the number of professional experience, the distribution is quite even: up to 5 years - 7 respondents, 5 to 10 years - 7 respondents, 10 to 20 years - 8 respondents, and over 20 years - 7 respondents.

Half of the teachers said that in the course of their careers have had students with disabilities, whereas 17% are not sure - the rest stated that they have never had one.

A great deal of the respondents (70% or 21 person) believes that he/she could easily notice a student with disability, only one person said that he/she could not tell whether a student has a disability or not, and the rest did not know (4.1.Figure).

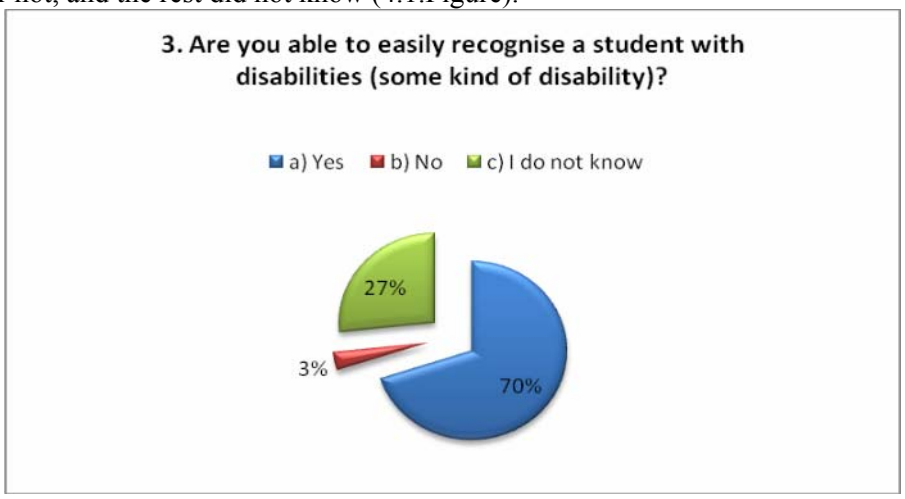

Figure 4.1. Distribution of answers to question no. 3 of the questionnaire

Asked if they think that the presence of students with disabilities in the regular classroom would have a negative influence on the class dynamics, 73% answered that it would not have negative influence, 17% answered with "I do not know" and 10% answered with "Yes".

Answers to the question about equal possibilities for success in the professional field of SwDs showed that most of the teachers who responded believe that the chances for success are the same (41%), but the number of the teachers who think that the chances are lower for the SwDs is not low - 31%. The rest 28% do not know.

Regarding the modification of the syllabus and the programmes to be appropriate for SwDs, 53% would have no objections to make modification to their study programmes, 10% would have problem doing that and 27% answered that it depended on the program.

A large number of respondents, even 97% have never attended a seminar, training or workshop for teaching SwDs, and 73% of the total number of respondents of the survey believe that it would be useful to attend such trainings, seminars or workshops.

The first open-ended question asked for their opinion about the inclusion of SwDs into the regular education programs. This question was answered by 27 teachers and they mostly believe that students with disabilities should be included fully, and that the Faculty should make efforts to provide conditions for every student to be able to participate in the programs and have the right to higher education. Here are some of the answers which are found to be slightly different:

- "If it doesn't have a negative influence on the rest of the students, I think that inclusion of SwDs in the regular education programs shouldn't be a problem."
- "I have no opinion. It is more important to consider what they will do after graduation. "
- "It depends on the type and the level of the disability; it is possible that some of the students with disabilities can be integrated without problems in the regular education programmes."
- "Only to a certain level of disability"
- "There would not be a problem regarding the lectures, but the problem would arise during the practical work."

4.3. Conclusions

Conclusions can be derived that the teaching cadre of FEEIT mostly believes that there is a need of a total integration of the students with disabilities in the regular study programmes. According to the results, they are aware of their lack of skills in recognizing disabilities in students and that they need to learn about working and teaching SwDs. They recognize the problems with physical inaccessibility of the facilities that the Faculty uses and they agree in large percentage that modifications to the programs can be done easily and should be done to raise the number of SwDs at FEEIT.

5. ATTITUDE OF FEEIT AS A UNIT TOWARDS STUDENTS WITH DISABILITIES

5.1. Methodology

For the purpose of this study, an e-mail with 6 questions was sent to the Head of the Student Affairs Office and an electronic questionnaire with thirteen open-ended questions was sent to the Dean of the Faculty, the Vice-Dean for Education and the Secretary.

The Head of the FEEIT's Student Affairs Office replied to all the questions, but with very short answers and without additional explanations, and the questionnaire sent to the Dean of the Faculty, the Vice-Dean for Education and the Secretary were not received until the end of the due time planned, so they were interviewed orally.

5.2. Results

From the answers received from the Head of the Student Affairs Office, it can be seen that there is no employee/officer or a contact person in the Student Affairs Office responsible for cooperation with SwDs and keeping records of SwDs and matters regarding their issues. According to the respondent, currently only one student with disability is registered at the FEEIT and that person is physically impaired. A student can be registered as a PwDs only upon a personal request of the person with disability and by delivery of document about the medical condition issued by a relevant health institution.

The officers of the Student Affairs Office have not attended a seminar, training or a workshop for work with SwDs/PwDs in the last 10 years and have not had collaboration with an organization of PwDs. According to the answers, not a single student has asked the employees of this office for help or some kind of service until today.

The three top managers of FEEIT are unanimous that FEEIT implements the current regulations and laws, but that has no strategy of its own regarding the SwDs. The general stand of the Faculty towards this problem is that additional efforts should be done to enhance the enrollment of SwDs. According to the answers, until recently not much in particular has been done to improve the conditions for this category of students, but in August 2012 a working group/body was created for elaboration of the problems and needs of SwDs, and creating a strategy for provision of uninterrupted physical access and study programmes suitable for all.

The Faculty has not got a nominated person responsible for contact with SwDs or dealing with problems these students face with at FEEIT. The respondents all replied that neither the teachers nor the officers who work at the Student Affairs Office attended lectures, seminars or workshop at the FEEIT initiative and that the Faculty has never collaborated with some NGO or other type of organization representing PwDs or SwDs.

To the question about whether the management encourages the teachers to modify the study programmes in a case they have students with disabilities in their class, the Secretary and the Vice-Dean replied that they can not interfere too much in the programs, but they support that kind of modifications, and the Dean replied that he strongly encourages them. They all stated that not a single student has asked them to mediate modification of programs or for other form of help.

The Vice Dean for Education believes that funds for support of SwDs should be provided by the State, the Secretary thinks that help should be provided by the State and by the University, and Dean states that funds for SwDs should be provided by all of the mentioned choices in the question (the state, the university, the faculty or some other institutions).

None of the interviewed persons knew the exact number of students with disabilities currently studying at FEEIT as students can be registered as SwDs only on personal request. According to them, the new software for student admission offers possibility for a student to register as “a person with disability of first degree”. They all responded that FEEIT has not acquired assistive technology yet, but the Dean stated that the working body he established would work on this issue also.

5.3. Conclusions

It can be concluded that FEEIT is not well prepared administratively for students with disabilities at this moment. However, there are initial efforts regarding SwDs and their total integration in the HE. It is especially shown in the fact of establishing a special body for elaboration of the problem and finding out solutions.

6. AVAILABILITY OF RESOURCES FOR STUDENTS WITH DISABILITIES

6.1. Methodology

The Faculty Library being the main resource for study and research materials and information, the Head of the Library was sent a questionnaire with 5 open-ended questions. The questions covered the topics of physical accessibility of library services and programs, the use of assistive technology and library contacts with people with disabilities.

6.2. Results

Asked about the existence of materials suitable for SwDs of differen kinds, the Librarian explained that the FEIIT’s library does not possess any materials specially designed to suit the needs of SwDs.

In addition, it was said that there is a certain number of electronic materials, but no materials have been purposefully acquired for SwDs. According to her, all the facilities used by the Library have adequate physical access - the location of the Library is suitable for all students as it is located on the ground floor of the main building. Furthermore, the services and programs offered by the library are provided for all students equally - the library assistants help the patrons in the process of borrowing the units and use of computers, but the Library offers no assistive technology.

The Librarian stated to have attended workshops for working with PwDs, taken part in projects concerned with PwDs and made contacts with organizations of PwDs on her own initiative. The library assistants have not attended any trainings, seminars or workshops in the last 10 years on a request of the Faculty.

6.3. Conclusions

The findings show that the library staff is aware of the problems PwDs are faced with in the HE and are showing initiative for improving their work in order to help the integration of this particular group of patrons. However, little has been done regarding inclusion of assistive technology or supply of special literature for SwDs.

7. CONCLUSION

The results of the survey and the conclusions drawn from these five different parts of the study witness about the initial good will for improvement of the conditions at FEEIT. The teaching staff is willing to make modifications to the programs and their awareness for the need of adaptations to the physical environment and the students are supportive to their colleagues with disabilities. The management did show a particular interest in resolving the current problems with physical access, modification of programmes, and provision of special equipment for SwDs at FEEIT by establishing a working group whose task is to elaborate the problems SwDs face with and to give propositions for resolving the problems addressed.

It can be concluded that theoretically things are rather positive, but there is still a lot of work to be done in practice. The first step being made, it is possible to achieve good results in near future.

8. FUTURE WORK

The findings and conclusions of this study indicate a clear need for further practical work in the field of enhancing the enrollment of SwDs into the regular study programmes of FEEIT in Skopje. The first steps to it should be making modifications and adaptation of the physical space used by this institution. Here, the fact that the buildings that FEEIT uses are shared with the Faculty of Mechanical Engineering in Skopje should be mentioned. These two faculties should join forces - collaborate and share expenses in the process of making the buildings, the lecture rooms and all the other objects accessible. The concept Design for All should be implemented.
The next step should be raising the awareness of the teachers and students about the disabilities and the needs of the PwDs through organizing workshops and trainings at the Faculty. Employees of the Faculty should be sent to trainings for working with students with different kinds of disabilities and regular contacts should be kept with organizations of PsDs.

Well-informed and trained personnel can make considerable change, can improve the life of this category of people and enable their full inclusion in the higher education. In this way, the Faculty would work in accordance with the Law on Higher Education.

LIST OF ABBREVIATIONS/ACRONYMS

PwDs	Persons with Disabilities
SwDs	Students with Disabilities
FEEIT	Faculty of Electrical Engineering and Information Technologies

HE	Higher Education
ADA	Americans with Disabilities Act

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Service Learning in Architecture for Improving Access to Higher Education

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Abstract:

This paper reflects on an Architectural Design course modification with implementation of service learning methodology in the education of future architects, tackling the problems of accessibility of higher education institutions for people with disabilities. Since the building of the University Ss. Cyril and Methodius, Faculty of Architecture – Skopje (the building where future builders of the Republic of Macedonia are educated) is inaccessible for people with disabilities the case study is the existing building and the adaptation of its architectural barriers for better accessibility of people with disabilities.

Keywords: service learning, accessibility, architecture, adaptation, education.

9. INTRODUCTION

The idea of improving access to higher education through the use of service-learning methodology is, to some extent, directly related to the study visit in the US and the tour which mentors from the Faculty of Architecture in Skopje, participants in this workshop, had around Universities in the US as a part of the JFDProgram sponsored by the U.S. State Department few years earlier. Within the final conference of the JFDProgram which was held in Washington DC in May 2007 participants from Republic of Macedonia proposed a project for improving the accessibility of the higher education institutions in Republic of Macedonia for people with disabilities.

The First-hand experiences with new educational methods (including service learning) in education institutions with minimal architectural barriers were an awakening moment. It was about time to do something to improve the current condition of accessibility of higher educational institutions in the Republic of Macedonia and raise the awareness of the general population for this issue.

Changes that happened in the curriculum of the Faculty of Architecture in Skopje recently as a result of the implementation of the Bologna declaration and mobility of students and credits introduced the Architectural Studio as a new type of training in the educational process of future architects. Also the shift of generations in the teaching staff, have created new opportunities to address the problems of accessibility and architectural design without architectural barriers. Yet, the inert institutions, the unpreparedness for deviation from familiar pathways as well as the financial problems the higher education institutions in Republic of Macedonia have, are huge problems for the realization of such a project. For these reasons, the realization of the proposed project differs from the initial concept. It is fragmented, partial and its implementation is delayed.

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10. METHODOLOGY USED

The proposed project researches the aspects of accessibility to higher education institutions as a "spatial" problem. The proposed project deals with this problem by using "service learning" methodology in context of people with disabilities in the educational process of future architects. Service learning is a teaching method that combines and enriches formal education with adequate service in the community. The principles and practices learned through formal education are placed directly in the adequate social context (service to others), and in our case in the spatial environment. Besides the specific professional skills by using service learning the student learns about civic responsibility simultaneously strengthening the community. The case study for this project is the existing building of the Faculty of Architecture in Skopje.

Figure 2.1.

The implementation of service learning educational methodology started as a project by the mentor's active participation at a couple of regional conferences presenting papers on service learning and accessibility issues[4], gathering and sharing information about various experiences on the specific topics with the other participants at the conferences. Once the goals were crystallized and the way to reach them was clear, a team of mentors[5] and students[6] was formed in order to work together on the problem of improving the accessibility of the Faculty of Architecture for people with disabilities. The first set of workshops of the Alumni Engagement Innovation Fund Project - "Equal Access through Service Learning for Persons with Disabilities" implemented through the Macedonian American Alumni Association (MAAA) was used as an opportunity for the students of architecture to listen and discuss, and by doing so, learn more about the problems and challenges

[4] JFDP Regional Alumni Conference on Service Learning: Implementation, Impact and Visibility August 27-31, 2008 in Herceg Novi, Montenegro. Presentation and Discussion: "Access to higher education from an architect's point of view" presented by Bojan Karanakov
JFDP Regional Alumni Conference on "Enhancing the Accessibility of the Higher Education to the Disabled" November 22-24, 2010 in Skopje/Ohrid, Republic of Macedonia
Presentation and Discussion: Better Higher Education for Everyone" Presented by Bojan Karanakov

[5] Bojan Karanakov MSci, Mihajlo Zinoski PhD, and Divna Pencic PhD

[6] Anastasija Nikolovska, Barbara Irakoska, Gordan Vitevski, Kristina Jordanovska, Mila Dimitrovska, Monika Novkovikj and Vlado Danailov - students in the 8th semester - the 4th year of studies at the University "Ss. Cyril and Methodius" Faculty of Architecture, Skopje

that students with disabilities encounter daily directly from them. They also listen and learn how professionals from other fields of expertise address the problem of accessibility **(**Figure 2.1.).

This step was followed by a series of discussions between mentors and students where the problem of adaptation of the building of the Faculty of Architecture for people with disabilities from an architectural point of view was opened in front of the students and was introduced as the subject of research.

11. DEFINITION AND ELABORATION OF THE PROBLEM

Although the problem of accessibility of the cities is as old as the cities themselves, the question of treatment of the architectural barriers is relatively new. The problem of integration of persons with disabilities in all segments of society is directly linked in causal connection with the accessibility of buildings and urban infrastructure in general. Cities and buildings that we actively use and spend our everyday life in are old, designed at a time when the question of their accessibility for people with disabilities was not actual. It is unquestionable that the newly designed and built facilities within the urban tissue should be designed according to the accessibility standards. But the city is not made only by new buildings. What happens with the rest of the city and the old buildings which are home to some of the public institutions supposed to be accessible to all? The answer is adaptation. They should be adapted to allow accessibility for all, within the limits of the possible, reasonable and legally permissible (Figure 3.1.)[7].

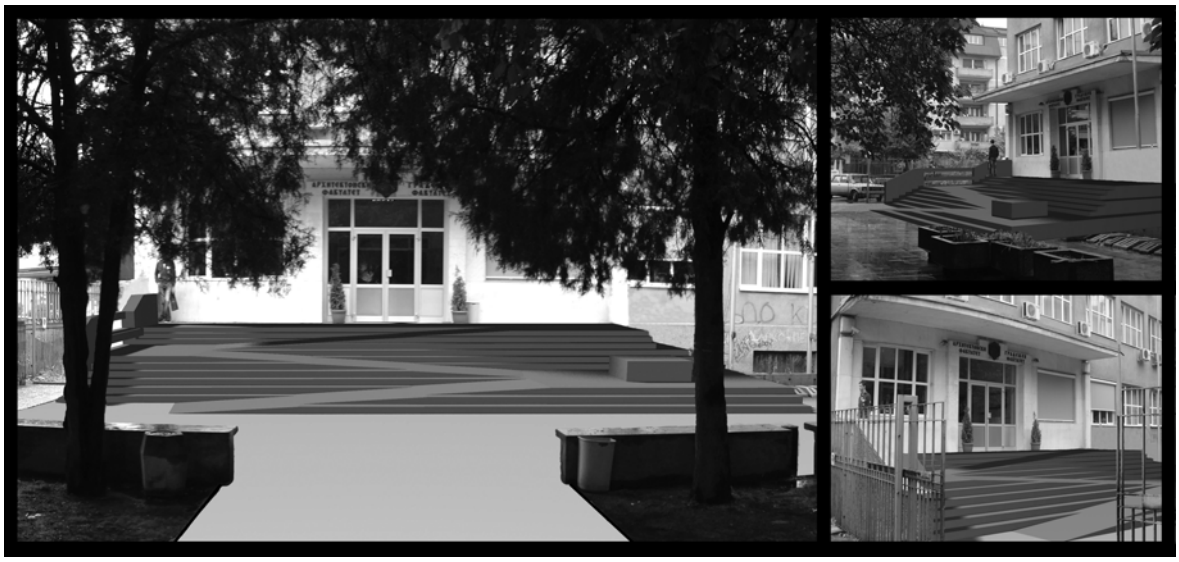

Figure 3.1.

Skopje is a city that cannot serve as a good example of the level of its accessibility. Due to the above mentioned causal link the number of people with disabilities that are actually present and visible in Skopje daily life is minimal, and as a direct consequence of this, the awareness of the rest of the citizens is very low.

11.1. Research subject

The building in which the Faculty of Architecture at the University "Ss. Cyril and Methodius "in Skopje is accommodated, is the same where our professors studied, we studied as students and now work as teachers. It is over 60 years old. At the time it was designed as a Technical School the problem of accessibility for people with disabilities was not taken into consideration by the designers. Hence, the building is completely inaccessible to people with disabilities. (Figure 3.2.)

[7] A proposal for adaptation of the main entrance to the building of The Faculty of Architecture designed by Bojan Karanakov presented at the JFDP Alumni Regional Conferences in 2008 and 2010

Since its inception until now, over 4300 students have graduated at the Faculty of Architecture in Skopje. Considering that the Faculty of Civil Engineering and its students are situated in the same building, as well as the fact that all enrolled students have not graduated, the number of students who have studied in this facility is significantly larger. The number of students with physical disabilities who have studied at this facility for higher education throughout its history is very small, almost negligible. During the period of their studies, these few students with disabilities have encountered unimaginable problems in their constant struggle with the architectural barriers. Only because of their perseverance and sacrifice and the perseverance and sacrifice of their families, as well as the love for their future profession and desire for learning they managed to graduate at the inaccessible building of the Faculty of Architecture in Skopje. In civilized societies it is inacceptable to have future students choose the University or Faculty they are going to study in, based on the physical accessibility of the buildings instead according to their aspirations and talents. Having in mind that this is the building where the future builders of the Republic of Macedonia are educated in, it becomes the perfect place to act in the context of addressing this troubling issue.

Figure 3.2.

12. RESEARCH PROCESS

12.1. Goals of the research project

The aim of the project is including “service learning” methodology in the educational process through the architectural design project for adaptation of the actual building of the Faculty of Architecture in Skopje for people with physical disabilities. Student’s project will be enrolling within the existing curriculum of the Architectural Studio courses through several academic years.

The architectural design projects of specific course subjects will be enriched with exact problems and locations related the accessibility of the existing building of the Faculty realized through workshops or internal student competitions. The possible topics for the Architectural Studio

courses associated with the general topic of accessibility of the Faculty of Architecture in Skopje include:

- Measuring and documenting the existing building of the Faculty of Architecture
- Presenting the building in drawing and model
- Building a digital model of the building
- Students research about accessibility issues through active assistance aimed at the group of people with disabilities (service learning)
- Designing an architectural design for adaptation of the building for the Faculty of Architecture in order to improve its accessibility for people with disabilities (parking lots, ramps, lifts, platforms, toilets...) followed by lectures and discussions on relevant topics
- Introduction of Design-Build Studio in the curriculum of the Faculty during which students are meant to design a project for adaptation of the Faculty of Architecture and would be directly involved in the actual building of some of its segments under proper supervision.
- Designing a new building for the Faculty of Architecture where students will apply all their previously gained knowledge in the Architectural Studio courses by working on specific problems of adapting the existing building of the Faculty of Architecture.

Beside the Architectural Studio courses, segments of the project could be covered by different specific courses in agreement with the course teacher. For example, digital models could be built at the CAAD and CAAM courses, cardboard models within the Modeling course, etc. And if that's not possible as well, then, an internal student design competition could be organized in order to include that same segment in the final report.

12.2. Realization of the research project

The project was realized in the 8 semester as a part of the Architectural Design 6 course (Design of Public Buildings) which professor Mihajlo Zinoski, one of the mentors in the project, teaches.
A group of 7 students was selected to participate in this project and their regular course assignment was replaced by this project's assignments and at the end, upon the successful completion of the assignment, the students were awarded 2 credits each.

The research project's first step of realization was the preparing the technical documentation of the actual location and the critical accessible points at the building as well as 2D and 3D representation. (Figure 4.1.)

Students designed an architectural project for adaptation of the building improving its accessibility. The architectural proposal consists of several variations for the same positions in order to discuss the advantages or disadvantages of each proposal. Provided solutions with different complexities of adaptations were developed in order to allow further deeper calculation and analysis of the financial aspects of the proposed interventions. The possibility for building in fazes (according to the funding) was also taken into consideration. (Figure 4.2.)

The aspect of social integration in the proposed architectural interventions was especially important in the design process. The main goal of such an approach was to make the new architectural interventions (mainly designed for students with disabilities) be used simultaneously by all the other students in their everyday student life, not exclusively by persons with disabilities. So benches, shades, bicycle stands that are used by all the students became a part of the access ramps. (Figure 4.3.)

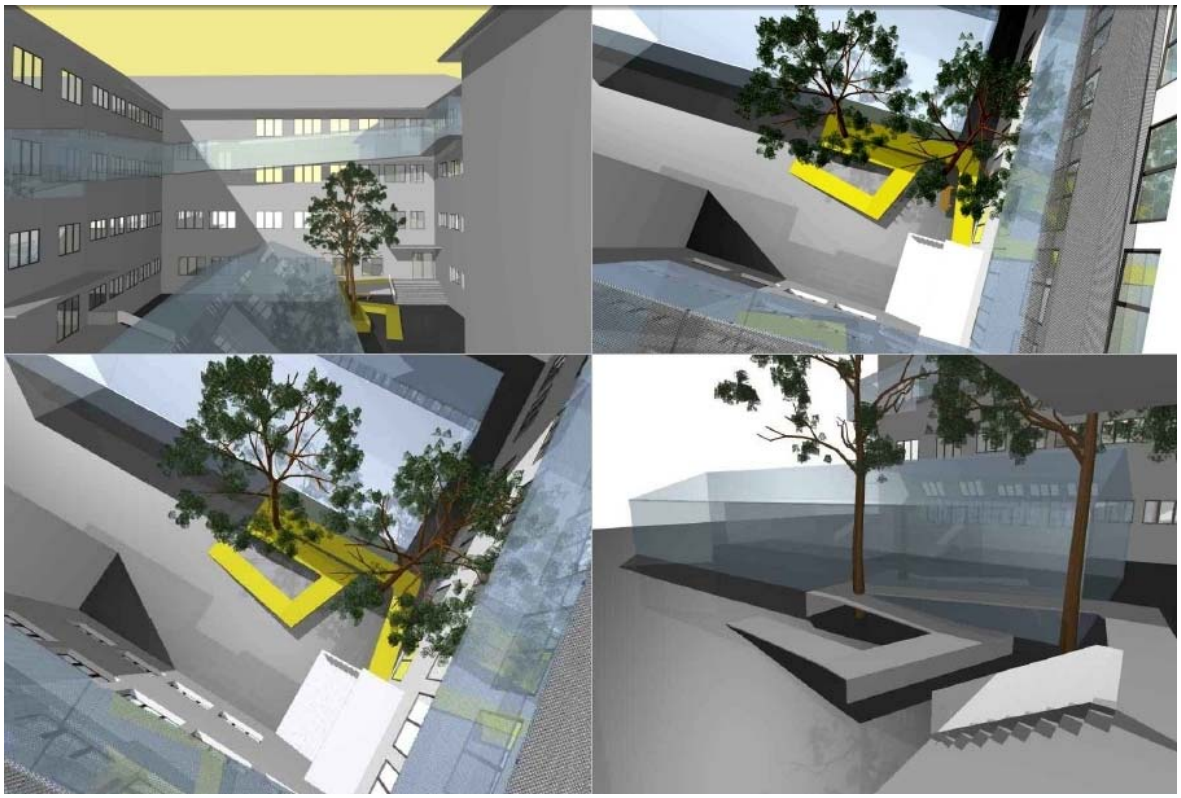

Figure 4.1.

Figure 4.2.

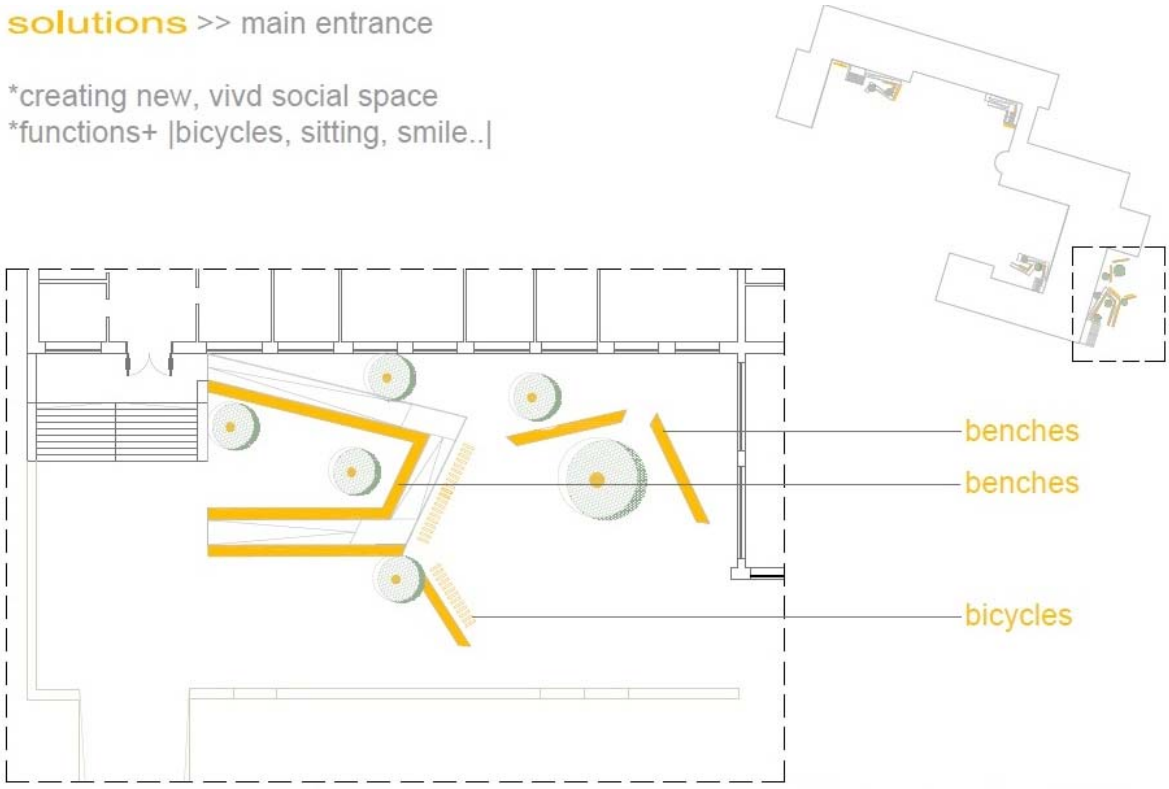

Figure 4.3.

The points that were addressed through this student design are:

- access points to the existing building of the Faculty of Architecture (for pedestrians and vehicles)
- parking lots for people with disabilities
- accessible entrances in the building
- horizontal communications through the building
- vertical communications through the building
- accessible toilets
- accessible classrooms
- accessible doors and thresholds

13. CONCLUSIONS AND FUTURE WORK

Expected effects of the project are:

- Increased awareness of architects (current and future) for this marginalized group of people in our society that mainly because of architectural barriers are prisoners of their own homes and do not have access to a part of life in the city;
- Better education of architects by implementation of new methodologies in the educational process;
- Learning architecture through discussion, design and construction of student projects;
- Meeting the accessibility standards and gaining educational facilities accessible for all.

Once the final design and financial calculations are done the Faculty may request funds for its realization or realization of a certain segment of the design. Due to the humane dimension of such an endeavor, its implementation in the educational process of future architects and the improvement of the quality of higher education within our colleges and universities we believe that this proposal will be supported by all relevant institutions in which we can apply for financial means: government, ministries, embassies, NGOs, etc.

The Faculty of Architecture is not the only higher education institution within our University that does not meet the accessibility standards and so the possibility for this project to cover several faculties within the University is open. Other educational institutions (high schools, elementary schools, kinder gardens, daycare facilities…) have accessibility problems so they can become field of interest of the same project. Bearing in mind that many of the surrounding countries share the same problems, this project can grow and become regional.

Integration of people with disabilities in all segments of society is an obligation for all of us, no matter what kind of physical condition we are now in. This process should not be understood as a process that helps someone out there, far away, because we are all potentially people with disabilities and special needs. Even in the most of egoistic contexts, it is in our interest to make the city and life in it accessible to all.

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Automated Pneumatic Wheelchair: A device to Overcome Barriers for Persons with Disabilities

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Abstract:

Around 15 – 20% of the world's population can be classified as people with disabilities. For that reason we are obliged to take their needs into consideration, as well as to assist them in every possible way to conduct a normal life as much as possible. One of the biggest problems the persons with disabilities are challenged with is the problem with psychological depression resulting from the lack of attention that other people provide. This is an everlasting fight that we as human beings are faced with, to encourage humanity and raising awareness among the main-stream population.

Among the severe vulnerable are the persons with disabilities with mobility dysfunctions. Unfortunately, in a significant number of countries where the awareness for physical accessibility is low, the problem of physical accessibility is not solved. In those countries, including as well Macedonia, architectural standards and rules are ignored, implying limited physical access of individuals with disabilities, e.g. buildings without elevators, access ramps, paths along which the people with physical disabilities could safely pass, inaccessible medical institutions, educational institutions, cultural objects, social welfare centers, private buildings and countless other anomalies are present. It is time to change it, in order to enable equal access to all, thus make the world a better and a more accessible place to live.

In this paper we focus on the issue of the mobility of the persons with physical disabilities, in particular, adapting the existing inaccessible staircases or similar vertical obstacles in the buildings by means of proposing installation of an automated pneumatic platform-wheelchair. For the purpose to be understandable for a wider population, herein, we only present the basic project idea without the corresponding technical calculations. We believe that with our project idea, we are contributing to a possible solution to the problem of the inaccessible staircases in inaccessible buildings persons using wheelchairs are faced with on a daily basis

Keywords: elevator, persons with disabilities, physical accessibility, environmental awareness.

1. INTRODUCTION

People rarely pay attention to problems they are not challenged by. I am not ashamed to admit that I was not an exception to this and therefore like all other people, I paid little attention to the problems the persons with disabilities face, as well as to their needs.

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However, when in my family a problem of that kind appeared, I found it acceptable, even necessary to start considering these issues and to speak publicly about these topics. Moreover, it inspired me to work on this project that hopefully shall be able to solve some of the problems the persons with disabilities face, i.e. to increase accessibility and mobility at least of locations where they need and want to go and visit.

The work presented herein deals with solving the problem of climbing up and down the stairs with the help of a fully automated pneumatic platform that intelligently accommodates to the obstacles and conditions ahead of the path of movement.

2. DEFINITION AND ELABORATION OF THE PROBLEM

All around us there are proves of non-standardized stairs. Therefore, this project is meant to consider a vast variety of flexible boundaries, in terms of type, geometry, and dimensions of the stairs.

2.1. Stair types

In practice, generally there are three basics stair types (Figure 2.1):

1. "ordinary" stairs (Figure 2.1a) – type 1
2. stairs with a jut ("tooth") (Figure 2.1b) – type 2
3. "montage" stairs (that do not have a vertical surface) (Figure 2.1c) – type 3

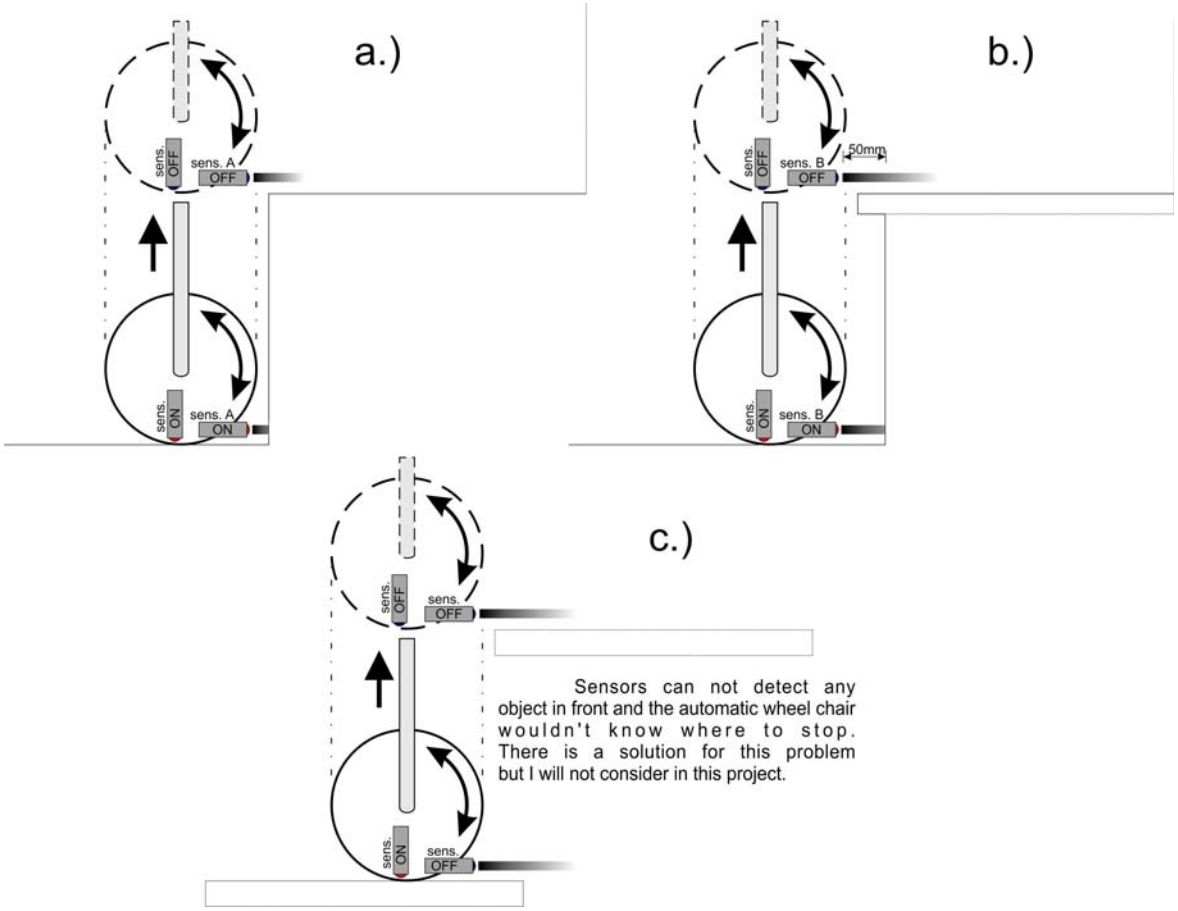

Figure 1. Basic stair types.

2.2. The platform versus the geometry and dimensions of the stairs

The platform subject to this work is designed to be able to move on stairs with a height greater or equal to 10mm and minimum stair depth of 250mm (Figure 2.3). Due to the length of the front cylinder, the maximum height of the stairs is limited to 500mm.

Due to the exactly defined distance between the front and the rare wheels (1 meter) (Figure 2.2), if the maximum stair height is 500mm, the minimum stair depth must be greater or equal to 500mm (Figure 2.4), because the length of the stroke of the rear pair of cylinders is 1200mm.

For easier explanation of the problem, Figure 2.3 and Figure 2.4 present the minimum and maximum limitations, correspondingly.

Note: The width of the stairs must be at least 10% larger than the designed platform.

The above defined platform design, enables this mobile platform to theoretically overcome all stair dimensions.

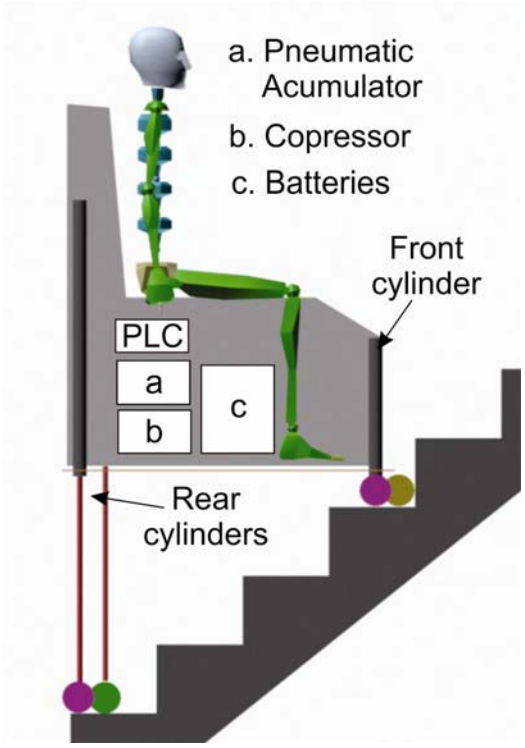

Figure 2.2 The automated pneumatic platform.

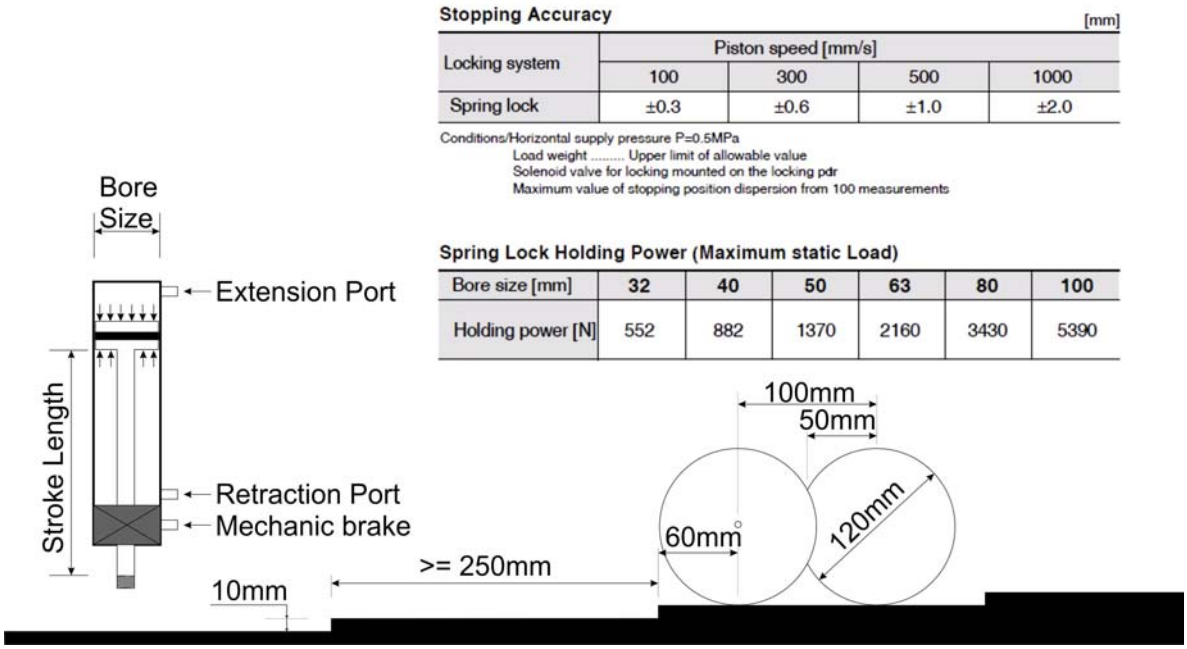

Figure 2.3 Maximum and minimum dimensions of the stairs limited by the platform design.

Another limitation of the movement of the platform is that we presume that the jut ("tooth") on the stairs of type 2 in practice shall not exceed 30mm.

On Figure 2.3 we can see that the limitation for the minimal stairs height is directly dependent on the reaction time of the cylinder with a mechanical brake, while the limitations for the minimal depth of the stairs directly depends on the diameter and distance of adjacent wheels.

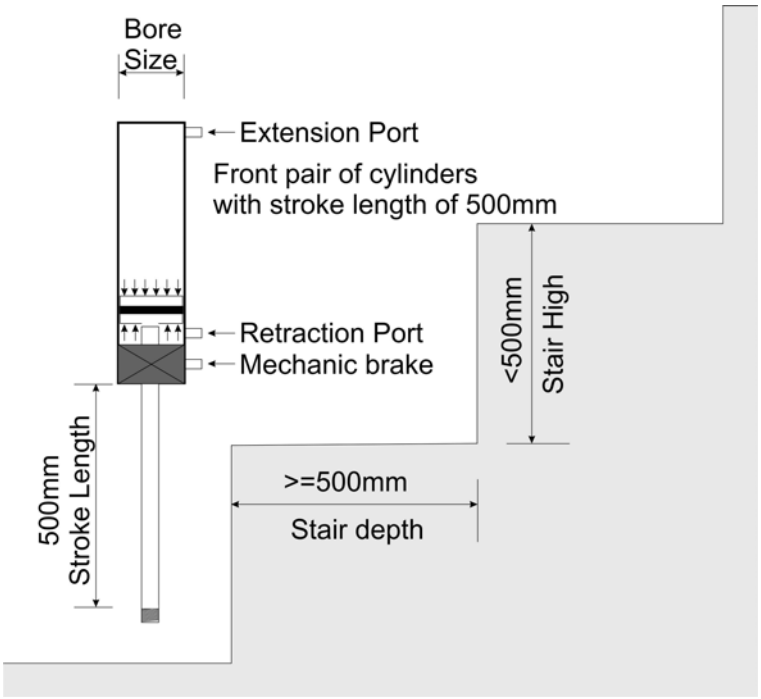

Figure 2.4 Maximum and minimum dimensions of the stairs limited by the platform design.

It this paper we focus only on solving the problem of climbing up and down the “ordinary” stairs (Figure 2.1a).

The problem that arises while climbing up and down the stairs with jut ("tooth") (Figure 2.1b) is solved with a simple choice of a predefined option on the control panel of the platform, whereby the group of sensors B (Figure 2.1, Figure 2.5) becomes active. In such case, the sensors are tuned to detect objects at a horizontal distance of 50mm, so that the wheels of the platform stop the rotation when the sensors detect the vertical obstacle (the vertical surface of the stairs) 50mm ahead of it.

The design of the platform presented herein does not solve climbing up and down the stairs of type 3 (Figure 2.1c). Here we can see the limitations of the design of this platform – wheelchair. In the case of stairs of type 3 the sensor groups A and B are not able to detect the vertical obstacle ahead of the wheels simply because it does not exist in this type of stairs. Thus, due to the fact that the vertical obstacle does not exist in the stairs, the platform does not obtain information that it should stop.

The solution to this problem has been taken into consideration. However, since even the solution to the climbing up and down the “ordinary” stairs is complex by itself, it was decided to solve each complexity step-wise. Therefore, climbing up and down the stairs of type 3 has been left to be subject of the next phase of this research.

2.3. Description and Function of the Platform Components

The platform (Figure XXX) is a complex automated wheelchair that is composed of

- three pneumatic cylinders,
- four-wheel drive (in the form of rollers), each equipped with 2x4 wheel sensors (Figure 2.1 shows that each wheel is fitted with A and B group of sensors placed forward and down. Front sensors from Group A are tuned to register objects near the wheels, while sensors from Group B at a distance of 50mm (for climbing stairs with a "tooth"). Sensors placed down, register the safe stopping surface on stairs.

- steppers motors that generate torque to the wheels,
- aluminum structure due to the overall weight of the wheelchair and
- comfortable seat for the person with disabilities.

On the right side of the wheelchair (optionally on the left in the case of a left-handed person) is the control panel of the platform, from which one can choose the required parameters and movement options, such as the type of stairs etc.

The platform consists of electro pneumatic components, thus it needs compressed air and electricity. Therefore, foreseen is a battery placed underneath the wheelchair seat. The Programmable Logic Controllers (PLC) power the steppers motors for propulsion of the wheels and if necessary they activate the compressor which complements the pneumatic pressure in the accumulator. Therefore, it is necessary to constantly monitor the level of stored energy in batteries and pneumatic accumulator.

Because of security reasons it is also necessary that the wheelchair contains a system registering the horizontal placement of the platform. Namely, the platform should adjust to the possible change of the position of the person seated in the platform, following the change of the center of gravity. This system is equipped with encoders (that directly monitor the position of the three cylinders) and accelerometer that follows each movement of the base. Thus, if the base shifts from the horizontal position with proportional valves, condensed air flow is directed appropriately to the cylinders that are with less geodetic height and the platform will returns to the horizontal position.

2.4. Process and cycles

The process of climbing up and down the stairs can be divided into three phases, as follows:

Phase I – the wheelchair has changed its position with the wheels (rollers) from ground plane to the stairs, while the rear wheels are on the initial plane – level. The movements in this phase depend on the size of the stairs, their height, as well as their length. It lasts until the sensors on the rear wheels (rollers) are not activated or they do not detect the first stair ahead of them. When that happens, the platform automatically switches to phase 2 or 3, respectively, for the particular situation.

Example: If the platform needs to climb 3 stairs with a height of 200mm and length 250mm, even before the rear wheels can identify the first stair, the front wheels shall end their ascent. The wheelchair will rotate the wheels while the rear sensors recognize the first stair. At this point the platform will automatically transfer from phase 1 to phase 3, and will continue its movement.

Phase II - In this phase, the front and rear wheels are both on the stairs. The movement is slower compared to the movement during the first phase due to the complexity of the problem, as well as because of the stability of the structure. Compared to the rear wheels, the front wheels work independently, and in any moment if a sensor is activated, the recorded logic in the PLC "knows" exactly what is the next step. The question arises whether the platform is able to climb up and down stairs each with different stair depths. Certainly, this shall not represent a problem because in the predefined logic of the PLC priorities are set to follow various types of obstacles.

- If the sensors on the rear wheels (rollers) first recognize a stair, in order to secure the stability of the platform, at least three wheels (rollers) have to stand firm on a stable surface.
- If the sensors on the front wheels (rollers) first recognize a stair, in order to secure the stability of the platform, at least three wheels (rollers) should stand firm on the stable surface.
- In the situation when both the front and rear wheels record existence of stairs ahead, the wheelchair will stand on only two wheels (rollers), which is the minimum number of wheels for the platform to remains stable.

Note: The wheels (rollers) are in a form of cylinders with dimensions shown on Figure 5 and width equal to the width of the platform.

Phase III – this is the third and final phase in climbing stairs, i.e. the phase where the front wheels has finished their ascent, while the rear wheels are still on the stairs. During this phase the speed of ascent is the same as in phase 1.

If the wheel chair encounters a situation and/or a problem that can not be surpassed, an appropriate alarm (with light and sound) is activated indicating an error in the climb. In such situation custom settings can be chosen e.g. the operation of the automatics can be shifted manually.

Phases I, II and III are shown on Figures 2.6, 2.7 and 2.8, correspondingly.

The problem of climbing down the stairs can be divided in the same phases like the ascent but in a reverse order, due to the fact that the platform is moving in the reverse direction (i.e. the back of the seat to the stairs)

It is important to note that the stability of the system while climbing down is significantly reduced. A possible solution to this problem is by using a mechanical arm mounted on the stair holder to provide constant stability. The main problem while climbing down the stairs is that sensors of the platform can not register the edge of the stair.

If the platform has climbed the stairs and it is necessary to immediately climb down, the logic of PLC already has the dimensions of the stairs stored in its memory, thus providing climbing down to the first level without support from the mechanical arm. If, however, support from the mechanical arm is necessary, one can use it to provide bigger stability and security of the system.

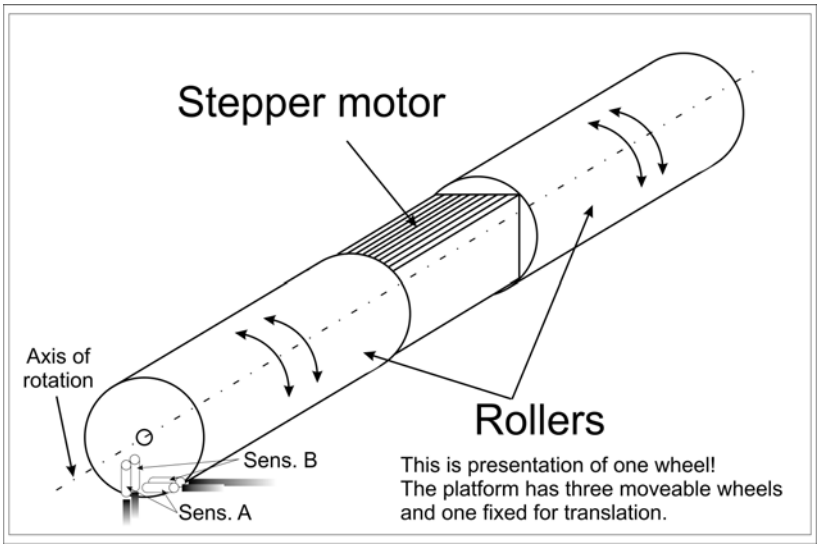

Figure 5 Platform wheel: The platform is equipped with three moveable wheels and one fixed for translation.

3. CONCLUSIONS AND FUTURE WORK

The problem of climbing up and down the stairs is many times elaborated, e.g. devices in the form of power wheel chair with caterpillars, but in spite of their efficiency and speed, their main disadvantage is the security, stability and adaptability to various types of stairs – standard and nonstandard.

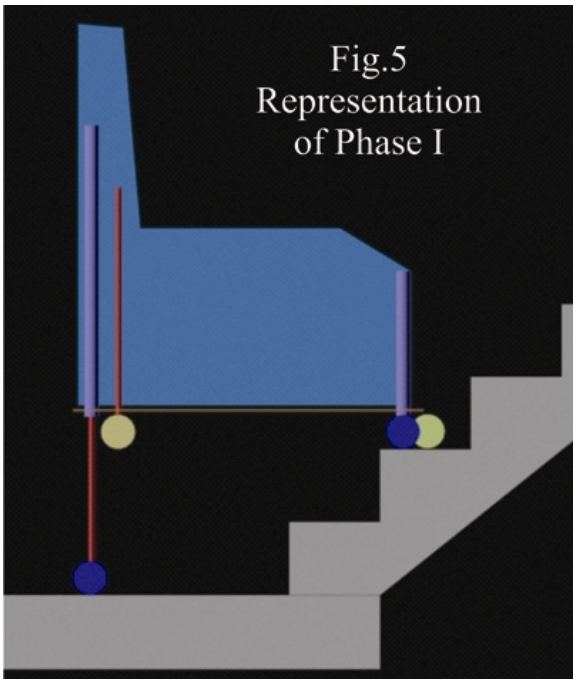

Figure 6.

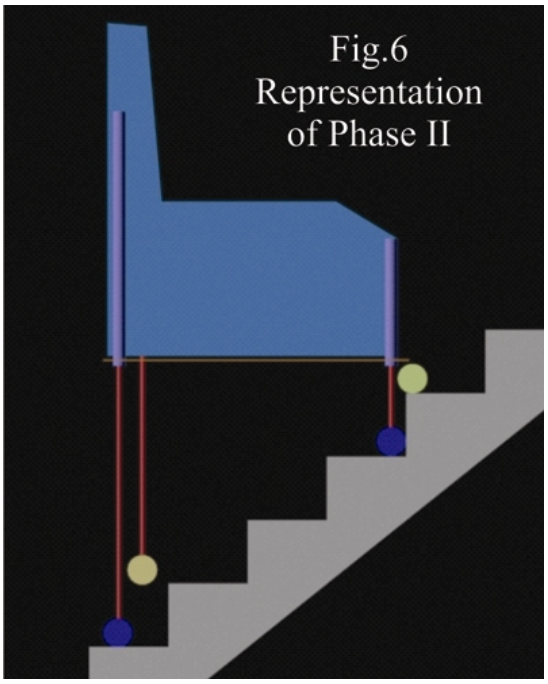

Figure 7

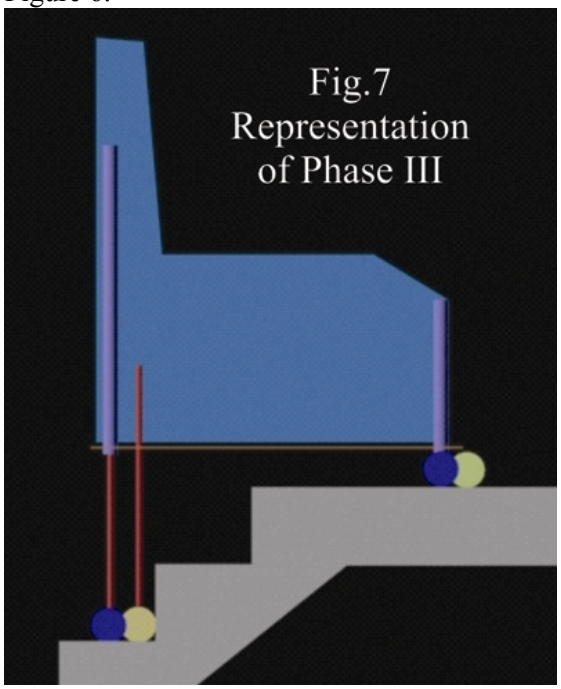

Figure 8

In addition to the increased security, stability and adaptability to various types of stairs, the advantage of the pneumatic platform compared to the power wheelchairs is the ability to carry larger loads.

With this platform we hope that in future, at least a portion of the problems the persons with disabilities face could be solved. It surely is not a simple task, but our solution could be considered as very practical, thus we really hope that one day soon it shall find its true value.

LIST OF ABBREVIATIONS/ACRONYMS

PwDs	Persons with Disabilities
PLC	Programmable Logic Controllers

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Adaptation Project for Equal Access in Architecture: Case study – Faculty of Architecture, Skopje

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Abstract[4]:

The subject of this case study is adaptation of the existing, sixty years old building of the Faculty of Architecture at the University "Ss Cyril and Methodius" in Skopje. Since it is an old building, it does not meet the standards regarding access of people with disabilities. The building is practically inaccessible from the outside, and impossible to move in the inside.

The main goal of the project is to provide equal access for everyone through the proposed adaptation of the building and make education available to people with movement and sensory disabilities. With these interventions, the possibility to become an architect becomes open for everyone.

Architecture deals with space. In the design process our objective was through those spatial interventions not only to provide equal accessibility, but to improve the quality of the space where those interventions take place. Through architectural gestures at the exterior we tried to create small social spaces: space to have a talk, space to leave the bike, space to enjoy the tree shadow, spaces that would integrate people in a social manner besides providing accessibility to the entrances of the building.

In the final project there are several solutions suggested for every position. It offers the possibility to choose the preferred one regarding different criteria (financial, social programme...) while still keeping the architectural cohesiveness of the new layer of interventions. The possibility of performing the implementation in several phases was taken into account during the design process. The implementation of the design of the facilities for people with disabilities can be prioritized, based on the available budget.

This is a first project of this kind that refers to the institution of our University with a precise goal which enables inclusion, integration of and cooperation with people with disabilities. At the end of the day, every human being should have access to all possible means in order to progress and contribute for better individual and collective good in the society. The goal of our profession, architecture, is to constantly improve the city we live in and create a city equal and accessible for everyone. No excuse shall be accepted!

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[4] For this work a poster presentation has been prepared and presented during the 6th Workshop of the AEIF Project "Ensuring Equal Access through Service learning for Persons with Disabilities".

Students' Works in the Field of Industrial Design Aimed to Improve the Life of People with Disabilities

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Abstract:

About 15 percents of the world population are people with disabilities. A great number of different kinds of physical and mental impairments make the life of these people very difficult. Designers and ergonomists have a big role in the process of improving their lives. They have to design new products and new solutions, using the latest technologies in order to develop different kinds of aids and body assists devices.
Several serious student projects were made on the theme improvement of the life for people with disabilities at the Faculty of Mechanical Engineering in Skopje. The results of the projects are presented in this paper: one project for device for patient lifting, two projects for wheelchairs, and one project for mobile phone for people with vision impairments.

Keywords: industrial design, ergonomics, hospital transport device, wheelchair

1. INTRODUCTION

The awareness that a big percentage of the world population has physical or mental disorders was a reason for adopting new regulations and standards for architectural and industrial design. Serious research of specialized teams of designers, ergonomists and other scientists and engineers work together with the intention to develop different kinds of aids and body assists devices to improve these people's life quality. It was also a motivation for redesigning of the working and living environments in order to be suitable for all people, including people with disabilities.

2. ERGONOMIC PRINCIPALS IN THE PROCESS OF DESIGN FOR PEOPLE WITH DISABILITIES

Ergonomics is a relatively young science branch, but it has a great impact in the design process. The application of ergonomics methods is strongly recommended trough regulations and standards for every kind of product. The ergonomics principals and methods are especially applied in the process of design for people with disabilities. The role of the ergonomists and designers is to find best design solutions for the people with disabilities in order to provide better working and living conditions. The results are different kinds of body assists devices and environments suitable for their physical and mental capabilities (Kroemer, K. H. E., 2006). The success of these intentions depends on the cooperation between the patients, ergonomists, medical specialists, industrial

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designers and engineers and also the application of new technologies. Evaluation of the specific impairment and anthropometric measurements of the patients, application of the proposals of medical specialists and the latest enhancements in technology leads to designing and production of special tools, equipment, prosthetic devices, transportation and other devices that improve the life quality of people with impairments.

3. STUDENT PROJECTS OF INNOVATIVE PRODUCTS FOR IMPROVING THE LIFE OF PEOPLE WITH DISABILITIES

The studies on industrial design at the Faculty of Mechanical Engineering in Skopje are active since 2004. For almost nine years hundreds of students have been receiving knowledge on how to design products that would make better working and living conditions for all people.

Several students in the last few years worked on designing projects for special devices for people with disabilities. Some of them are presented in this paper: device for patient lifting, design of wheelchair for home use for children with cerebral palsy, power wheelchair with mechanism for lifting and mobile phone for people with vision impairments.

3.1. Device for patient lifting

One of the most difficult tasks for the medical staff in the hospitals is taking care for the patients in coma or patients with serious locomotion problems. . There are many methods for moving these patients in order to perform hygienic procedures, change of clothing and garments. Most of these methods require two or more people and their own power to finish the task, and they very often suffer of back pains and other musculoskeletal disorders. There are several devices in use in the hospitals for the same purpose, but not sophisticated enough.

Fig. 3.1.1 3D views of device for patient lifting and transportaion

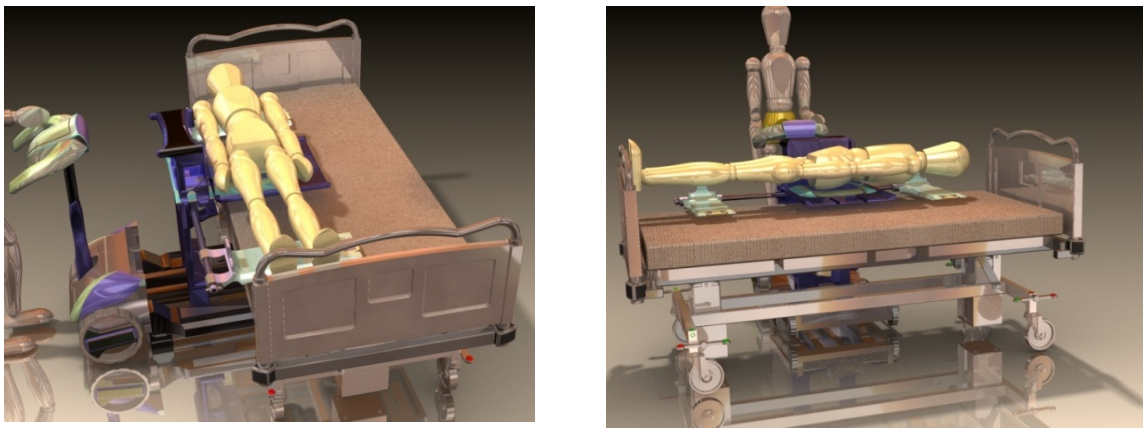


Fig. 3.1.2 Easy manipulation staff – device – patient

The intention of the student Igor Ivanovski with his the diploma work was to solve the problem of lifting patients. He made an innovative design of a device that could be used for lifting a patient in horizontal position and for his transportation in horizontal or seating position (3.1.1). The hospital staff could use the device for lifting a patient in order to make necessary hygienic procedures (fig. 3.1.2) or for moving the patient from the hospital transport bed to the hospital or operation bed and vice versa (fig. 3.1.3). The same device could be used for transportation of the patient in a seated position, as a wheelchair, with possibility of moving up and down in order to put him in a pool and to take him out of a pool (Fig. 3.1.4).

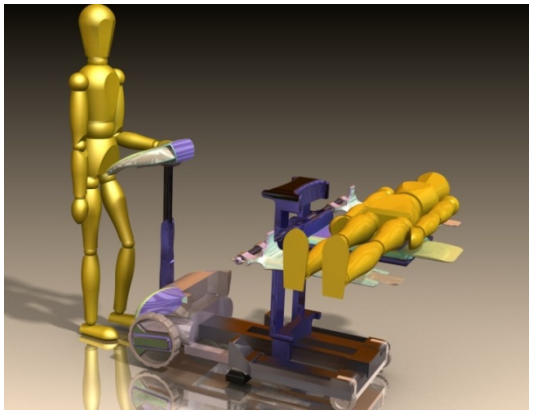


Fig. 3.1.3 Transportation of the patient in horizontal position

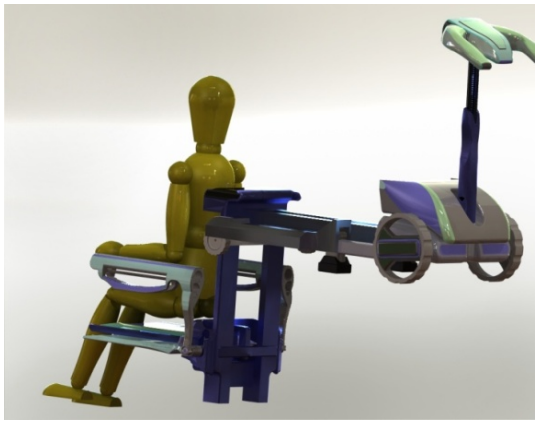


Fig. 3.1.4 Transportation of the patient in sitting position

The device is designed to work on a forklift principal. The fork is a part of the device that moves up and down, back and forth. It is consisted of three parts - arms that could be arranged according to the patient's anthropometry in order to be easily put under the patient in the bed: one arm under his neck, second arm under his back and third arm under his knees. These three arms are designed to be strong enough to obtain safe lifting and transport of the patient in horizontal position. The same arms could be arranged very close to each other in order to make a seat for transportation in a seated position (fig. 3.1.2).

The presented lifting device is powered by electrical engine and equipped with contemporary user interface devices. It is expected to be very easy for manipulation for the stuff and safe for the patient.

3.2. Wheelchair for home use for children with cerebral palsy

The student Brankica Mitrovikj made a design of a wheelchair for home use for children with cerebral palsy. After a considerable evaluation of the medical literature for this disease and the market research for wheelchairs that are produced worldwide, she decided to make a design for home use that will make the life of these children more cheerful and lively. She decided to make a wheelchair with the following characteristics:

- look like a part of the home furniture;
- be produced of wood, textile and other materials for manufacturing home furniture;
- be dimensionally adaptable for following the child body changes according to its age;
- have an additional equipment for performing different activities;
- be adaptable for active and relaxed sitting;
- be easily manageable for the accompanying person.

The result was a chair with wheels for use only at home, with many adjustable parts (fig. 3.2.1) for following the changes in body dimensions: footrests, armrests, backrest, headrest etc. The ranges of adjustability were determined with an analysis of anthropometric measurements for children of different ages (Tilley, A. R. and Henry Dreyfuss Associates, 2002).

Because of the fact that these children are almost all day in the wheelchair there is a need of extra accessories for performing everyday activities. The presented wheelchair is designed with additional table (fig. 3.2.2) that could be easy and safely positioned on the chair's armrests as equipment for having lunch, drawing, playing with toys, computer work, etc.

The seat is designed with a possibility to change the angle of the backrest in order to obtain relaxed position. The child could be positioned on the seat with extra equipment as a medical treatment for the posture. The special handles on the backrest are designed for manipulation by the accompanying person who takes care of the child (fig. 3.2.2).

The design of the wheelchair is suitable for children, with organic shapes and possibility for selection of cheerful colors. The main intention of the design is to obtain good feelings for the children with difficult health problems.

Fig. 3.2.1 Wheelchair in position for seating

Fig. 3.2.2 Wheelchair with table for working, drawing, playing

3.3. Power wheelchair for outdoor use with a lifting mechanism

The student Aleksandra Sharanovikj in her diploma work made a design concept of power chair with mechanism for lifting the patient in vertical posture. The wheelchair is an important device for people with locomotion disorders. For most of them this device is replacement of walking and the only way for performing their everyday activities. Several kinds of wheelchairs are available on the market. There are a lot of manufacturers worldwide for producing of wheelchairs for inside or outside use, manually or electrically powered.
The basic idea for this diploma work was to design a power wheelchair that will improve the quality of life of people with locomotion disorders. The intention was to design a wheelchair that will have more enthusiastic, sport spirit, easily manageable, strong enough to solve the architectural barriers (fig. 3.3.1, 3.3.2). One of the most important qualities is the possibility to lift the patient in a vertical position in order to obtain equal posture level with other people. This kind of wheelchair would upgrade the working possibilities and enable maximum independence of the user, both for inside and outside use.

In order to meet the needs of the users, the wheelchair is designed to be adjustable on several ways:

- adjustable backrest in order to obtain normal (fig. 3.3.3) and relaxed position (fig. 3.3.4);

- adjustable seat in order to obtain adjustability of height, according to the anthropometry of the user (fig.3.3.5);
- adjustable mechanism for seat lifting in order to obtain the patient position on the same level with other standing people around him (fig.3.3.6).

Fig.3.3.1 Front view of the wheelchair

Fig.3.3.2 3D view of the chair

Fig. 3.3.3 Normal wheelchair position

Fig.3.3.4 Backrest in relaxed position

Fig.3.3.5 Elevated position of the seat

Fig.3.3.6 Position for lifting a patient

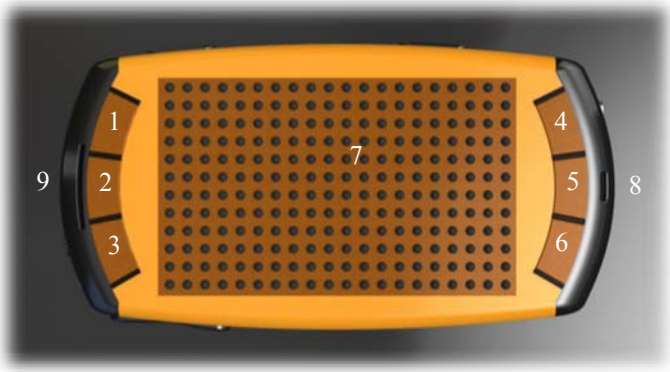
3.4. Mobile phone for people with vision perception impairment

The student Filip Dimovski made a concept design of a mobile phone BRACELL for visually impaired people that use Braille. The usual mobile phones are adapted for people with visual impairments with a tactile element on the keyboard for orientation, but only for typing, reading is impossible. The mobile phones with touch screens are totally unusable for these people.

The student made a short research on the similar products at the market that are already in use. There are several devices for input and reading texts that use tactile writing system Braille, but they have serious problems. Most of the problems are:

- very complex for use;
- very expensive;
- the design is not ergonomic;
- equipped with complex software system, that requires processing of big amount of information.

Having in mind all these problems, the student Filip Dimovski decided to make a concept of a mobile phone and pocket computer for people with visual impairments. The BRACELL concept is designed for reading and writing messages with Braille signs. The concept name BRACELL is a mix of the terms Braille and cell phone.



1-6 buttons for input of Braille signs
7 screen with mechanical dot matrix
8 microphone
9 speaker
10 buttons for sound settings
11 headphone port

Fig. 3.4.1 Front view

Fig.3.4.2 Back view

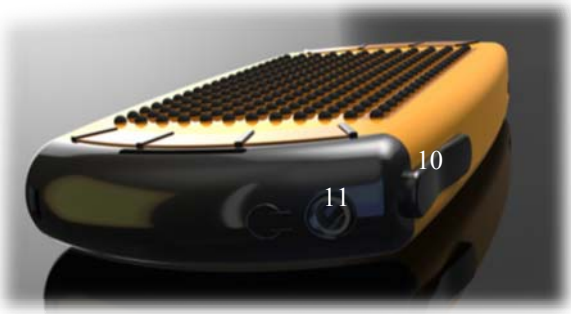


Fig.3.4.3 View from the side view

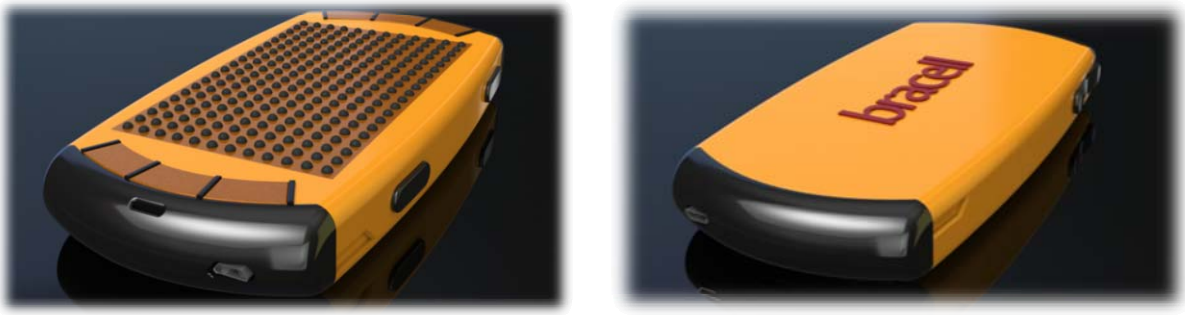


Fig. 3.4.4 3D views of Bracell concept design

- The screen for reading messages is a matrix of mechanical dots that could move up and down across the flat surface of the front side of the phone in order to present different Braille sign (fig. 3.4.1). The signs could be recognized by the user when he moves his fingers across the screen. Each sign is consisted of 2 rows with 3 dots. The screen is designed for presenting a text in 4 rows with 10 signs per row.
- The input of Braille signs is performed using six buttons with dimensions of a thumb (1,4 mm^2). There are positions on the left and right side of the front surface of the phone (fig. 3.4.1) and could be used with the pressure of both left and right thumbs. Beside the buttons on the left side there is a speaker device and on the right side there is a microphone. For every specific operation with the device, there is an appropriate audio effect as feedback for the user.
- There are other two buttons on the opposite side, reserved for adjusting of sound (fig. 3.4.3).
- The dimensions of the device are relatively small: 120 x 60 x 12 mm, suitable for a pocket.
- The shape is simple thin box with rounded edges, designed to be comfortable for handling and manipulation.
- It could be produced of ABS in order to be impact and crash resistible. The side surfaces have to be produced of soft material, like silicone or rubber, in order to avoid slipping.
- The color of the surfaces has to be easily visible, very intensive (yellow, red, orange, green), because some of the users have only partial visual impairment. The buttons have to be with contrast color, for example black or dark blue.
- The presented mobile phone concept is designed according to the GSM standards, with standard lithium battery and a usual SIM card.

4. RESULTS AND DISCUSSION

The presented designs are attempts of the young designers to make innovative designs for solving some of the problems of the people with impairments that make the lives of these people very difficult. Most of them strive to live normal life without pains, comfortable for performing everyday activities to live equally well.

The first step of the designers was problem recognition of particular impairment, physical disorder. The best way for the designer to recognize the possible solution is trough interviews with the patients and their doctors, therapists. The patients often have an idea what kind of device they need and what kind of problems they could solve with its application. On the other hand, the therapists have methods for improving the patient's physical condition.

The second step was a research of contemporary solutions and devices for solving similar problems. They made an analysis of their positive and negative features, used technology and materials, application of standards and ergonomic rules.

Finally, after a considerable research, designers made a list of requirements for the design of the device that should be the solution for the specific problem. Knowledge about new technologies is always a great inspiration on the way of the specific problems solving.

All of the students made a lot of sketches, concepts, in order to reach the final solution. The last step was virtual creation of the selected concept using contemporary software packages. Virtual models were examined using special software for virtual ergonomics. But, it's not enough. The best way to find out the results of the design process is trough prototypes. Our next step will be to make real models of the designed products and evaluation of their functionality.

5. CONCLUSIONS AND FUTURE WORK

Maybe the presented design concepts are not the best solutions for appropriate problems, but they are result of a serious research. Each of them could be used as initial points for development of new

products that could be offered on the market for the people with specific impairments as target groups.

Our intention in the future is to follow these steps. We will try to make cooperation with specific companies for production of aids for people with different physical disorders and impairments. The students will work on real design problems and they will try to make new and innovative design solutions. Some of them will make serious ergonomic researches, and evaluations of virtual designed products using virtual software tools. All of the products will be finished as prototypes and offered to the users for real evaluation. We hope that some of the designed products of our students will be on the market in the future.

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From Arts and Design through Service Learning to Persons with Disabilities

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Abstract[3]:

Upon the invitation of assistant professor Ana Lazarevska and assistant professor Roza Aceska and under the mentorship of assistant professor Ladislav Cvetkovski the students in the 4th year at the Department of Graphic Design at the Faculty of Fine Arts, University of "Ss Cyril and Methodiu,s" Skopje, took part in the project Equal Access through Service Learning for Persons with Disabilities.

During the first stage, the students were introduced to the project objectives and goals. Assistant professor Ana Lazarevska and assistant professor Roza Aceska organized a presentation at the Graphic Design atelier within the Faculty of Fine Arts when the students were introduced to the activities of other participants involved in the project. They also explained in details the problems persons with special needs are facing within our society, in particular focusing on the situation within the educational system and its readiness to accept this category of population on equal basis.

Following the presentation, there was a discussion when uncertainties in view of the ways the students could participate in the project were cleared.

As a result, the 4th year students attending the Graphic Design studies within the Faculty of Fine Arts in Skopje received an assignment on this topic by assistant professor Ladislav Cvetkovski within the ***course of Design of book and other publications****. They were supposed to consider over and give their suggestions on two pages (spread) design that may both be developed in the form of a billboard and/or a poster. Classes were dedicated for that purpose during which there were various discussions on the issues of identifying the exact problems to be commented by this design.*

The third stage involved presentation of sketches made by the students. Each student offered an explanation on his /her sketches. During the discussion a first selection was made, and the way of implementing the idea.

The fourth stage consisted of individual implementation of the idea into a concrete design. Each student was assigned to prepare his/her own sketch(es). The complete implementation stage was supervised and conducted under consultations of assistant professor Ladislav Cvetkovski. Prior to reaching the final design creation, the students presented their design, this time in its final stage, and during the discussion with their fellow colleagues verified if the design should be changed somehow or stay as it was.

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[3] For this work a series of poster presentations have been prepared and presented during the 5th Workshop of the AEIF Project "Ensuring Equal Access through Service learning for Persons with Disabilities".

The design was printed and presented on 12 May 2012 during the final exhibition of the Faculty of Fine Arts at the Graphic Design ateliers in Suli An. This was the first presentation of students' works in public and it was an opportunity for the students to see the audience reaction to the design they created.

Taking into consideration the previous discussions between the students and the professor and the public presentation of the completed works, it was concluded that the design should be placed in visible locations for the passersby to see and read the messages sent by the young designers. Thus, a much better effect would be achieved in informing the citizens on the problems persons with special needs are facing with and how each individual could contribute to their being accepted as equal members of the society.

Yet another achievement of students' participation has been the positive change in their perception of the issue, as well as their enabling to adequately and better visually articulate the personal attitude towards the problems in everyday life and society.

Keywords: design, fine arts, service learning.

Improvement of the Life Quality of Children with Cerebral Palsy – Design of Specialized Wheelchair

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Abstract:

Cerebral palsy is a very complex disability. It is incurable, continuous, and it can change its form over time. The children born with cerebral palsy have to live all their lives dealing with it. There is no cure, but there are many ways for making their everyday lives easier and more comfortable. In this paper, we present our design solution for wheelchair that can improve the lives of these children.

Children outgrow very fast their wheelchair which by themselves are not very cheap to buy and that is an additional problem to their parents. In order to meet the needs of these children, we propose a model of adjustable modular wheelchair. Using ergonomic methods and appropriate anthropometric analysis of children we established the ranges of adjustable dimensions for a seat for children of age between 7 and 14 years. According to these dimensions and using the principle of modularity, the model of a seat is designed to be adjustable in several dimensions: seat height, backrest height, headrest height, armrests height and distance and footrests height and distance. The principle of modularity is also applied in the possibility to place the seat on different driving structures.

Keywords: cerebral palsy, disability, ergonomics, modularity, wheelchair.

1. INTRODUCTION – CEREBRAL PALSY

Cerebral palsy is a result of brain injury which produces impairments of the locomotion system, balance and coordination of the body. This condition is permanent, but not unchangeable. It can also cause hearing, talking or visual impairment, and different degree of mental retardation. Most of the patients with cerebral palsy have different kinds of spasms in the body. Almost all of them are characterized with individual physical and intellectual conditions. Every patient has to be treated with different type of medical treatment.

One of the most important treatments is positioning the patient's body in stable and regular posture. This is possible with a special seat with accessories for stabilization of the patient's body. In most of the cases, these treatments are very successful. Because of this fact, the design of the seat is of a great importance for these patients. On the other hand, the fact is that these children are growing up from their birth until the end of teenage, so they often need to change the seat. . This is a big economic problem for their families.

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1.1. Characteristics of children with cerebral palsy

Cerebral palsy is determent by few forms: spastic, athetoid, ataxic.
Most of the children with cerebral palsy have its spastic form, whereas the diplegic group is smallest. 25-80% of these children have additional disorders, such as cognitive impairment. Less than half of the children from hemiplegic and quadriplegic groups have epilepsy. 80% of the children have speaking problems and impaired visual activity. Other problems that can be seen with these children are problems with the behavior, problems with the nutrition, slower overall growth and weak physical appearance.

1.2. Needs of children with cerebral palsy

Children with cerebral palsy can be just roughly classified in one or another group, but the truth is that every one of them is different depending on the type and severity of the deformations.
Main users of these wheelchairs are children with cerebral palsy among 7 and 14 years. So the requirements of the wheelchair are based on these children's needs. Main input on the needs of children with cerebral palsy was given by the Orthopedic and prosthetic center Slavej.
Needs of children with cerebral palsy for a wheelchair are:

- Reliable wheelchair,
- Durable wheelchair,
- Comfortable seat,
- Seat with adjustable height,
- Seat with adjustable depth,
- Adjustable backrest,
- Spine support,
- Head support,
- Head support with adjustable height,
- Head support with adjustable width,
- Side supports,
- Leg support,
- Feet support,
- Table,
- Place for bags and additional elements,
- Various colors,
- Additional elements for play and fun,
- Affordable price.

2. AN ATTEMPT TO MEET THE NEEDS OF CHILDREN WITH CEREBRAL PALSY

During the conducted research with the Orthopedic and Prosthetic Center Slavej AD within the frames of our research, we came to a conclusion, that the main problem with the wheelchair for children with cerebral palsy is that they are not flexible enough and they are too expensive. Following this problem and the problem of uniqueness of every child, we made a proposal as the best possible solution to create a concept of modular wheelchair, built of many modular parts which can be easily replaced and combined.

At the beginning, we established the target group of users: children with cerebral palsy at the age between 7 and 14 years. We defined that the main purpose of the wheelchair is performing as much activities as possible for children with cerebral palsy. The main goal of the proposed idea for modular wheelchair is improving the life of the children with cerebral palsy.

In order to provide the best solution, we made several surveys: survey of the market requirements, anthropometric survey of the target group, survey of the ergonomic requirements.

There are many kinds and types of wheelchairs with different driving systems and different purposes on the market. According to the experience of the staff of the Orthopedic and Prosthetic Center "Slavej" AD and the medical stuff of the Orthopedic Department at the Faculty of Medicine in Skopje, we established the design requirements on the base of three different aspects:

Medical requirements:
- the wheelchair should provide firm posture of the spine;
- the angle between the body and lower limbs must be 90^0;
- the head must have support for obtaining proper position;

- the seat must be soft in order to avoid wounds;
- possibility to add medical treatment accessories;
- dimensions of the seat must be appropriate for the child's dimensions.

Customer requirements:
- low price;
- low weight;
- easy to use;
- easy to put in vehicle;
- easy to change positions;
- easy to dissemble;
- comfortable enough for all day seating;
- possible to use it in different spaces;
- suitable for performing as much activities as possible;
- good and pleasant design;
- possibility to buy and add different accessories for everyday tasks;
- long exploitation period ;
- possibility to change parts in a case of damaging .

Manufacturer requirements:
- low production price;
- low market price;
- modular parts for better and easier reparation;
- modular accessories for extra activities which could be sold separately.

2.1. Ergonomic requirements

As a result of the anthropometric survey, we decided to apply the principle of adjustability in order to design a seat that could be adapted according to the needs of the patients. Due to the changes of the child's body during the childhood, there is a necessity for more space on the seat, and additional adjustments. In order to solve the problem of wheelchair design, we applied two main design principles: the principle of modularity and the principle of adjustability.

We established ergonomic requirements for the wheelchair and the seat.

Ergonomic requirements for the wheelchair:

- possibility to change the driving system:
    - for use at open space - manual system with big wheels or electrical one;
    - for use at home – system with small wheels with appearance like home furniture;
- possibility for having of storage space;
- good suspension system;
- adjustable handles for companion's manipulation.

Ergonomic requirements for the seat:

- the angle between seat and backrest must be 90^0 (usual active position);
- possibility to change the angle of the backrest in order to provide rest position (90^0-120^0);
- possibility to be transformed into support for standing (rotation of the seating surface into vertical position) ;
- armrests for placing the arms in rest position;
- support from both sides of the chests for providing vertical position of the spine;
- foot support for stabilization of the body;
- additional support for legs for stabilization of the body in standing position;
- additional support between the legs of the patient to prevent spasms;
- headrest with special shape as a support for obtaining proper position of the head;
- soft in order to avoid wounds;

– the dimensions of the seat must be appropriate for the child's dimensions.

Additional requirements:

– possibility to install small table for performing different activities: writing, drawing, having a meal, working on computer etc.;
– possibility to install additional medical equipment.

The initial concept for the wheelchair was to create a wheelchair for indoor use. Having that decided, we thought that it will be very nice to try and incorporate this wheelchair with the rest of the home furniture. Since the dimensions of the wheelchair are much bigger than the dimensions of normal chair we decided to try at least with the same materials, so we used wood. The decision to use wood was a good move because the wood gives much more pleasant feeling than metal, a material which is commonly used.

3. DESIGN CONCEPT

Subsequently, in a few pictures, a detailed concept of the modular wheelchair is presented. As shown on the figures 2.1 and 2.2, all the supports can be mounted on different heights and distances, so it can be used on wide range of children.

For using of the wheelchair as support for upright positioning of the child, the seat is tilted for 90 degrees and the backrest is pulled up for its maximum height. For improved balance in the back, two legs are mounted.

3.1. Concept of a modular wheelchair

The principal of modularity is applied to the main concept, where we propose the wheelchair to be consisted of two main parts: seat and driving structure. We propose three different driving structures: manual with big wheels for outside use, manual with small wheels for inside use, and electrical one. The seat has to obtain maximum comfort for the patient. It is independent part that could be placed on any of these structures, and it could be also placed on the back seat in any vehicle.

Driving system for outdoor use could be manual or electrical (fig. 3.1). Driving system for indoor use is usually manual (fig. 3.2). The design of the whole wheelchair for indoor use should be adapted to the home ambient. This is especially important for the children from a psychological viewpoint.

Figure 3.1. Seat with a driving system for outdoor use

Figure 3.2. Seat with a driving system for indoor use

3.2. Concept of adjustable seat

Both principles, the principle of modularity and the principle of adjustability, are applied to the concept of the seat. In order to follow the changes of children dimensions during their childhood, we propose a design of a modular seat with several adjustable parts: seat, backrest, headrest, armrests and footrests. All of these parts could be adjusted according to the child's dimensions. The other advantage of the applied modularity is the possibility to replace parts because of changes in medical treatment, damaging or because of a necessity for better one.

The other advantage of the modular adjustable seat is the possibility to be transformed into a device for supporting the standing of the disabled child (fig. 3.4). The best fit of the seat for performing this function is in combination with the driving system for indoors use, because it is usually performed in home environment.

The seating surface must be with a maximum width and maximum depth. In order to follow the dimensions of smaller patients, the width could be adjusted with armrests position and the depth could be adjusted with backrest position.

The seating surface could be rotated around the axis in the back edge in order to achieve vertical position for obtaining standing position of the patient.

The foot rest must be adjustable along the distance between the set surface and lower foot surface and also the grips for legs.

The armrests must be adjustable in vertical and horizontal direction in order to adjust the width of the seat. Headrest must be adjustable in vertical direction.

3.3. Additional equipment

The principal of modularity and adjustability is also applied to the possibility to obtain extra accessories for performing different tasks: having a meal, writing, drawing, playing, using a computer, standing, etc. (fig. 3.3). Sometimes, there is a need to put additional medical accessories for obtaining stable posture. The advantage is possibility for the users to supply them according to their needs.

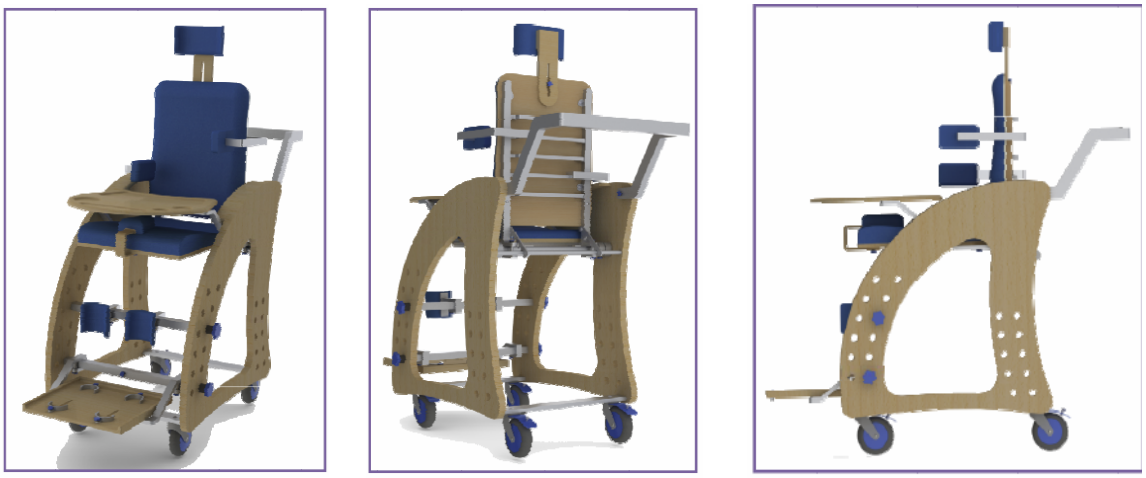

Figure 3.3. Modular wheelchair in position for seating

Figure 3.4. Modular wheelchair in upright position for standing

4. DESIGN ANALYSIS

At the end of the design process an evaluation of the final design was conducted. The best way to make evaluation is trough real model, prototype. But, there are many contemporary software products with virtual mannequins, used mostly in automotive design. We used the software module Human Builder of CATIA to do an appropriate analysis.

In order to provide proper analysis, we had to pass several steps: selecting appropriate mannequins for the patients and companion person, selecting body positions for evaluation, performing measurements and summarizing results.

The first evaluation was performed to verify the wheelchair comfort for a child, aged 7. The 3D model of the wheelchair was adjusted for the user of age 7. The virtual mannequin representing child aged 7 was placed on the seat of a wheelchair, adjusted in the position for seating (figure 3.5 a,b). The same mannequin was placed on the wheelchair adjusted in the position for standing (figure 3.5c).

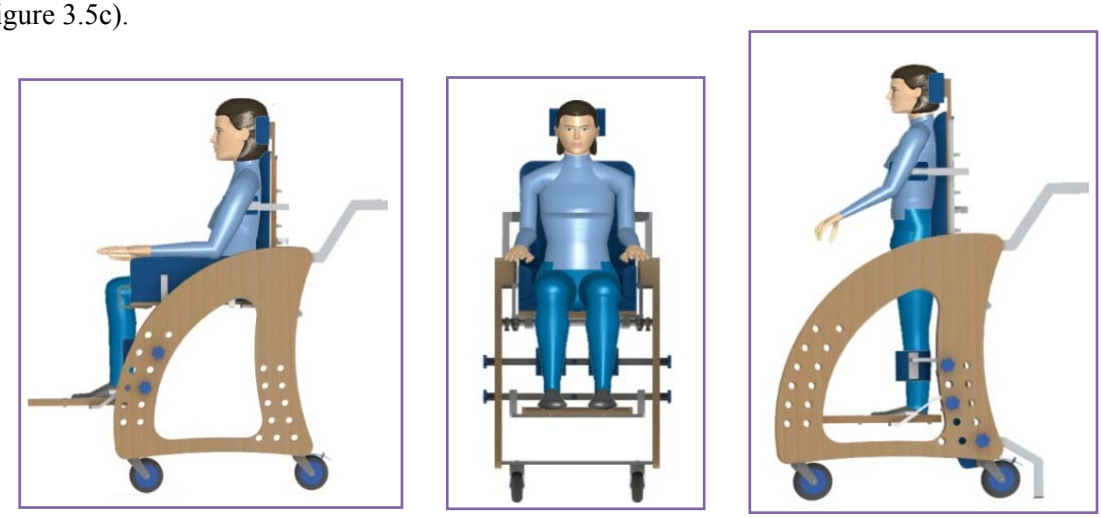

Figure 3.5. Evaluation of a wheelchair adjusted for seating of child aged 7

The second evaluation was performed to verify the wheelchair comfort for child, aged 14. The 3D model of the wheelchair was adjusted for the user of age 14. The virtual mannequin representing a child of age 14 was placed on the seat of a wheelchair adjusted in the position for seating (figure

3.6 a,b). The same mannequin was placed on the wheelchair adjusted in the position for standing (figure 3.6 c).

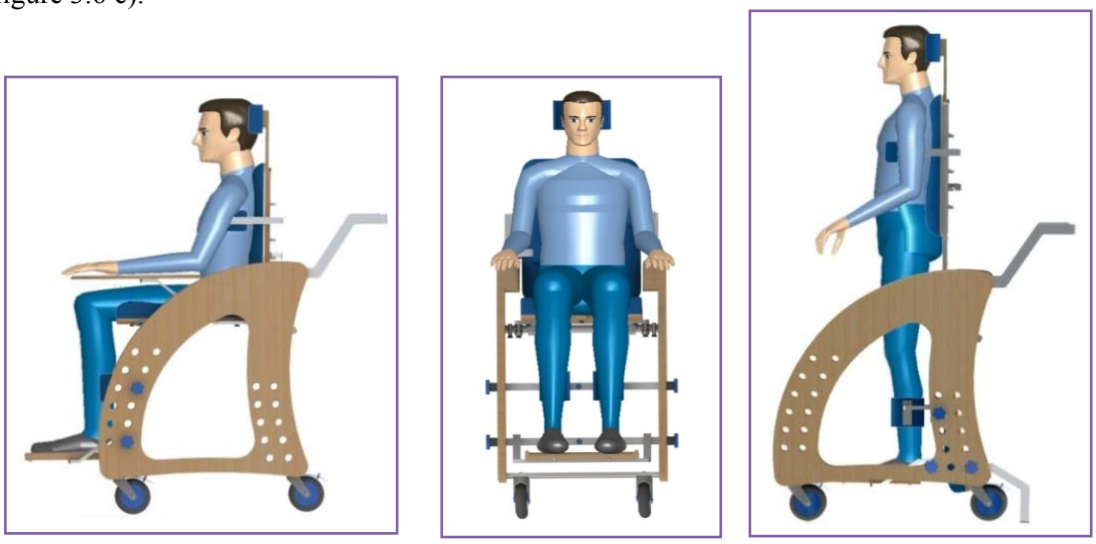

Figure 3.6. Evaluation of a wheelchair adjusted for seating of child of age 14

The third evaluation was performed to verify the zones of convenient reach for the child of age 7 in a seated position. The virtual mannequin representing a child of age 7 was placed on the seat of a wheelchair with arms in rising position in order to catch something around (figure 3.7). The same evaluation was performed to verify the zones of convenient reach for the child of age 14 in a seated position with arms in rising position in order to reach something (figure 3.8).

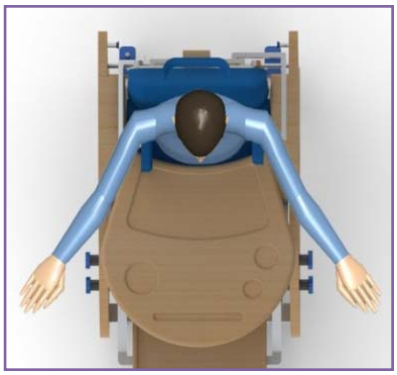

Figure 3.7. Zones of convenient reach for children of age 7

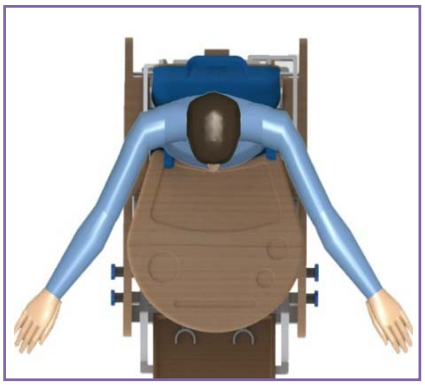

Figure 3.8 Zones of convenient reach for children of age 14

5. CONCLUSION

Satisfying the needs of children with cerebral palsy is a really difficult job. But the thought of the effort to make even the slightest change in the life of these children is the driving force hard enough to keep you moving. The concept of the wheelchair is just a 3D model, but with all the analysis conducted and with positive results. The next step is to make a real size prototype and to conduct analysis on it.

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Improvement of the Quality of Education for Persons with Disabilities through Using Assistive Information Technology in the Primary Education

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Abstract:

The legal system in the Republic of Macedonia should provide for right to inclusive education of persons with disabilities at all levels of the educational system on equal basis with others. However, the practice shows that people with disabilities have lower level of participation and achievements in all phases of the education. One of the reasons is the lack of conditions and opportunities for mainstream education and lack of providing of reasonable accommodation; one of them being assistive information technology for pupils with disabilities. The desk research of this paper builds upon the results from the project "Equal Access for Equal Opportunities", implemented by the civil society organisation "Open the windows" in the period 2010-2012 and funded by USAID. Namely, the experiences of the 21 regular primary schools that introduced assistive information technology in teaching of pupils with disabilities were the source of the assessment. It can be concluded that the assistive technology impacts on improving the inclusiveness of the educational process and contributes in increasing of the educational opportunities of pupils with disabilities. Furthermore, the use of assistive technology can facilitate the development and application of individual education plans for these pupils. Finally, involvement of all relevant actors can ease the process, especially the co-operation between teachers and parents, as well as the inclusiveness of schools in general.

Keywords: assistive information technology, persons with disabilities, primary education, UN Convention on the Rights of Persons with Disabilities (UN CRPD).

1. INTRODUCTION

The UN Convention on the Rights of Persons with Disabilities (UN CRPD) [2] provides for protection and ensuring the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities, while promoting respect for their inherent dignity. One of the substantive articles in the CRPD is Article 24 that provides for right to inclusive education of persons with disabilities at all levels of the educational system without discrimination and on equal

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[2] See: UN Convention on the Rights of Persons with Disabilities, UN Doc. A/RES/61/611 (December 13, 2006); http://www.un.org/esa/socdev/enable/rights/convtexte.htm. More information regarding the UN CRPD see: *inter alia* Kumpuvuori, J., Scheinin, M., (eds.), *United Nations Convention on the Rights of persons with Disabilities – Multidisciplinary Perspectives*, Finland, (2010); Quinn, G., Arnardottir, O.M., *The UN Convention on the Rights of Persons with Disabilities: European and Scandinavian Perspective*, Boston – Leiden, (2009); Kayess, R., French, P., *Out of Darkness into Light? Introducing the Convention on the Rights of Persons with Disabilities,* in Human Rights Law Review, (2008), pp.1-34; Lawson, A., *The United Nations Convention on the Rights of Persons with Disabilities: New Era or False Down?,* 34 Syracuse Journal of International Law and Commerce, 563, (2007), pp.590-616. Also see: Poposka, Z., *Disability Discrimination in International Human Rights Law*, doctoral thesis, University Ss.Cyril and Methodius, Law Faculty "Justinianus Primus", (June 2012), pp.123-138.

basis with others[3]. The Republic of Macedonia ratified the UN CRPD and its Optional Protocol on 5 December 2011[4] without any reservations and now these two legal documents are part of the national legal order.

This is the standard that the country should aim to achieve and even though provided in the legislation, the practice shows a different picture. Namely, people with disabilities in the Republic of Macedonia have lower level of participation and achievements in all phases of the educational process. Reports from the national Ombudsman Institution[5] shows that: children with disabilities included in regular primary education often do not complete their primary education, but are studying a few years, and after some children continue their education in special schools and some drop out from school. Most common reason of premature drop out from primary education is the demand of parents for their child to stop schooling, but a large number of children left education because of their deteriorated health and lack of conditions and opportunities for further education in the mainstream educational system. Also, some children leave the regular education because of other school mates, teachers' resistance or unacceptance by other schools mates' parents' resistance pupils.[6] Especially vulnerable category are persons with mental disability. Namely, the researches shows that 31,4% of respondents believe that people with mental disabilities are the most discriminated in the education. Persons with other types of disabilities, especially persons with physical disability are far more accepted by the society (14,7%).[7]

2. OVERVIEW OF THE NATIONAL LEGISLATION IN THE AREA OF PRIMARY EDUCATION FOR PERSONS WITH DISABILITIES

In Article 44 from the Constitution of the Republic of Macedonia[8] it is stated that anyone has right to education, and the same is compulsory and free of charge. In addition, the Article 6 from the Law on primary education[9] is stipulating that for children with disability (in the law referred to as: children with special educational needs) special conditions for acquisition of primary education in mainstream and special schools are provided and they have the right to individualized assistance for the acquisition of elementary education and upbringing. If this article is read in conjunction with Article 10 paragraph 3 which states that "primary education for pupils with special educational needs are organized and carried in special schools and special classes in regular schools" will come to the conclusion that the inclusion of these children is only declarative and that in fact the aim of the legislator is not educating children with disabilities along with other children who have not disabilities in the same classes, but their subtle segregation.[10] Where will the child with special educational needs obtain his education depends largely on the choice of the parent, i.e. the parent has the right to enroll his child with special educational needs in the mainstream educational system, "except in cases of special educational needs of the child are such that he should be enrolled in special primary schools" (Article 51 paragraph 1). Should that be mentioned,,

[3] Fundamental elements of this article are the principle of non-discrimination and developing common educational environment that ensures the presence, participation and development of people with disabilities, which itself requires a reasonable accommodation. The whole text of the Article 24 is specified in Annex 1 to this paper.

[4] According to Article 118 of the Constitution of the Republic of Macedonia, ratified international treaties are part of the national legal system and can not be changed by law. In other words, the provisions of the UN CRPD are directly applicable, including its Article 24. See: Constitution of the Republic of Macedonia, *Official Gazette of RM, No.52/1991*, (November 22, 1991); http://www.slvesnik.com.mk.

[5] See: Special report of the Ombudsman on inclusion of children with special needs in the education, (October 2006);http://www.ombudsman.mk/comp_includes/webdata/documents/Posebni %20potrebi%20na%20decata1%20 -mk.pdf.

[6] *Ibid.*

[7] See: Simoska, E., Gaber, N., Jovevska, A., Atanasov, P., Babunski, K., *Research project: How inclusive is the Macedonian society, Foundation Institute Open Society – Macedonia,* (2008), pp.51; http://www.soros.org.mk.

[8] See: *supra* note 4 Constitution of the Republic of Macedonia.

[9] See: Law on primary education, *Official Gazette of RM, No. 103/2008, 53/2010, 116/2010, 156/2010, 18/2011* and *51/2011*; http://www.slvesnik.com.mk and http://www.mon.gov.mk.

[10] See: Poposka, Z, *.Status quo analysis on disability discrimination in the legal system of the Republic of Macedonia (with comparative overview of the international standards in this area)*, paper developed for the project "Equal Access through Service Learning for Persons with Disabilities", (2012), pp.19.

in practice this exception should always be individualized, and should not be used to exclude *a priori* the whole group of persons with certain disabilities, from all or part of the educational process.

Furthermore, the Law provides that realization of the educational activity with the pupils with special educational needs is organized through special curricula and programmes, tailored to their special educational needs (Article 30). These adjusted curricula and programmes should be of equal quality as those used for the education of children without disabilities.[11] In addition, Article 42 paragraph 9 from the Law on primary education provides for possibility to hire a person with a completed degree in special education to help the teacher in classes where there are enrolled pupils with special educational needs. However, as long this is a possibility and not an obligation for the schools, the same will not be fully respected, leaving the children with disabilities and teachers in schools without adequate assistance in implementation of the process of inclusion. All these problems in the education of children with disabilities that often result in discriminatory practices are outlined in the Special report of the Ombudsman on inclusion of children with special needs in education from 2006[12]. Namely, the report notes that "in the practical application of the legal provisions there are a lot of problems and obstacles that do not allow for providing adequate and equal access for children with disabilities, and due to this, often these children are discriminated when using their right to education".

An additional problem arises due to the inaccessibility of the educational facilities for persons with disabilities. Given that primary and secondary education is compulsory for all and only a small number of schools are accessible[13], dilemma exists about the real enforceability of this legal obligation. Also a problem is the inaccessibility of the digital space, i.e. inaccessible information and communication systems that instead of being a tool to improve inclusion of persons with disabilities in the educational process, become an additional obstacle. Let us illustrate this with one example.[14] Namely, from 238 analyzed primary schools in total, 74,3% schools are using computers in the educational process, however only 40,8% from the pupils with disabilities are using computer on equal basis with others pupils due to unadjusted computer tools (assistive devices) and software adjustments. In addition, vast majority of schools (88.7%) feel that students with special educational needs can benefit from using computers, especially in: mastering the educational programme/curricula; increasing the sense of self-confidence; improving their inclusion in the instruction and their school community; developing their cognitive functions; and improving their motor skills.

Having said that, according to the Law the educational institutions do not have a duty to provide reasonable accommodation[15] and they are not to be taken accountable in case of unjustified failure to provide this accommodation for persons with disabilities. This is a serious flaw in the fight against discrimination on ground of disability, especially in the field of education, and in securing inclusive educational system for persons with disabilities.

[11] See: *inter alia,* United Nations Standard Rules on the Equalization of Opportunities for Persons with Disabilities), UN General Assembly Resolution 48/96, (December 20, 1993), rule 6 paragraph 8. See also: UNESCO Convention Against Discrimination in Education, Article 5 paragraph 1 line c.

[12] See: *supra* note 5 Special report of the Ombudsman on inclusion of children with special needs in the education.

[13] See: *Research report: Use of assistive information technology in primary schools in the Republic of Macedonia, current realities and needs*, Open the windows, Skopje, (March 2011), pp.13-15. From in total 334 primary schools that exist in the Republic of Macedonia, in this report 238 schools are analyzed (71,3%). From which accessible ramps on the entrance had 18,9% from the schools, adjusted indoor premises (classrooms and toilets) had 10,9% from the schools, and not a single school had an internal elevator. It is noticeable that the schools from the Skopje region have a higher degree of physical accessibility in comparison with the rest of the schools.

[14] See: *supra* note 13 *Research report: Use of assistive information technology in primary schools in the Republic of Macedonia, current realities and needs*, pp.9-12.

[15] The reasonable accommodation should be based on individual needs of the pupil and should be individualized, as for example: individual educational programmes and curricula, support services, providing assistive technology, accessibility of the school in general, including classrooms and toilets etc.

Analyzing the legislation in the field of education one can conclude that it does not provide systematic and comprehensive approach to achieving the right to education of persons with disabilities without discrimination, ensuring optimal development of individual capacities and abilities of children with disabilities. Thus, the prohibition of discrimination on grounds of disability should be explicitly laid down in the laws on primary and secondary education as well as the duty of the educational institutions to provide reasonable accommodation for persons with disabilities. One of these reasonable accommodations can be providing an assistive information technology for pupils with disabilities.

3. USING ASSISTIVE INFORMATION TECHNOLOGY AS A WAY TO IMRPOVE THE QUALITY OF EDUCATION FOR PERSONS WITH DISABILITIES

The analysis is based on the results from the project "Equal Access for Equal Opportunities", implemented by the civil society orgaisation "Open the windows" in the period 2010-2012 and funded by USAID.[16] Namely, the experiences of the 21 regular primary schools that, through this project, introduced assistive information technology in teaching of pupils with disabilities[17] in the academic year 2011/12 were the source of the assessment.

In the period August-December 2011, selected schools (21 in total) were equipped with the following assistive computer devices: keyboard with large buttons, joystick, trackball, and separate click. Depending on the needs, each of the selected schools received between 7 and 12 sets of these devices, and a total of 200 sets were distributed. Also, for all the schools installation software for educational games G-Compris[18] was provided and 21 training for the application of assistive technology in working with pupils with disabilities were organised[19].

The assessment focuses on three main issues, such as the application, relevance (according to the needs) and quality of the process of introducing the assistive information technology with four categories of respondents: the schools (as institutions), teachers, pupils with disabilities and parents of pupils with disabilities enrolled in these schools accordingly.

3.1. Application

Assessment showed that the assistive technology is applied in all schools involved in the project. In each school, averaging 10 pupils with disabilities use one or more assistive devices or software adjustments (in total 214 pupils with disabilities used the donated assistive devices or software adjustments from which 126 were male and 88 female, enrolled in all nine classes of the primary education). They face a different type of disabilities, mostly metal and intellectual disability.

All types of donated assistive devices were used: keyboard with large buttons, trackball, joystick, and separate click respectively. The degree of usage was different: the most used was the keyboard

[16] The author expresses gratitude to the civil society organization "Open the windows" for allowing her to use the results from the project and their work, to presented as a good example that needs to be followed.

[17] See: *Report from survey: Introducing assistive technology in 21 regular primary school in Macedonia*, Open the windows, Skopje, (February 2012), pp.3; http://makedonski.openthewindows.org/index.php?option=com_docman&task=cat_view&gid=32&Itemid=70. From the 21 selected schools, 16 schools were city based and 5 were rural schools. As to the language of instruction, 14 schools performed the instruction in Macedonian, 1 in Albanian, 4 were bilingual and 1 was trilingual.

[18] In cooperation with the USAID's Primary Education Project (PEP) and the Bureau of Education Development , set of educational games G-Compris was localized in Macedonian and Albanian language. For the application of the set of educational games, "Open the windows" prepared a teaching manual with recommendations for working with pupils with disabilities.

[19] The training included more than 400 participants, out of which: 313 teachers, 36 representatives of professional teams in the schools, 21 parents of pupils with disabilities, and representatives from the units of the local self-government and local units of educational institutions, school principals, educators, etc. The report for the implemented training is available in Macedonian language on: http://makedonski.openthewindows.org.

with large buttons (by 159 pupils); followed by the trackball (by 100 pupils); joysticks (by 81 pupils); and separate clicks (by 71 pupils).

Furthermore, all schools used software adjustments (accessible options), from which most commonly used were: adaptation of the workplace on the computer (by 101 pupils) and accessible options for the mouse (by 94 pupils) and the keyboard (by 100 pupils).

Pupils with disabilities from the schools involved in the project had more opportunities to use the assistive technology at school than at home. At school, most pupils with disabilities used the computer to perform school tasks (53 pupils), then drawing (43 pupils), for computer games (35 pupils), for surfing the Internet (19 pupils) and making presentations (13 pupils).

Generally, assessment showed that schools and teachers had implemented the educational package G-Compris and Toolkid in teaching, including working with pupils with disabilities. Pupils with disabilities, used the G-Compris for a wide range of targets connected with the curricula, but also for encouraging their personal development, such as: reading and writing (70% of schools); acquiring basic mathematical skills (70%); enriching the vocabulary and improvement of expression (85%); developing and improving of fine use of hands (75%); developing of cognitive skills such as thinking, memory and attention (85%); encouraging creativity (75%); and for relaxation and fun (65%).

3.2. Relevance

Assessment showed that the vast majority of surveyed schools (95%), teachers (92,9%) and parents (92,5%) think that the donated assistive devices suit the needs of pupils with disabilities.[20] From another side 90,5% of the surveyed pupils with disabilities claim that for them it is easier to use the computer when using any of the assistive devices or software accessible options. This clearly shows the relevance of the assistive information technology as a means to improve the quality of education of persons with disabilities.

3.3. Quality

95% of all schools noticed the positive effects of using assistive information technology on their pupils with disabilities. Observed effects include: improving the involvement of pupils with disabilities in the education process (95%), strengthening their sense of self-confidence (90%), increasing the interest of pupils with disabilities in teaching and desire to acquire new knowledge (85%), enabling the pupils to easily prepare homework and master curricula.

Furthermore, the assistive technology positively affects the improvement of the educational opportunities of the pupils with disabilities in general.

Finally, assessment showed that the assistive technology contributed to the application of new methods of work with pupils with disabilities based on individual approach and motivated the teachers to produce and apply this individual approach to each of the pupils with disability. And even more, using the assistive information technology makes this task easier.

4. CONCLUSIONS

From the assessment of the project "Equal Access for Equal Opportunities" it can be concluded that the initial experiences of introducing assistive technology in the mainstream primary schools are positive. Generally, the assistive technology impacts improving the inclusiveness of the educational process and contributes to increasing the educational opportunities of pupils with disabilities. In this regard, the use of assistive technology can facilitate the development and application of

[20] It can be said that there is no unified model for application of assistive technology: the technology should be adjusted to serve the user, not vice versa. See: Minutes from the Conference *"For e-accessible primary schools: Assistive technology in the primary education in The Republic of Macedonia"* held on March 28, 2012 in Skopje; http://makedonski.openthewindows.org/images/downloads/12-zapisnik.pdf.

individual education plans for pupils with disabilities. However, involvement of all relevant actors can ease the process, especially the co-operation between teachers and parents that can substantially contribute to the successful implementation of assistive technology and more effective implementation of the practice of inclusion. Finally, practice shows that inclusiveness of schools in general (eg, accessibility, staffing of the professional teams, equipment, and teachers' skills for working with pupils with disabilities) affect the impact of using assistive technology.

One additional issue can be observed during the assessment of the practice in these 21 selected primary schools. Namely, schools lack procedures for systematic registration and monitoring of pupils with disabilities, which overburdens the implementation of the inclusive education policies even more.

At the end, one additional point was raised during the conference "For e-accessible primary schools: Assistive technology in the primary education in the Macedonia" held on 28 March 2012 in Skopje as part of the project.[21]. Namely, experts held that it can be beneficial if the assistive technology can be used to assess the opportunities of the pupils with disabilities who enroll in first grade of regular primary schools. That will enable the schools to identify the necessary assistive devices and appropriate software for pupils with special educational needs in the early start of their education. And this will give leverage to the assistive information technology to be used not only as a means to assess the current capacities of the pupils with disability, but also as a means to improve the same capacities and building upon them in the future.

5. RECOMMENDATIONS FOR FUTURE ACTIONS[22]

All involved stakeholders, state, as well as non-state actors should strive to achieve the standards set for in Article 24 of the UN CRPD. To achieve this in the area of primary education in the Republic of Macedonia further improvements are needed, such as:

1. Providing systematic and comprehensive approach to achieving the right to education of persons with disabilities on an equal basis with others in the legislation in the field of primary education. Namely, the prohibition of discrimination on grounds of disability should be explicitly laid down in the law on primary education. Furthermore, individualizing the exception provided in the Article 51 paragraph 1 from the Law on primary education, and not using it to exclude *a priori* the whole group of persons with certain disabilities, from all or part of the educational process.

2. The adjusted curricula and programmes for pupils with special educational needs should be of equal quality as those used for the education of children without disabilities. There should be duty to hire a person with a completed degree in special education to help the teacher in classes where there are enrolled pupils with special educational needs.

3. The educational institutions should have a duty to provide reasonable accommodation and they should be taken accountable in case of unjustified failure to provide this accommodation for pupils with disabilities.

4. Providing and guaranteeing the accessibility of educational facilities, environment, and the systems for information and communication, as well as the availability of the public

[21] See: *supra* note 20 Minutes from the Conference *"For e-accessible primary schools: Assistive technology in the primary education in the Republic of Macedonia"*.

[22] The list of the recommendations is only illustrative and aims at focusing more on some general problems such as effective protection from discrimination on grounds of disability in the area of education from one side, as well as with specific recommendations regarding introducing the assistive information technology in the primary education on systematic level from another side. The general recommendations are deriving from the first part of this paper that focused on the overview of the national legislation in the area of primary education for persons with disabilities, and the specific recommendations derived from the second part focused on the practical experience from introducing the assistive information technology in 21 regular primary schools in the academic year 2011/12.

resources for the persons with disabilities is fundamental for their independence, inclusion and mobility. In this regard, *inter alia* the textbooks and other school materials should be available in electronic form and in accordance with the concept of e-accessibility.

5. Overcome the numerous prejudices against persons with disabilities especially their level of knowledge and skills that can be used in the overall educational system. Furthermore, providing for adequate and complete statistics on the number of pupils with disabilities in the educational system and procedures for following their development.

6. Intensifying the process of introducing the assistive information technology in the primary education and making it systematic and sustainable. In that regard, the model for successful implementation of the assistive technology should take into account the needs and opportunities of pupils with disabilities.

7. A handbook for successful implementation of assistive technology in the educational process should be developed, which will contain specific examples, and will be based on practical experiences from schools that already introduced assistive technology in their educational process. In that line, the participation of parents in the process of introducing and applying assistive technology in teaching should be increased.

8. To develop and implement a government subsidy program that is facilitating procurement of computers and assistive devices for pupils with disabilities coming from families with lower socio-economic status (similar to the former program of the Government of the Republic of Macedonia aimed at students enrolled in the higher educational institutions).

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ANNEX 1:
CONVENTION ON THE RIGHTS OF PERSONS WITH DISABILITIES

Article 24
Education

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.

2. In realizing this right, States Parties shall ensure that:
   (a) Persons with disabilities are not excluded from the general education system on the basis of disability, and that children with disabilities are not excluded from free and compulsory primary education, or from secondary education, on the basis of disability;
   (b) Persons with disabilities can access an inclusive, quality and free primary education and secondary education on an equal basis with others in the communities in which they live;
   (c) Reasonable accommodation of the individual's requirements is provided;
   (d) Persons with disabilities receive the support required, within the general education system, to facilitate their effective education;
   (e) Effective individualized support measures are provided in environments that maximize academic and social development, consistent with the goal of full inclusion.

3. States Parties shall enable persons with disabilities to learn life and social development skills to facilitate their full and equal participation in education and as members of the community. To this end, States Parties shall take appropriate measures, including:
   (a) Facilitating the learning of Braille, alternative script, augmentative and alternative modes, means and formats of communication and orientation and mobility skills, and facilitating peer support and mentoring;
   (b) Facilitating the learning of sign language and the promotion of the linguistic identity of the deaf community;
   (c) Ensuring that the education of persons, and in particular children, who are blind, deaf or deafblind, is delivered in the most appropriate languages and modes and means of communication for the individual, and in environments which maximize academic and social development.

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.

Elective Course Service and Inclusion in Teacher Training[1]

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1. COURSE DESCRIPTION

The central objective of this course is to provide students with community experiences and reflection opportunities that examine community needs, the importance of civic engagement, and the effects of social injustice, particularly those that affect ethnic minorities and marginalized populations, in our society. Students directly serve a population in need or provide supporting activities that contribute to the greater good of our community. The students will participate in youth programs, health services, social services, environmental programs, government agencies, etc. Classroom activities provide a forum for critical thinking and analysis for a deeper understanding of cultural diversity, citizenship, and how to contribute to positive social change in our community. Throughout the course, various different disabilities will also be taught, as well as lesson planning for persons with disabilities. The course also provides "real-life" experiences that exercise advanced academic skills and knowledge applicable to each student's program of study and career goals.

2. STUDENT LEARNING OBJECTIVES

The student will refine essential skills associated with their bachelor studies to actively serve the local community. While completing this in-depth study of cultural diversity, citizenship and social justice issues facing our community, students will gain an understanding of the value of social embeddedness and the importance of incorporating civic engagement into their future career goals, as they strive to become productive citizens in our workforce. Students will research and analyze social justice issues affecting marginalized population and their implications for inequalities in education, health care, immigration, socioeconomic status, discrimination, the environment, labor rights, and other community issues.

3. COURSE OUTLINE

Week 1: Feb 9th - Introduction and Syllabus
Week 2: Feb 16th – Special Education and Inclusive Education
Week 3: Feb 23rd – Learning Disabilities
Week 4: Mar 1st – Democracy and Education
Week 5: Mar 8th – Service Learning Project- Accommodating People with Special Needs in Higher Education
Week 6: Mar 15th – Attention-Deficit/Hyperactivity Disorder and Emotional Disabilities
Week 7: Mar 22nd – Mid-Term Due
Week 8: Mar 29th – Speech/Language Disorders
Week 9: April 5th – Hearing Impairments and Visual Impairments
Week 10: April 12th – Clinical teaching
Week 11: April 19th – Orthopaedic and Other Health Impairments
Week 12: April 26th – Traumatic Brain Injury and Developmental Disabilities

[1] The work presented herein has been compiled based on the case study of assistant professor Dr. Aida Koci and her collaborator, a 2012 Fulbright Fellow Ms. Birdsall.

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Week 13: May 3rd – Autism
Week 14: May 10th – Giftedness – FINAL DUE
Week 15: May 17th – International Conference on Service Learning – Discussion

4. GRADING CRITERIA

Participation and attendance:	10%
Discussion, article, quizzes:	10%
On-time paperwork submission:	20%
Midterm exam:	30%
Final project:	30%

Weekly lectures:	Students are expected to attend class every week
Midterm exam:	Poster session and presentation at the end of the semester
Final project:	Interview of a teacher and reflection paper

5. GRADING POLICIES

- Late assignments will lose 10% for each day and will not be accepted if late more than 5 days. .
- All assignments must be submitted through LIBRI (12 Font, Times New Roman, default margins)
- All assignments without a name will not be graded.
- Reflections must be complete! You will be marked down if responses leave grader asking "how so" or "why".

6. LECTURES

- The lectures are a vital piece of your reflection and learning.
- Attendance is expected.
- Tardiness to lectures will result in lost attendance & participation points for that day.
- Everyone is expected to participate in class discussions.
- Cell phone usage during class will not be permitted

7. LEARNING OUTCOMES

By the end of the course the student will be able to:

- Facilitate the implementation of lesson plans;
- Recognize the importance of effective communication;
- Effectively apply communication techniques when working with students with disabilities;
- Learn
  (a) behavior management strategies (i.e., positive reinforcement, negative reinforcement, punishment, and extinction), and reflection; and
  (b) inclusive physical education;
- Explore one's own personal values and ethics;
- Apply effective problem-solving and thoughtful decision-making skills in a community setting;
- Engage in new experiences and assume unfamiliar roles, accepting challenges in the process;
- Extract meaning from an experience by engaging in effective self-reflection.

8. READING MATERIALS/ BIBLIOGRAPHY

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9. MID-TERM EXAM

Assignment: Create a poster in English highlighting an issue related to Special Needs. For example, it could be on "What is Autism" directed towards teachers –or- it could be about "Sports and the Physically Disabled" directed towards coaches. *You pick the topic, but it must be related to Special Needs*.
Note: If you have any questions while doing the assignment, feel free to email Jennifer Birdsall at j.birdsall@seeu.edu.mk; or Aida Koci at a.koci@seeu.edu.mk.

Grading the poster will be based on the following criteria and percents:

Content – 45%: Please state your target audience (teachers, parents, etc). The content will be evaluated to see if the poster is obvious as to what point it is trying to present. Also, it will be looked at to see if it is informative and the information is correct for the topic being presented. The written information should be your own based on your research (the research and the written word must be your own), etc. The use of visual aids, such as pictures is strongly encouraged.

Design/Creativity – 25%: The overall design of the poster will be evaluated. For example, is the poster appealing to the target audience, are the pictures chosen appropriate for the subject matter, etc (Pictures should be taken by you, not from the internet or any other sources).

Organization and Coherency – 15 %: This is based on how well you organize your poster in general. For example, organization and structure should be appropriate to the given task. The points presented in your poster should have logical connections.

Correct spelling and Grammar – 30%: Spelling, punctuation, word choice and fluency of sentences will be evaluated.

Content	Design / Creativity	Organization and Coherency	Correct Spelling and Grammar
35-45 The content relates to a specific topic. It provides as much information as possible on that topic in a concise way.	20-25 The design of the brochure is eye-catching and interesting. It includes many elements of colors, relevant pictures or diagrams and information. It shows creativity.	12-15 Organization and structure are strong and appropriate to the given task. Logical connections and flow to the assignment.	12-15 None or rare and minor spelling and punctuation mistakes. Appropriate grammar structures that vary between simple and complex with no or few mistakes.

Content	Design / Creativity	Organization and Coherency	Correct Spelling and Grammar
23-34 The content relates to a specific topic. Some, but not all important information is included in a concise manner.	13-19 The design of the brochure is interesting. It includes some color, and relevant pictures or diagrams, and information. It shows effort at creativity.	8-11 Organization and structure are appropriate to the given task. Some disruption in the flow of the assignment.	8-11 Some spelling and punctuation mistakes. Appropriate grammar structures that vary between simple and complex with some mistakes.
10-22 The content relates to a specific topic, but very little information is presented and the topic is not discussed comprehensively.	7-12 The design of the brochure is standard and basic. It includes no color, and has few or irrelevant pictures or diagrams to go with the information.	4-7 Some organizational problems. The assignment lacks flow.	4-7 Spelling, punctuation, and grammar mistakes interfere with understanding the text. There are few complex grammatical structures.
1-9 The content meanders and is not all related to the same topic. There is very little comprehensive coverage of the topic.	1-6 The design of the brochure is standard and basic. There is no color, pictures, or diagrams.	1-3 Many organizational problems that disrupt the flow of the assignment and cause difficulty understanding.	1-3 There are many spelling, punctuation, and grammar mistakes that make it difficult for the reader to understand.
0 Insufficient for assessment	0 Insufficient for assessment	0 Insufficient for assessment	0 Insufficient for assessment

10. FINAL PROJECT FOR SPRING 2011: BIRDSALL AND KOÇI

You are to complete an interview of a teacher that is teaching right now. You will write the interview questions on your own. After the interview you will write a reflection paper regarding the interview.

Criteria:

- Write 15 interview questions
  - The topic of the questions must be special education
  - They could be about adapting lessons, inclusion of all students, strategies the teacher uses, etc.
- You will write or type your 15 questions and the answers from the teacher, this will be turned in. It should include: your 15 questions, the teacher's 15 answers, teacher's name, teacher's school, age of students the teacher teaches, and the years of experience the teacher has (all in English)
- Reflection Paper- you are to write a reflection of the interview you completed. Share things you learned, new ideas you were given, things that the teacher made you think about, and how you will apply what you learned when you are a teacher.

Grading:

- Turning in all required documents- 10 %
  - Questions, Answers, Information about the teacher, Reflection Paper
- Content of interview and questions – 50%
- Reflection Paper – 40%

Final Project – Rubric

Turned in all required documents – 10 points

1 point	5 points	10 points
Only had 1 of the 3 required documents	Had 2 of the required documents	Had: - 15 questions and answers from teacher - Turned in interview included: teacher name, school, age of students, and years of experience - Reflection Paper

Content – 50 points

0-4 points	5-15 points	15-24 points	25-34 points	35-44 points	45-50 points
Content did not relate to special education, questions were poor quality	¼ or less of the questions related to special education, Questions did not require in-depth responses	½ or less of the questions related to special education. Some questions did not require in-depth responses.	¾ or less of the questions related to special education. A few of the questions did not require in-depth responses.	All but 1 of the questions related to special education. The questions all required in-depth responses.	All of the questions related to special education and were applicable for a teacher who has students with special needs in his or her classroom. The questions were well thought out and required in-depth answers.

Reflection Paper – 40 points

0 – 4 points	5 - 14 points	15-24 points	25-34 points	35-40 points
The reflection paper was less than a paragraph in length and did not relate to the interview	The reflection paper was 1-2 paragraphs, it did not relate to the questions asked, and did not share how the interview could be applied	The reflection paper 2-3 paragraphs, part of it related to the questions asked, it included things learned and new ideas.	The reflection paper was at least 1 page in length. It shared things learned, what it made the interviewee think about, and ways that the interviewee can apply the knowledge	The reflection paper was at least 1 page in length. It shared things learned, what it made the interviewee think about, and included a deep reflection of the ways the knowledge could be applied.

Establishing the Needs Analysis and Course Design (NACD)[1] course

[2] Author: Aida Koçi

The Southeast European University, Tetovo, Republic of Macedonia

1. ELABORATION OF THE PROBLEM

According to the new Law on Higher Education from March 14, 2008[3], individuals with special needs can attend public schools for free. However, most of the buildings of the higher education institutions in Macedonia are not physically accessible for these people or in cases when efforts are made to make them accessible, a lot needs to be additionally done. The Southeast European University (SEEU) is located in an area of Macedonia where there are no special educational programs for students with special needs. There is a Department of Special Education and Rehabilitation as part of the Faculty of Philosophy, University Ss Cyril and Methodius in the capital of the state, Skopje.[4]

Apart from this, another problems that the lecturers of the Needs Analysis and Course Design (NACD) course, assistant professor Aida Koçi and professor Sandra Bruno and their students have identified, is the lack of understanding/ knowledge for the people with special needs. More specifically, there is neither a place in the community where this issue could be dealt with, nor is there a place where people can get information about their needs or concerns. This is obvious not only in the community, but in the classrooms, as well. The students studying at SEEU are expected to start teaching as of next year and they need skills that could be readily applicable to a variety of situations and learning needs.

2. IMPLEMENTATION

The faculty members at SEEU preceded the service-learning project in four steps:

1) First of all, specific needs were introduced to students studying at this university. Since there is a lack of experts in the field of education for disabled students, SEEU faculty members invite Peace Corps Volunteers. This year the University had the pleasure of having a Fulbright scholar with a research interest in special education who was more than willing to share her expertise with our students. The experts describe the role of administrators, professionals, and teachers in teaching students with special needs; the definitions of categories of disabilities; teaching strategies for each disability; the definition of inclusive education; why inclusive education is important; adaptations –

[1] The work presented herein has been compiled based on the case study of assistant professor Dr. Aida Koci and her collaborator, professor Dr. Sandra Bruno.

[2] Prof. Aida Koçi, affiliated to the Southeast European University, Tetovo, Republic of Macedonia, e-mail: aidakoci@yahoo.com, a.koci@seeu.edu.mk,

[3] Interpretation of Article 87 of the Law on High Education: High Educational institutions will not charge Parentless children, Persons with first or second degree of disability, Invalids of war and Persons that have been brought up in an Orphanage with an admission and study fee (known in Macedonia as a 'participation fee'). The participation fee for these individuals will be covered by the State Universities within the frame of students determined by the announced competition, can introduce co-financing expenses for students whose education is not financed by the Budget of Republic of Macedonia, in agreement with the Government of Republic of Macedonia.

[4] Based on the inadequately chosen name in Macedonian (Institut za Defektologija) of this Department (it has a negative connotation), one might comment that there is a lack of real understanding for the people with special needs in Macedonia. Some would even go as far as implying that this reflects the prevailing attitudes of the general public towards these individuals in the context of the Macedonian society.

ideas and examples; and a model of the American Special Education system. This takes place in the NACD classes, 1.5 hours for each group (4 groups of 20 students).

2) The second step was the testimony of two disabled students from SEEU, who talked about their educational experiences, their parents and their own struggles to be included in the educational system; their parents` roles, and their friends' help, among others.

3) Based on Step 1 and Step 2, instructor Aida Koci assigns the service learning task to the NACD students. The first option she gives to students is to write a lesson plan with some adaptations for students with special needs. It is important for the students who are going to be language teachers, to learn how they can:

- Accommodate the regular curriculum;
- Modify it (actually, transform it) only when they have no other choice, and
- Meet the needs of the students with disabilities.

All these accommodations will keep the child in the mainstream.

The second option for the final project is to design a brochure highlighting an issue related to special needs in their communities. For example, it could be on 'What is Autism?' directed towards teachers or it could be about 'Sports and the Physically Disabled' directed towards coaches.

Students interview teachers in the community about their experiences with students who have special needs. Afterwards, they organize the data collected from the interviews in order to formulate their requests and brochures that will be submitted to the decision-makers, principals in the schools, NGOs, the Rector of the SEEU, etc.

4) The final step is a presentation of the findings and preparation of brochures based on the interviews performed by the students. The aim is to show what the students analyzed and how they designed some concrete change to improve the everyday life conditions of disabled people. The overreaching goal of all this is to 'convince' the representatives of relevant institutions to implement these decisions.

3. OBJECTIVES OF THE SERVICE-LEARNING PROJECT AT SEEU

Before the first class, there are mainly four objectives that need to be met:

- Preparing students to describe the project and how they could participate, as well as getting their approval;
- Preparing the students for what they are going to do in order to help the community in which they live and work;
- Encouraging them and increasing their confidence in giving their testimony;
- Preparing the instructors to manage the class by preparing questions and giving constructive comments.

4. BENEFITS FROM THE SERVICE-LEARNING PROJECT

The benefit from the service-learning project for the community was threefold.

First of all, the students and the professors:

Raised awareness and disseminated information about the needs of the individuals with special needs;

Helped students understand and tolerate differences in the classroom;

   a. Taught the students how to adjust the teaching methods (identify various kinds of handicaps, analyze the needs associated with the different categories, include the specific needs in their teaching process);
   b. Suggested possible steps to be taken in order to make the learning process of the disabled people easier.
2. Second, the project worked to help diminish discrimination against disabled people, especially in education.
3. More importantly, the students disseminated information about the current situation in various institutions in the area. They analyzed how these institutions can improve their physical environment, as well as the services they offer, in order to be better adapted to people with special needs. Moreover, the students learned more about how to negotiate and initiate changes in the community where they live.

5. OUTCOMES FROM THE SERVICE-LEARNING PROJECT

1) *Tangible/ practical results*

- A short documentary;
- Brochure for supporting a draft law;
- T-shirt and a brochure for better understanding special needs;
- Posters for awareness raising;
- Brochures for teachers and parents;
- Brochures to be distributed in public places;
- A presentation of the work during a special event where families, politics, media, institutions, associations were invited.

2) *Gained insights and knowledge*

By participating in the service-learning project the students at SEEU learned that:

- There are various different kinds of handicaps, and that the categories were not rigid ones;
- Dealing with impairment necessitates a high amount of empathy to properly deal with affective aspects involved (and that empathy is not the same as feeling pity);
- It is important to properly behave psychologically toward handicapped persons – listen to their needs, invent solutions together with them, treat the handicapped individuals as others as much as possible (at least concerning certain aspects), but without neglecting their particularity etc.
- There are ways to integrate handicapped people into pedagogy by:
  - Adapting the environment so that all the students could attain the same objective (the issue here is to avoid lowering the objectives and criteria);
  - Working with students in order to make them realize that they all have different kind of difficulties and that they can help each other as soon as they accept this matter of fact;
  - Developing a meta-cognitive reflection on understanding various ways of forming mental representations, solving problems etc;
  - Acknowledging the fact that by helping others we help ourselves – we feel useful, make new friends, share the joy and satisfaction etc.

They also learned how to:

- Provide different instruction and materials to meet a student's individual goals;
- Assess students` motivation and engagement with an enhanced understanding of global issues before and after the event;
- Understand and appreciate diverse cultures locally and globally;
- Strengthen students` civic responsibility;

- Show more respect and tolerance towards diverse groups and individuals in the communities; and
- Overcome negative stereotypes.

3) Impact- *Change of views and values*

Apart from this, the students` participation in the service-learning project helped them in learning to learn by themselves – to search for information, listen to others, to better understand a situation by taking into account various points of view about this situation, to learn by explaining to others, get to know their communities etc.

More specifically, with the service-learning approach the students at SEEU gained or improved a lot of competencies that will be useful all their life (transferable competencies). The students:

- Got to know the others better while working in groups, and went even further thanks to the differences within the group;
- Gained or advanced their skills needed for managing a project, such as: being on time with tasks completion; managing a budget; negotiating; adapting the project to material and technical constraints etc.;
- Gained or advanced their skills for effective use of technical artifacts and environments to produce concrete objects (for example, printed documents, printed T-Shirts, shooting and editing films etc.)
- Learned how to run interviews – directive or non-directive interviews are techniques that can be mastered only by doing;
- Formed theoretical/ practical relationships which enrich our understanding of reality.

To summarize: from a standpoint of learning and sharing knowledge, the service learning project mainly influenced students' motivation to use their knowledge, as well as to gain more knowledge (to expand the scope and depth of their knowledge base). That's because they can see why the subject matter is important during the course of the project. Rather than simply memorizing data or information, they become motivated to use their knowledge in a socially meaningful context, which improves the relevance and applicability of their education. As citizens, they also learned a lot about civil rights, associative power, networks and so on.

6. DIFFICULTIES ENCOUNTERED DURING THE PROCESS

1) *Organization*

It appeared to be hard to involve the handicapped persons on the campus. The psychological reason is obvious, as it can be easily understood that they did not want to be stigmatized. Until the end, the two instructors wondered if these individuals would really come to class to give their testimony, as they said they would. Actually, we had four meetings organized with them, and each time we met there was at least one missing. Naturally, the first thing that comes to mind is that the timing did not quite work for them, but in this case, we were wondering how difficult this involvement was for our impaired students. After each meeting, the two instructors had a long debriefing to measure the students' confidence in giving their testimony. Each time this led to decisions related to the issue of how to better adjust at the next meeting so that these people would get motivated. Finally, one did not come to any of the classes, even though he had confirmed he would come the day before! Interestingly, this person accepted to participate in the documentary.

Of course the SEEU faculty members had guesses about the difference between the students who came and the one who did not, and the reason why the two previously mentioned ones actually came. It happens to be that the ones who came belong to the Teacher Training Department (different level). Because of this, they may have been particularly sensitive to how much education could integrate impaired people.

2) *Cognitive understanding*

The students understood the social and humanistic challenge relatively quickly, almost at once, but some remained focused on these aspects, and did not fully understand the theoretical and practical consequences.

3) *Affectivity*

The testimonies lead to great emotion. It was difficult to avoid particularly emotionally-biased questions or questions which were too intimate and personal. Luckily, thanks to the preparation, the instructors had anticipated the occurrence of such a problem and were able to properly re-formulate some of the questions when needed.

In any case, some students cried while listening to the answers to their questions, either because they felt pity, but also because they felt guilty not to have properly reacted in the past. We also hypothesize that the climate of great confidence 'hurt' our students by awakening their own hidden weaknesses. This last hypothesis is in fact one of the project's objectives: to have people sharing the acceptance that we all have some kind of impairment.

Positive Psychology Program for equal Access for Children and Adolescents with Disabilities

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[3]Jelena Milenković, Despina Ristova
Mentor: [2]Lence Miloševa

"Goce Delcev" University, Stip, Faculty of Educational Science & Faculty of Medical Science

Abstract:

The theoretical frame of this paper was grounded in positive psychology programs and social ecology theory.
Our main aim was to raise awareness against discrimination toward disabled children and adolescents.
In the frame of the project Equal Access through Service Learning for Persons with Disabilities, we conducted our Service Learning Project, on which we based our paper. It consists of two parts. The main aim of the first part of the study was to identify students' discrimination attitudes towards disabled people.
After we gain results from the first part of the study, based on School-wide Positive Behaviour Support project, we modified and created psycho-educative workshops for secondary school students and for students at the Faculty of Educational Science. We believe that building positive psychology environment and "flourishing schools" will be one of the prospective ways in order to create inclusive educational environment. According to the students' opinion, based on the results in this survey, we can conclude that there are elements of separation in society in which students live and study (64%); students have not felt different than the others or that they don't belong to that group (66%); they have recognized different behavior towards people with disabilities (20%); but personally, they have never experienced different behaviour toward somebody based on differences (83%). We agree that the psycho-educative workshops that we conducted could be an effective way to raise awareness against discrimination toward people with disabilities. Through psycho-educative workshops we emphasized the importance of service learning and involvement in the community in creating equal access for children and adolescents with disabilities.

Keywords: equal access; children and adolescents; disabilities; positive psychology.

1. INTRODUCTION

In this paper, we discuss the need for pre-service teachers, service teachers and students to raise awareness against discrimination toward disabled children and adolescents. They should enter the classroom with the disposition to focus on individual strengths and to understand how the diversity of students' abilities and backgrounds contributes to the subjective well-being of the student population (Miloseva & Marelja, 2009). The theoretical frame was grounded in positive psychology programs and social ecology theory.

Today, Positive psychology programs address a broad range of academic and social behavioral challenges and has transformed from a singular focus on individual case planning to systems level implementation especially involving school-wide and community issues (Sugai & Horner, 2002).

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[3] UDG, Faculty of Educational Science, Undergrad. student.

School-wide Positive Behaviour Support project is a systems approach for establishing the social culture and individualized behavioral supports needed for schools to be effective learning environments for all students, including disabled children and adolescents (Lewis and Mitchell, 2012).

We believe that building a positive psychology environment and "flourishing schools" will be one of the prospective ways in order to create inclusive educational environment. Although definitions of high quality teaching vary considerably, a good teacher capitalizes on the strength of each student and on the strength of social environment. Yet, novice teachers struggle to identify all students' abilities and social support. Many teachers describe inclusion practices as just another obstacle encountered in the classroom. We seek to identify ways of changing this burden of inclusion mindset to a welcoming/enriching notion align with positive psychology concepts.

It is important to understand how the social environment affects a child's well-being in order to improve health outcomes for children. According to Lopez and Snyder (2005), the following concepts are key to recognizing how children's physical and mental health is influenced by social factors, how the people and conditions in children's environments support their development, and how children's vulnerabilities to poor mental health outcomes can be reduced by promoting positive emotional and behavioral health:

- The social ecological model of human development and the many factors influencing development;
- Resilience and its importance to children's emotional and behavioral health;
- How strengthening protective factors and reducing risk factors can influence children's emotional and behavioral health.

The social-ecological model helps us understand how individuals and their social environments are interrelated. The defining feature of the social ecological model of human development is the growth and change that occurs as a result of interactions between individuals and environmental influences, which include the family, school, peers, neighborhood, community, and nation (Bronfenbrenner, 1979).

The social ecological model is often illustrated as a series of circles within circles, each influencing an individual's development to varying degrees (at the interpersonal level, formal and informal social network and support systems-including family, workgroup, and peer networks; institutional and organizational factors; community factors; public policy influences) (Santrock, 2011).

2. METHODOLOGY

Service-learning provides thoughtfully organized experiences that integrate students' academic learning with service that meets actual community needs. Service and learning are joined in many ways that complement and enhance each other.

In the frame of the project *Equal Access through Service Learning for Persons with Disabilities*, we conducted our Service Learning Project, on which we based our paper. It consists of two parts.

The main aim of the first part of the study was to identify attitudes of students for discrimination towards disabled people.

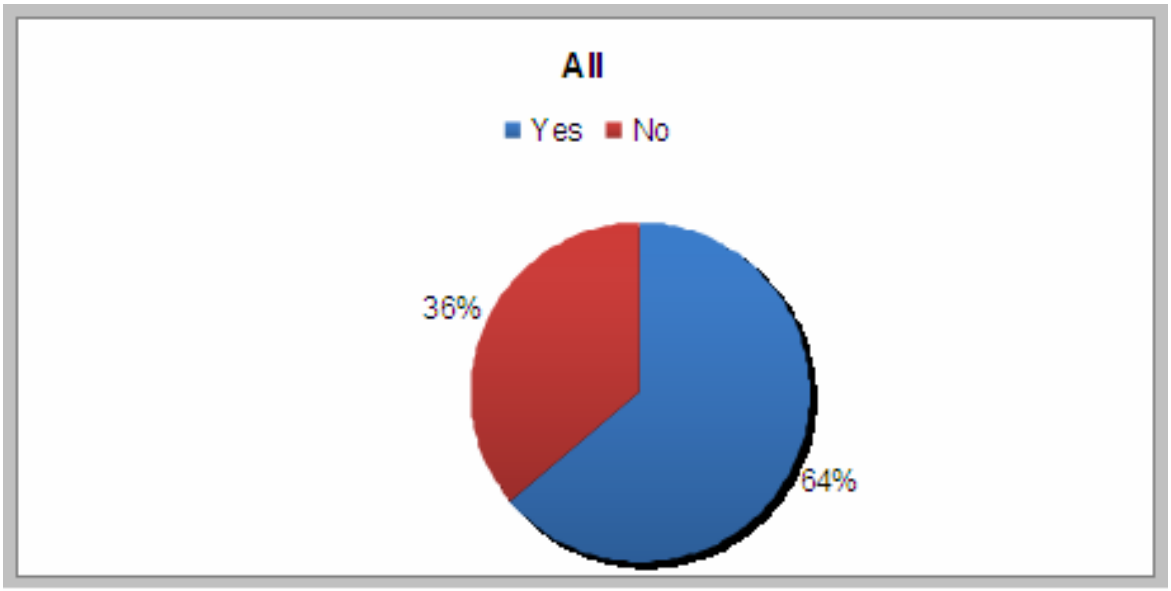
3. RESULTS AND DISCUSSIONS

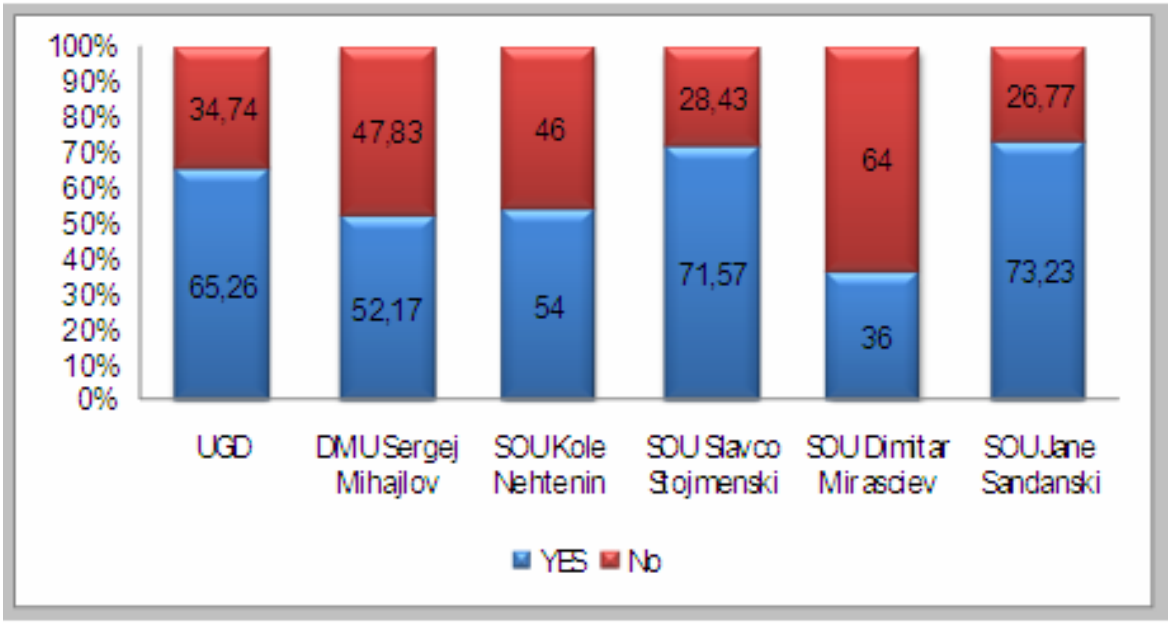
In order to identify students' discrimination attitudes towards disabled people, we used the service learning methodology. In collaboration and support with the local community in Stip, we conducted research in five secondary schools and at the Goce Delcev University, Stip.

Analysis and results of filled questionnaire are presented below.

3.1. Does any kind of separation exist within the society you study and live in?

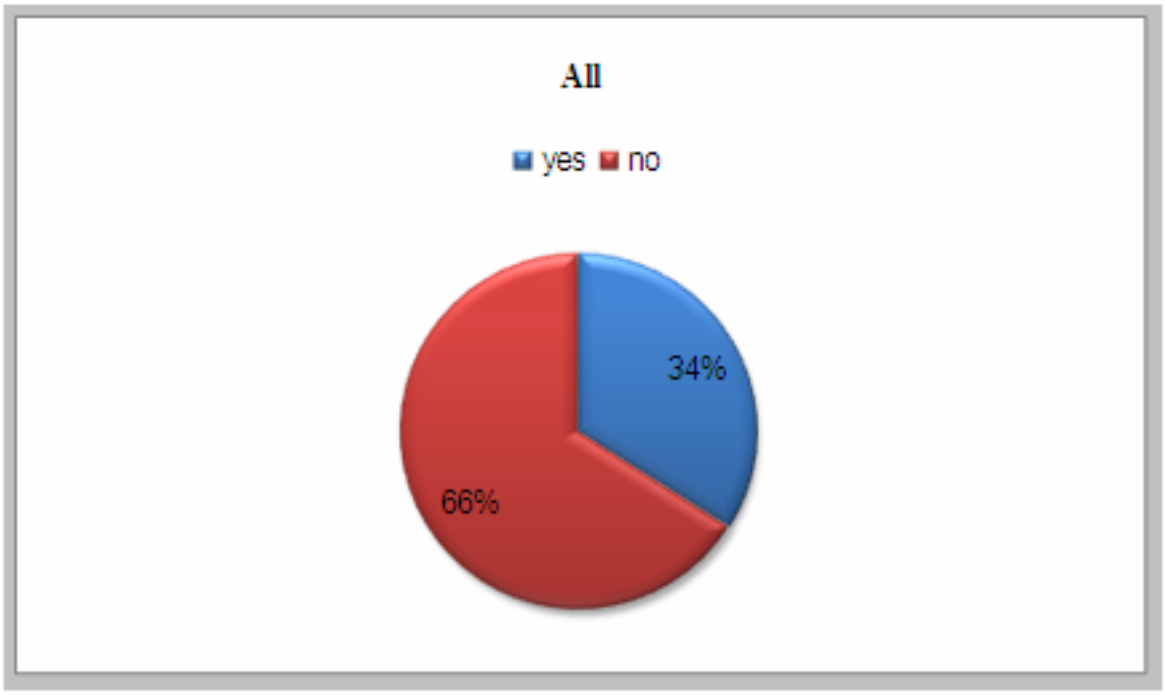
School	Yes	No	Questioned
SOU "Jane Sandanski"	145	53	198
SOU"Dimitar Mirasciev"	18	32	50
SOU"Slavco Stojmenski"	141	56	197
SOU "Kole Nehtenin"	108	92	200
DMU"Sergej Mihajlov"	24	22	46
UGD "Goce Delcev"	139	74	213
All	**575**	**329**	**904**

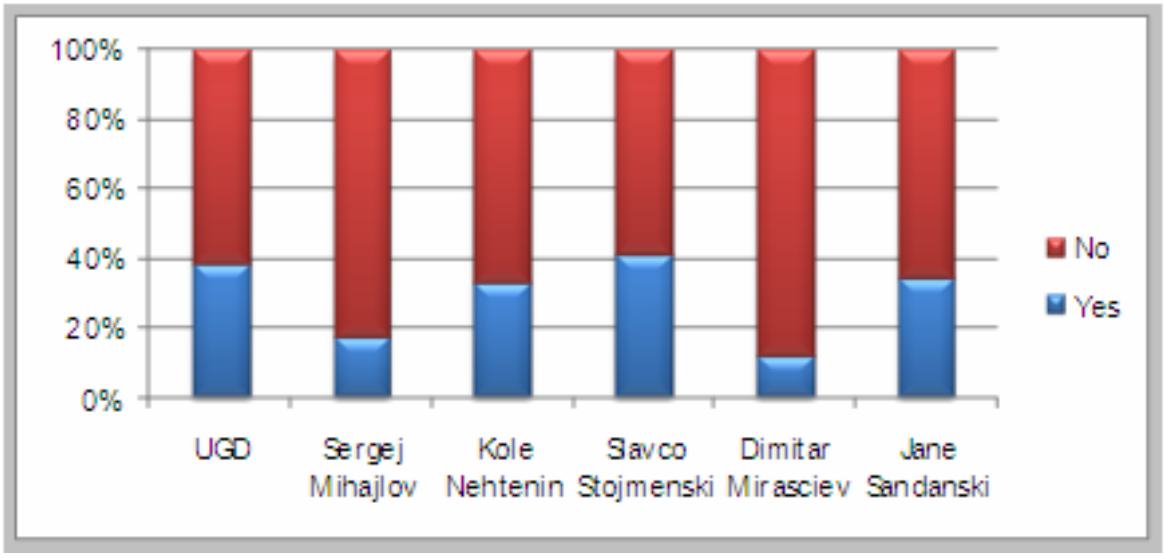




3.2. Have you ever felt different than the others or that you don't belong to that group? (any kind of group; describe if you ever found yourself in that kind of situation)

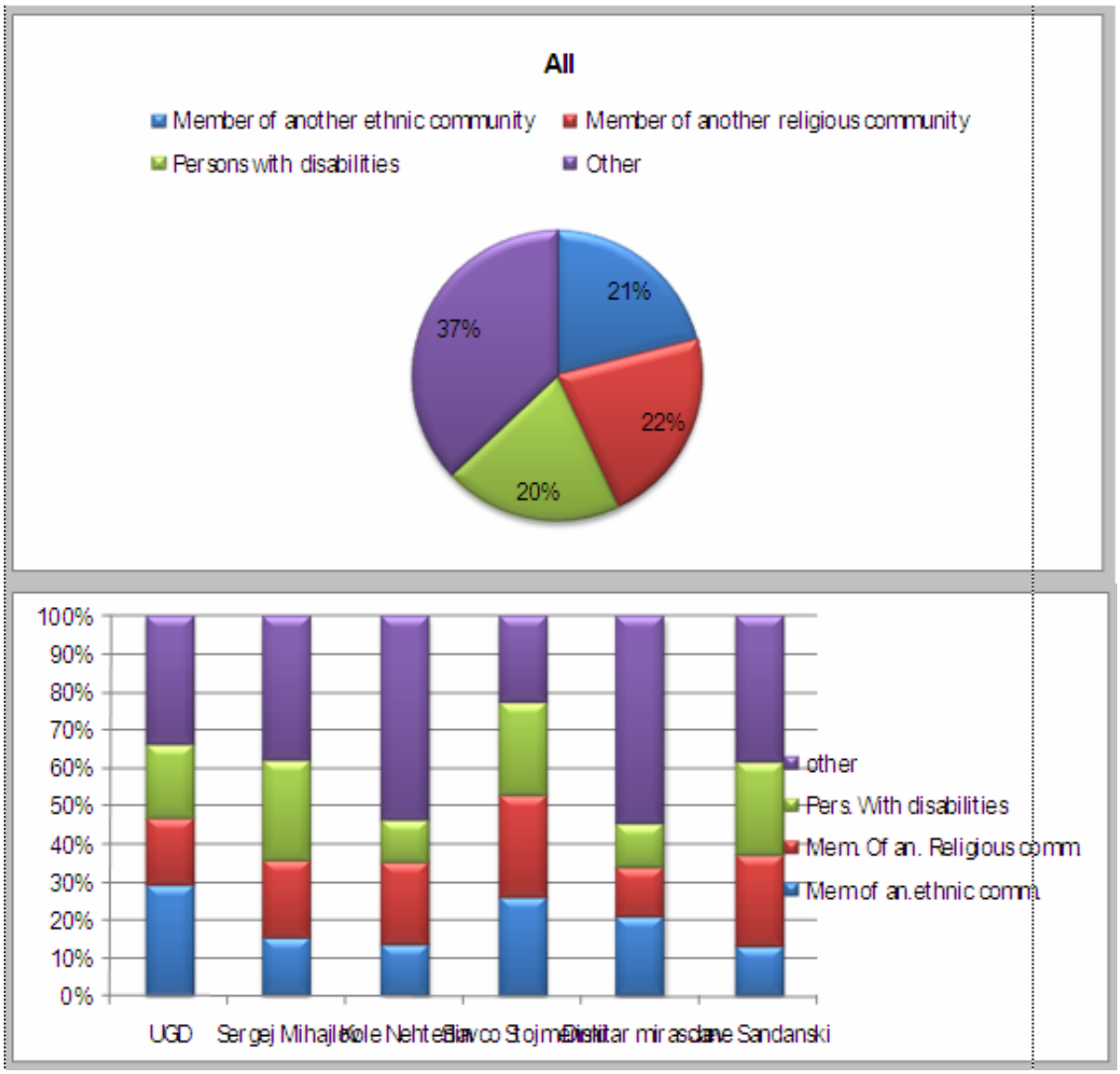
School	Yes	No	Questioned
SOU "Jane Sandanski"	68	130	198
SOU"Dimitar Mirasciev"	6	44	50
SOU "Slavco Stojmenski"	79	113	192
SOU "Kole Nehtenin"	66	134	200
DMU"Sergej Mihajlov"	8	38	46
UGD "Goce Delcev"	82	131	213
All	**309**	**590**	**899**





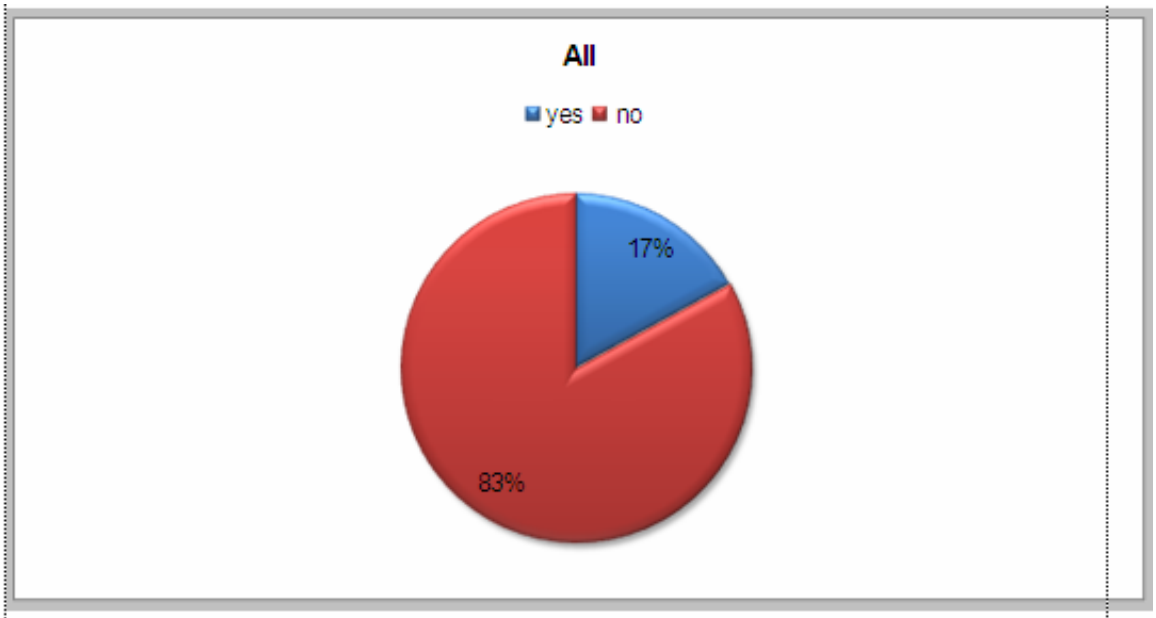
3.3. Have you recognized different behavior towards?

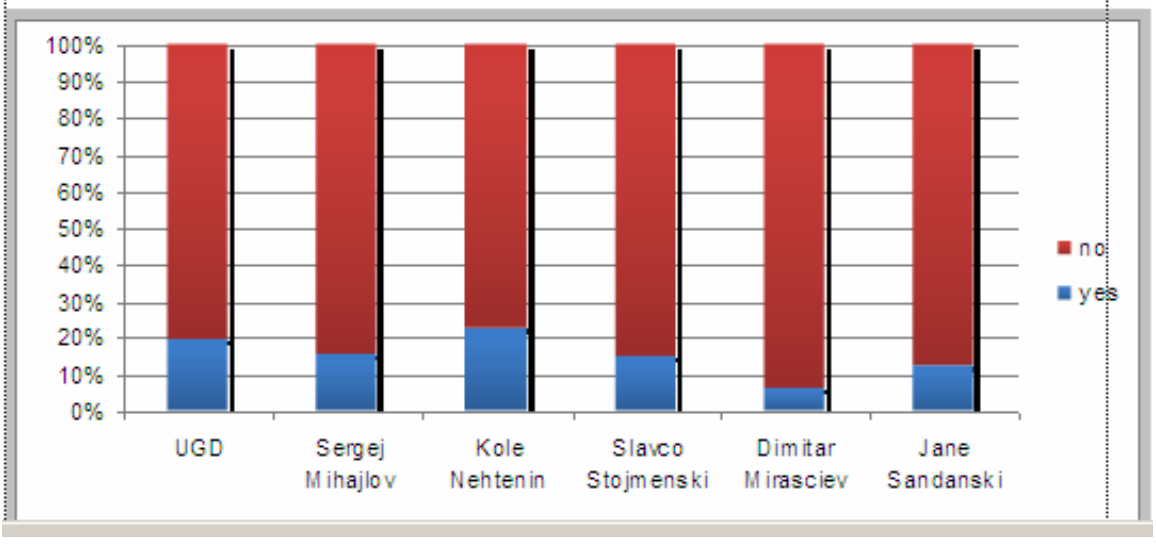
School	Member of another ethnic community	Member of another religious community	Persons with disabilities	Other	Questio ned
SOU“Jane Sandanski”	29	53	55	85	222
SOU “Dimitar Mirasciev”	11	7	6	29	53
SOU “ Slavco Stojmenski”	61	63	57	53	234
SOU “Kole Nehtenin”	30	47	25	118	220
DMU “Sergej Mihajlov”	8	11	14	20	53
UGD “Goce Delcev”	80	49	53	93	275
All	219	230	210	398	1057



3.4. Have you ever experienced different behavior towards somebody within the group just because she/he is different than the others?

School	Yes	No	Questioned
SOU "Jane Sandanski"	24	174	198
SOU"Dimitar Mirasciev"	3	47	50
SOU"Slavco Stojmenski"	29	168	197
SOU "Kole Nehtenin"	45	155	200
DMU"Sergej Mihajlov"	7	39	46
UGD "Goce Delcev"	43	180	223
All	151	763	914





After we gained results from the first part of the study, we conducted the **second part of the study**.

Based on School-wide Positive Behaviour Support project, we modified and created psycho-educative workshops for secondary school students and for students at the Faculty of Educational Science. School-wide Positive Behaviour Support project, is a systems approach for establishing the social culture and individualized behavioral supports needed for schools to be effective learning environments for all students, including those with disabilities.

Psycho educative workshops were implemented during the summer semester, academic year 2011/2012, in the frame of elective subjects : Social psychology and Positive psychology at the Faculty of Educational Science, "Goce Delcev" University, Stip; and during the project classes in secondary schools: "Jane Sandanski", "Dimitar Mirasciev", "Slavco Stojmenski", "Kole Nehtenin", "Sergej Mihajlov", Stip.

The main aim of our activities was to:

- describe discrimination toward disabled people;
- raise awareness of students, teachers, pre-service teachers, parents, local community, for equal access through formal and informal learning for children and adolescents with disabilities;
- promote equality of opportunity for disabled people, taking steps to take account of disabled people's disabilities;
- promote positive attitudes to disabled people; and
- encourage disabled people to participate in public life;
- describe activities that students can engage in to reflect on their service in community, and to make connections between their service and what they learned.

They were focused on five positive psychology concepts: (a) hope; (b) gratitude; (c) use of strengths; (d) positive social relationships; (e) pleasure, engagement, and meaning orientations to happiness.

4. CONCLUSION

We based our research in positive psychology and social ecology theory because positive psychology has been a highly generative initiative, both in its implications for basic theory and research and in its implications for practice. On the other hand, the social-ecological model is a way to organize and think about the complex range of social influences—from parent practices that have a direct influence on the child and adolescent, to community and economic factors that can only influence the child and adolescent through the actions of others.

According to the students' opinion based on results in this survey, we can conclude that there are elements of separation in society in which students live and study (64%); students have not felt different than the others or that they don't belong to that group (66%); they have recognized different behavior towards people with disabilities (20%); but personally, they have never experienced different behaviour toward somebody based on differences (83%). We agree that the psycho-educative workshops that we conducted could be effective way to raise awareness against discrimination toward people with disabilities. Through psycho-educative workshops we emphasized the importance of service learning and involvement of the community in creating equal access for children and adolescents with disabilities.

We hope that we somehow contributed to raise a voice for our cause - ensuring equal rights through service learning for the persons with disabilities.

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Attitudes and Opinions of the Public in the Republic of Macedonia to the Barriers Faced by Persons with Disabilities

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Abstract:

Negative attitudes toward differences and the balance of the disability, expressed by the community, the high degree of prejudice, and the indiferent relationship, containing elements of open discrimination and marginalization towards the persons with disability.

The purpose of the poll conducted is to present them to the public stances in relation to the barriers with which individuals with disability in the Republic of Macedonia face every day.

The investigation encompasses a sample of 62 respondents, 31 persons of the population survive on parent and 31 persons with disability in the Republic of Macedonia. Descriptive and comparative analyses are used as a method.

The data were processed with a standard statistical program SPSS for Windows XP, using Chi square test and RxC contingency tables. For statistically significant difference we have considered the difference in the level of significance of $p < 0.05$.

The analysis of the given results showed us the stances of the public opinion, that the people with disabilities every day meet certain barriers. Since the population survive on 58% of respondents are not acquainted with the rights of people with disabilities. The highest percentage of both categories of respondents (45.2% of parents and 54.8% of the general population) believes that all categories equally are faced with barriers.

From this analyze we can conclude that it is necessary to carry out the education of the broader public for the rights and capabilities of individuals with a disability.

Keywords: people with disabilities, public, barriers, Republic of Macedonia.

1. INTRODUCTION

In the society where we live, there were and still there are people with disabilities, whose integrity as a human being is threatened and by that they are disabled to become part of the society. The stance toward the position of the individuals with a disability in general in the society was changing throughout the history and evolved from rejective and unfriendly to the tendency of normalization, in their own treatment, as well as their integration into the society. Right to live in the society represents a basic right for all people with disabilities.

The society as a system has four basic needs: adaptation to the physical environment, the need of stimulation with the purpose to establish roles necessary for providing the collective survival, the

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members of the society should be aware to establish common relationships considering family members, schools, institutions and the society (Tasheva, 2003).

In order to live independently and to be included in the society in general, the government should take any responsible measures, where the people with disabilities will be able to enjoy their rights to full Community involvement and participation in general (CRPD, Convention on the right of people with Disabilities).

The person with disability is always in a quiet conflict with the society. The primary attitude towards the people with disabilities is still negative. People are always criticizing, mocking for inability to perform „normal" activities, overacting etc. The environmental negative reactions result as a sense of failure and hopelessness (Jean, 2006).

The worldwide stigmatization and discrimination represent general barriers for the social inclusion of people with disabilities (Ajdinski, 1999).

All these barriers that people with disabilities are facing are product of the social attitudes, negligence and stereotypes for their possibilities and needs. The changes towards the knowledge and the attitudes are important factors in their society that have big influence in many areas and services in the society. The purpose of building many reachable areas for disabled people is necessary for the people to become aware and to change their public opinions (Kaye, 2000).

The people with disabilities are numerous, but they are still defining as certain people with psychophysical anomalies, that concern their integrity as human beings and disabled them to form, to declare and fulfill themselves as a equal members of the society (Cardol and Brandsma; Groot, 1999).

The parents are unsatisfied of their expectations and they should reorganize the whole concept for the future and be able to adapt to the condition of the child. Usually, the society is well intended towards the disabled people families (Trajkovski, 2008).

The people with disabilities are facing many barriers, starting from education, employment, disabled access to public places, lack of support services necessary for managing their daily activities (Howitt, 2003).

Despite limited conditions for adapting the demands of the environment, the people with disabilities must fight with insecurity because of belonging to marginalized group, and at the same time with the control of their parents, professionals and other factors (Keys and Balcazar, 1996).

2. SERVICE – LEARNING

Through this our study believe that will contribute to advancing the general knowledge of the problem, the daily barriers faced by people with disabilities. The aim of our study was to determine the views and opinion of the general public in the Republic of Macedonia for the barriers faced by people with disabilities.

Rapid and complex changes in the social, economic and political life that occurred in the last quarter of this century, contributed to a more efficient approach, critical thinking and basic learning in public to identify many problems in the community. All this is possible through organized workshops, public events and opportunities for critical thinking.

When interviewing the public through questionnaires and open discussion, we established interaction and detected attitudes and opinions on the barriers faced by people with disabilities. Communication was open and accessible to all walks of life that are important to people with disabilities and their overall life. Contacts with parents and the general population of people with disabilities presented us valuable source of information about the current awareness of

opportunities, rights and barriers encountered by people with disabilities in the the Republic of Macedonia.

Through direct communication with the public, I think that it originated their individual potential and interests, and social policy in society. Through open discussion with the public, it was mentioned that you need to provide equal opportunities; non-discrimination and people with disabilities have the same rights as the rest of successful participation in society. We hope that the results of the research will contribute to bolstering the positive attitude towards these people, which is the basis for activation of the required factors in society and to achieve the same rights in society as everyone else. Society would be considered as human only when the public shows understanding and provide support for people with disabilities.

The study will contribute to improving the care and support of people with disabilities as by conducting questionnaires and open discussion is actually established education, expansion of knowledge, awareness and information to the general public in the Republic of Macedonia.

However, the movement against marginalization, discrimination and many other barriers grew significantly in recent years in R. Macedonia. The community through the many workshops and public events contributes to solve everyday problems faced by people with disabilities and to improve their participation.

3. METHODOLOGY

Subject to this poll, the stances and opinions of the public in relation to the barriers faced by young persons with disability in the Republic of Macedonia, more precisely at individuals with intellectual cross pollution, individuals with the damaged vision, the individuals with the damaged hearing and people with physical anomalies

The aim of the survey is:

- To present to the public stances of the barriers which people with disabilities are facing in the Republic of Macedonia.
- To be compared stances and opinions of the public to the level of the problems which people with disabilities are facing.

Within our research we used: descriptive and comparative methods.

Descriptive method that we used to describe the kept examined appears (characteristics of the everyday life among young people with disabilities, the barriers which are facing in the society, and the attitudes of the public for the barriers faced by people with disability).

So the method of comparative analysis is done comparing the received answers among the two groups of respondents.

We used questionnaires as technique to survey respondents from the general population and families of people with disabilities.

Before the beginning the following was performed: identifying and defining the problem and preparing the plan for the course and the conducting of the research. After the construction and checking of declarations, we started formulating the sample, which began collecting data.

4. RESULTS AND DISCUSSION

Based on data obtained from the survey, the following can be analyzed and interpreted.

Given that they were applied two types of questionnaires, will be presented the results obtained from the parents of people with disabilities and the general population to determine their attitudes

and opinions about the barriers faced by everyday people with disabilities in the Republic of Macedonia.

Table 3.1.

Parents					
Attitudes	Yes	No	Don't know	Accompanied by	Summary
High education	19(61%)	6(19%)	6(19%)	0(0%)	31
Night clubs	16(52%)	4(13%)	0(0%)	11(35%)	31
Administrative services	15(48%)	0(0%)	0(0%)	16(52%)	31
Public transport	16(52%)	4(13%)	0(0%)	11(35%)	31
Communication barriers	24(77%)	2(6%)	5(16%)	0(0%)	31
Summer vacation	23(74%)	8(26%)	0(0%)	0(0%)	31
Establishing heterosexual relationship	21(68%)	5(16%)	5(16%)	0(0%)	31
Visiting cultural manifestations	22(71%)	4(13%)	5(16%)	0(0%)	31
Number of friends	18(58%)	11(35%)	2(6%)	0(0%)	31
Going for a walk	28(90%)	0(0%)	3(10%)	0(0%)	31
Employment barriers	28(90%)	0(0%)	3(10%)	0(0%)	31
Summary	230	44	29	38	341
P	0,000000				
S.E.	0,000000				

For the questions of the parents' attitudes in relation to the barriers which they are facing, the young people with disabilities were surveyed (31 parent). All surveyed parents have given their opinion in the table below.

Table 3.2.

Social population awareness				
It is necessary to:	Yes	No	Accompanied by	Summary
People with disabilities to attend high education	20(65%)	11(35%)	0(0%)	31
People with disabilities to have access to vacation destinations	12(39%)	4(13%)	15(48%)	31
Do you know the rights of the people with disabilities?	13(42%)	18(58%)	0(0%)	31
Do you agree your child to sit next to disabled child?	22(71%)	9(29%)	0(0%)	31
What does special educator mean?	24(77%)	7(23%)	0(0%)	31
Is disability contagious?	0(0%)	31(100%)	0(0%)	31
Do you communicate with people with disabilities?	25(81%)	6(19%)	0(0%)	31
Do you make fun of people with disabilities?	0(0%)	31(100%)	0(0%)	31
Should people with disabilities conduct with motor vehicle ?	5(16%)	8(26%)	18(58%)	31
To have disabled roommate?	26(84%)	5(16%)	0(0%)	31
People with disabilities to have equal working rights?	20(65%)	11(35%)	0(0%)	31
Summary	167	141	33	341
P	0,000000			
S.E.	0,000000			

All respondents from the group of the general population gave combination of answers. Actually, through the analyzed data, the table shows the attitudes of the public population toward barriers that young people with disabilities are faced to.

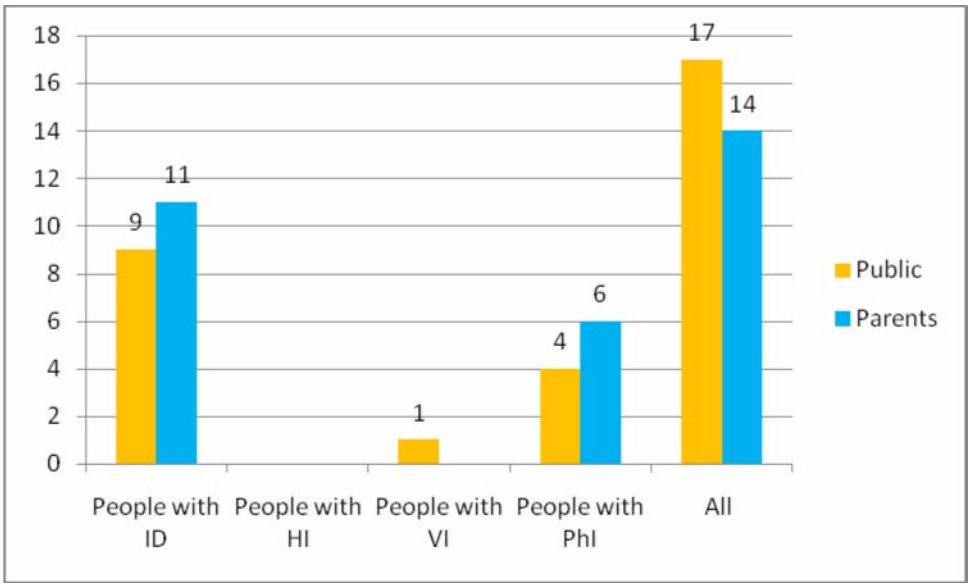

Figure 3.1.

Figure 3.1. 62 subjects gave their opinion on the frequency of barriers to people with disabilities. The highest percentage of both categories of respondents believes that all categories of disabilities are equally faced with barriers.

5. CONCLUSION

The relationship of social environment on people with disabilities can clearly be considered as social isolation, discrimination in respect of their dignity, disadvantage and specificity. Young people with disabilities in the Republic of Macedonia don't always have conditions and possibilities for active participation in many areas in the daily life as the rest of the citizens.

The biggest problem for this population represents integrating in this society as adults. Very often, the society ignores these people and disables their daily routine, they put them in awkward position and often they live in poverty on the edges of the society.

People with disabilities daily encounter certain barriers and they usually stem from negative attitudes and prejudices of the social environment, lower educational achievement, communication, employment, lack of public accessibility, inadequate policies and standards, as well as many others.

Public attitudes, inaccessibility of the environment and society, together with the difficulties in getting adequate services intercept their diverse needs and are always subject to discussion. Inaccessibility of the local environment is one of the crucial barriers in participation of people with disabilities.

The frequency of these problems in the respondent population would have goal to identify them and to take measures for improving the quality of living.

In the future, it is necessary to educate the public about the rights and opportunities of people with disabilities, to provide them with adequate information, to enable contact and acquaintance with people with disabilities, which will raise public awareness and people with disabilities will experience as a entire person.

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6. THE PROPOSED MEASURES ARE AS FOLLOWS:

- Raising of the individual and collective consciousness of the citizens to understand the opportunities and needs of people with disabilities. It is possible to raise the citizens' awareness through using mass communication.

- Developing of activity and family support programs, mobile services and services that support the integration of people with disabilities in the society.
- Organizing more meetings among parents with disabled children for exchanging positive experience.
- Regularly informing the families where there are people with disabilities, about their rights and obligations.
- Creating conditions for participation in the social life, accessibility and equal opportunities in the political, economic and social area of the daily life.

LIST OF ABBREVIATIONS/ACRONYMS

CRPD	Convention on the right of people with Disabilities
p	Level of significance
PwDs	Persons with Disabilities
PwHI	Persons with hearing impairments
PwID	Persons with intellectual deficit
PwPhI	Persons with physical impairments
PwVI	Persons with visual impairments
S.E.	Standard error
UN	United Nations

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Students with Disabilities in the Higher Education at the Ss. Cyril and Methodius University in Skopje

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Abstract:

Introduction: *Students with disabilities are students who due to illness or impairment (regardless of the disability) have difficulties to accomplish their everyday academic activities (students with sight, hearing impairment, physical disability, chronic illnesses, psychological disturbances, and specific learning difficulties). (Rulebook on the organization and operation of the Institute for students with special needs, University of Zagreb, 2007).*

Methods: *In this study we surveyed the employees in the student service departments and students with disabilities at 22 colleges of the University Ss. "Cyril and Methodius" in Skopje. The data obtained the survey are grouped, tabulated, processed and graphically represented using the program Microsoft Office Excel 2003.*

Results: *From the results obtained from the employees in the student service departments, many universities have architectural barriers, which is a major problem for students with disabilities, even though they are exempt from paying the fee. Much of the analysis of the responses of students with disabilities indicated also of architectural barriers and difficulties in acquiring the material, but also many of them indicate that students with disabilities are accepted by their colleagues, which is a favorable environment for their advancement.*

Conclusion: *In 2010/11at the University of Ss. "Cyril and Methodius", 47 students with disabilities are recorded in the student archives. They still face architectural barriers and difficulties related to learning materials and the opportunity to choose the desired faculty.*

Keywords: Students with disabilities, Higher education, Quality of education

1. INTRODUCTION

Every person aspires and endeavors to achieve the established goals in life, being in the same time satisfied with the quality of the achievements and with the path walked while achieving the goals. This is especially important when a person is a student, when the priority is focused on the quality of education and mode of its realization.

A student does not only involve passing through the education process, but also setting priorities that need to be followed. In the course of the process, students face new situations, make their own decisions and take certain responsibility. Each of these aspects implies its own burden, and the burden becomes greater when students with disabilities are at stake (2).

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The higher education has undergone significant changes since the mid-1980s. As the student numbers and responsibility increased, the educational funding has decreased. Students with disabilities have to enjoy equal opportunities as the other members of the community and take active participation with their full potentials in the educational, social, political and cultural activities in the community. (This entails that the community should enable persons with disabilities to participate and receive appropriate services supported by the laws regulating these activities (National strategy for equal opportunities of persons with disabilities 2010-2018, Skopje, Ministry of Labor and Social Policy, 2010, p.3) (5).

The entire society, not only in the world, but in our country as well, seeks to improve the quality of education for students with disabilities starting with the adoption of laws and regulation aimed at education of students with disabilities. In the end of 2006, the United Nations adopted the Convention on the rights of persons with disabilities (1). Its Article 24, paragraph 1 points that: "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..."

The Convention has been promoted in Skopje by the National coordination body for equal opportunities of persons with disabilities, and was ratified by the Government of the Republic of Macedonia in 2007 (6).

Thus, Republic of Macedonia has also been dedicated to improving the higher education of persons with disabilities by endorsing conventions and adopting its own legislation. Through government, faculties need to be adjusted in terms of physical accessibility and the tuition.

The rights of persons with disabilities in the Republic of Macedonia are regulated by the Law on Primary Education (Official Gazette no. 44/95, 24/96, 34/96, 35/97, 82/99 and 2002), Law on Secondary Education (Official Gazette no. 44/95, 24/96, 35/97 and 82/99) and the Law on Higher education (Official Gazette no. 64/2000) (4).

Law on Higher Education, students and doctoral candidates without parental care, blind, deaf, disabled first and second category are given special benefits provided by the statute of the higher education institution (7).

2. RESEARCH METHODOLOGY

In the survey I had an opportunity to discover some of the opinions of students with disabilities about higher education and the problems they face. Most of them agreed that they were faced with many problems which could be resolved for improving their education.

We would like to emphasize a conversation with one of the students who strongly believes that she can be a good student, equal to her colleagues with or without disabilities. When I asked her if she wants to answer a few questions about students with disabilities in higher education, she said that she was happy to have the opportunity to participate in such a research. Many of them were positively surprised that a student without disabilities wants to help improve their higher education.

We talked about architectural barriers in faculties facilities that they face, but also explained that the faculties strive to resolve the problem, that the elevators and ramps should be installed, so students with disabilities will have the opportunity to enroll with preferred faculty.

Also we discussed that during the survey, all employees of the University said that they strive to improve their education and their ability to help students with disabilities.

After the survey, all students said that they want to stay in touch and want to continue to cooperate.

2.1. Research aim

The aims of this research are the students with disabilities and their quality of life in the higher education at the Ss. Cyril and Methodius University.

2.2. Research objective

The research objective is to identify the number of students with disabilities, as well as their quality of life in terms of higher education.

2.3. Research tasks

The research task is to determine the number of students with disabilities at the individual faculties, as well as their quality of life in the higher education at the faculties within the Ss. Cyril and Methodius University.
To fulfill the established objective, the following needs to be determined:

- Number of students with disabilities at the faculties within the Ss. Cyril and Methodius University
- Accessibility (architectural barriers), both in the outer space and in the interior of the faculties
- Studying method of the students with disabilities
- Examination method for the students with disabilities
- Difficulties in mastering the study material
- Acceptance of the students with disabilities by their peers and professors
- Activity of the students with disabilities during lectures and exercises

2.4. Hypotheses

Based on the research objectives and tasks, the following hypotheses are established:
X0 - It is assumed that through interviews of the research sample, the number of the students with disabilities will be determined and their quality of life in higher education at the faculties within the Ss.Cyril and Methodius University.
X1 - It is assumed that the architectural barriers have not been eliminated in the exterior and interior of the faculties.
X2 - It is assumed that students with disabilities have no difficulties in mastering the study material.
X3 - It is assumed that students with disabilities are exempt from participation fee.
X4 - It is assumed that the examination method for students with disabilities is equal as with the wider student population.
X5 - It is assumed that students with disabilities are well accepted by their peers.
X6 - It is assumed that students with disabilities encounter no problems during lectures and exercises.

2.5. Sample

Two groups of respondents are included in the research:

- The first group consists of employees in the student service departments at the Ss. Cyril and Methodius University in Skopje.
- The second group consists of students with disabilities at the Ss. Cyril and Methodius University in Skopje.

2.6. Research methods, techniques and instruments

Methods:

- Causal method
- Descriptive analysis method
- Comparative analysis method

Techniques:

- Surveys

Instruments:
Two types of survey lists were used in the research:

- Survey list aimed at the employees in the student service departments - includes 10 questions, yielding data on the number of students, disability nature, student age, examination method and accessibility of the faculties within the Ss. Cyril and Methodius University.
- Survey list aimed at the students with disabilities - includes 14 questions, yielding data on the students' rights, concerns, acceptance by their peers and professors, problems encountered while mastering the study material and practical exercises, and the prospect of enrolling at another faculty.

3. ANALYSIS OF THE RESEARCH RESULTS

3.1. Analysis of the data obtained from the student service

For this category of respondents, a questionnaire with 10 questions was used. The gathered data will be presented graphically and each of the questions will be explained individually.

The first and **the second question** concern the names of the faculties and the number of the enrolled students with disabilities. A total of 47 students with disabilities are recorded in the student archives of the 22 faculties at the Ss. Cyril and Methodius University in Skopje.
Out of the total of 47 students with disabilities within the Ss. Cyril and Methodius University, 30 students or 63.8% have physical disabilities, 2 students or 4.2% are hearing impaired, 5 students or 10.6% are visually impaired, 5 students or 10.6% have chronic diseases and 5 students or 10.6% have combined disabilities.

According to the information obtained from the student services at the faculties about the question which refers to the age of the students with disabilities, 19 students with disabilities or 40.4% are in their I (first) year of studies, 9 students or 19.1% are in their II (second) year of studies, 5 students are in their III (third) year, 11 students or 23.4% are in their IV (fourth) year, and 3 students with disabilities or 6.4% are in a master's degree program.

The research obtained good results in terms the method of study of students with disabilities. Based on the obtained responses from the student services, only the students with disabilities who are registered with a finding and opinion of the Office of Mental Health are exempt from payment of the participation fee. Some of the respondents also gave the following answer: *"The students with special needs at our faculty who had the necessary documents are exempt from payment, but I think there is one or two of them who perhaps due to embarrassment or other reasons pay regularly as other students."*

The most important thing in terms of quality of education of students with disabilities is the question of overcoming the architectural barriers at University. The following results were obtained which apply to all the faculties of the Ss. Cyril and Methodius University: in 19% of the faculties the architectural barriers have been fully overcome, in 19% of the faculties the architectural barriers have been partially overcome, while the largest percentage or 62% of the faculties have still not overcome the architectural barriers.
From this research we obtained insight regarding the independence of students with disabilities completing the documents for registration, semester validation, etc. The following results were obtained: 78.6% of students with disabilities at all faculties independently fill out the documents, while 21.4% have assistance by another person.

3.2. Analysis of the data obtained from students with disabilities

This group was comprised of 31 randomly chosen students with disabilities from all 22 faculties at the Ss. Cyril and Methodius University in Skopje.

This research covers and the examination method. The analysis of the answers by the students with disabilities was as follows: 64.5% of them said they take the exams both in writing and orally, 19.3% of the students take only written exams and 19% of the students with disabilities need additional assistance.

The issue *"Are you satisfied with the rights ensured for students with disabilities by the faculty?"* only 3.3% of the students are satisfied with their rights, as many as 38.7% are not satisfied, while 58% are only partially satisfied with the rights ensured by their faculty.

In terms of independence in the selection of faculty that they will attend, 90.3% of the students did make an independent decision, and only 9.7% responded that someone else influenced their choice of faculty, which indicates their independence.

The analysis of the data obtained from students with disabilities led to the conclusion that only 19.3% of them are on a scholarship, while 80.7% do not receive any kind of scholarship, which is not a good motivation for achieving better results.

The issue: *"Are you accepted by your fellow students?"* 74.2% of the students with disabilities said that they were accepted by their fellow students, 16.2% said they were not accepted, and 9.6% said they were partially accepted. This was one of the responses: *"I have been accepted by those fellow students who have understanding for students with disabilities; the others do not interest me."*

One of the questions refers to the difficulties with the study material. 48.4% of the students responded they had difficulties with the material, 45.2% did not have difficulties and 6.4% had partial difficulties with the study material.

Among the students who reported having difficulties, the most common reason for difficulties was the volume of the material, followed by an incomprehensible material and technical difficulties.

In terms of receiving assistance in learning the material, 6.5% of the surveyed students said someone does help them with the study material, 70.9% of students said that no one helps them with the material and 22.6% said they receive partial assistance with the study material.

In terms of having difficulties with the practical exercises, 77.4% answered they had no difficulties with the exercises and 22.6% said they did have problems with the practical exercises.

Interesting results were obtained on the question: *"If you had the chance to enroll to another faculty, would you do that?"* 61.3% said they would enroll to another faculty, 6.4% said they would not, and 32.2 % said that they might enroll to another faculty.

4. CONCLUSIONS AND RECCOMENDATIONS

4.1. Conclusion

By analyzing the research data, the following conclusion was drawn:

- The zero hypothesis was confirmed, because by doing this research we were able to get a clear picture of the number of students with disabilities at the Ss. Cyril and Methodius University in Skopje - which is 47 students. We have also managed to get an idea on the quality of life in terms of the studying method, examination method, the elimination of the architectural barriers, acceptance by the peers, difficulties with the material and the practical exercises etc.
- The first hypothesis concerning the elimination of architectural barriers is confirmed, because according to the analysis of data and the calculated X^2 which equals 3.52 at level of significance p = 0,172 there is no statistical significance between the responses of the student

services and the students with disabilities. Furthermore, according to the responses by employees of the student service, the architectural barriers have not been eliminated in 62% of the faculties. However, according to the students with disabilities, the architectural barriers have not been eliminated in 35.6% of the faculties. One student even said: *"Certain faculties in Macedonia must keep in mind that there are young people who want to stand out and make progress. Therefore, special attention must be paid to the architectural barriers, because there are many intelligent people with disabilities who are obstructed by these barriers that still remain unnoticed."*

- The second hypothesis, concerning the difficulties in mastering the study material is not confirmed, because 48.4% of the students with disabilities said they had difficulties with the material, due to its volume, incomprehensible material and technical difficulties.
- The third hypothesis is confirmed because all students with disabilities at the Ss. Cyril and Methodius University are exempt from payment of participation fees and they, like all the other students, are either full-time or part-time students.
- The fourth hypothesis is likewise confirmed because according to the calculated X^2 which is 0.474, there is no statistically significant difference between the responses of the employees of the student services and the students with disabilities, at a level of significance $p = 0.789$.
- The fifth hypothesis is also confirmed, because the analysis of the data obtained from students with disabilities shows that 74.2% of them are accepted by their colleagues.
- The sixth hypothesis is similarly confirmed, as 77.4% of students with disabilities have no problems with the practical exercises and are equally treated as the students of the general population.

4.2. Recommendations

In order to improve the quality of education for students with disabilities, as well as to increase their number, the following is needed:

- Increase awareness on the education opportunities and rights of students with disabilities;
- Enable better access to faculties for the students with disabilities, and in particular eliminate the architectural barriers;
- Open a student service designed for students with disabilities on each of the faculties;
- Create a coordination body within the faculties of the Ss. Cyril and Methodius University that will keep track of the status of students with disabilities;
- Hire personal assistants;
- Set up a disabled students union;
- Adjust the examination method where necessary;
- Adjust the study material with the type of a student's disability;
- Approve scholarships for students with disabilities, one of the expected effects being student motivation;
- Motivate student organizations, NGOs and local self-government to lobby with the relevant government institutions for an improved living standard of the students with disabilities.

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Opinions and Attitudes of Parents and Students for Sexual Development and Sexual behavior of persons with autism

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Abstract:

Persons with autism can experience severe issues during the puberty and adolescence, which originates from the changes which occur in their body. Sexual expression in individuals with autism may easily be misunderstood as aberrant and it may affect their socialization and normalization.

The aim of this research was to present the opinions and views of the parents and the students about sexual development, behavior and gender identity among the persons with autism. This research includes 94 subjects, conducted in Skopje in 2009.

Persons with autism, have no information or knowledge about the sex development and proper behavior, genitalia hygiene, relationships with the opposite gender, sexual transmitted diseases. Within the family environment, parents do not know how to react or how to behave when the hormonal outbursts happen during the puberty. Most parents do not discuss this matter at home. Additionally, the professional staff included in the education and treatment, do not possess enough knowledge to teach children with ASD about sexuality.

Based on the results of the research we can conclude that: it's necessary to organize educational trainings for parents and professionals, so they could manage growing challenges in puberty and adolescence. Arrange meetings between the families for mutual exchange of experience and opinions establish national strategy and services that deal with the problem of sexuality and provide appropriate and sufficient sexual education for the children with autism in schools.

Keywords: persons with autism spectrum disorder, puberty, sexual development, sexual education.

1. THEORETICAL BACKGROUND

Sexual development and behaviours are important aspects of human development. Persons with autistic spectrum disorder (ASD) in the process of maturation are passing through the typical developmental stages as others. The adolescence (as transitional period between the childhood and the adult phase), describes dynamic and intense physical growth with variations in the emotional, cognitive and social components (Trajkovkski, 2011).
Autism is a pervasive developmental disorder affecting broad areas of human functioning. One such field is the sexual development of persons with autism. Sexuality is physiologically founded, developing throughout social interactions, play and communication and it embraces across social

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rules and norms. Adolescence has a significant impact on people with autism and leads to serious problems in sexual development and behavior. Sexual expression in persons with autism might easily be mistaken as deviant or inappropriate. These misinterpretations of behaviors together with restrictive community standards and values for sexual expression may put at risk the goals of inclusion of persons with autism into the society (Realmuto et al., 1999).

People with disabilities (PwDs) have the same diversity of sexual needs as the rest of the community. Usually have different life experiences and limited opportunities to learn which require assistance to understand the complexities of human relationships and the rights of sexuality and how this can be incorporated into their lives (Lawson, 2005).
Regarding the normal maturation of the genitalia, variety of biological factors may contribute to appearance of specific abnormal sexual behaviours among person with ASD. These factors are the following:

- Structural changes in the central nervous system
- Changes in the bio-electrical activity of the brain with additional manifestation of seizures or epilepsy
- Antiepileptic medicaments
- Metabolic disorders
- Hormonal therapy, etc.

The exceptionality of sexual behaviour of persons with autism is conditioned of their inability adequately to comprehend the biological body changes which happened during the puberty and adolescence, so they became anxious, agitated and sometime aggressive or self-aggressive (Glumbic, 2006).

Puberty with hormonal and brain activity modifications provoke sexuality. Persons with autism often experience rejections in the relationships with others (friends, lovers etc.). Even more, these people are going through frustrations, aggression or other self-centred behaviours. Persons might withdraw themselves or abandon the sexual desires and needs. Persons with autism are presenting early indications of sexuality and early sexual behaviours. Sexual life describes wild excitement similar to epileptic attacks and excessive sexuality and sensuality (Angelo et al., 2006).

There is diversity of disorders in sexual development among persons with autism such as: extreme and compulsive masturbation, fetishism, inappropriate touching of genitalia in public places, disorders in gender identity, frequent shifts in mood, failure in establishing relationships with other persons etc. (Howlin, 1997).

Children with ASD, as other "typically" developed children, have to be prepared for the body transformations occurring during the puberty and adolescence. The parents as primarily care givers, as well as other professionals involved in the therapy, must be "role-models" and teacher for their children. Sexuality and teaching start since birth. Potential topics for sexual education are the following: body and body parts (physical modification during the puberty and adolescence); distinguishing familiar and unfamiliar people, as well as differentiation between male and female; intimacy and private space; types of sexual expressions; partying-relationships-marriage-parenting, sexual transmitted diseases and so on.

Sexual education is dynamic and long-lasting process running through each stage of the life. Implementation of sexual educational programmes must corresponds with the intellectual abilities, the nature of the disorder, certain sexual expressions, the person's age, knowledge, preferences and experiences (Glumbic, 2006).

2. RESEARCH METHODOLOGY

Research goal: The goal of the research was to present the attitudes and opinions of (1) parents who have children with autism and (2) special needs education students about sexual development, behaviour and gender identity among persons with ASD. Gained reflections will be powerful tool

for implementing effective service-learning concerning sexual development as critical aspect in growth and daily life, particularly among persons with autism and their families.

Sample: the research includes 94 participants distributed in 3 groups. The first (experimental) group contains 31 parents of children with autism. The second (control) group involves 31 parents with children with intellectual disabilities and the third group consisted of 32 special needs education students. The examinees are not equalized by sex, age and level of education. The research was conducted in 2009.

The study used causal method and method of descriptive analysis. As for techniques and instruments, document's analysis and questionnaires were used. The timeframe for interviews was approximately 30 minutes.

The information from the research was stored, grouped and processed with standard statistical program Microsoft Office Excel 2003. For the categorical data differences between the groups, they were analyzed with $\chi 2$ tests and Fisher's Exact test. As significant we tour the differences with level of consequence from $p>0.05$.

3. RESULTS AND DISCUSSION

Regarding the question do you talk with your child about sexuality; *does he/she gain information from you about this matter*, 9.7% of the parents with children with ASD responded positively, they are discussing but only if the child is interested or show some initiative to do so. Figure 1 display the distribution of the answers by categories:

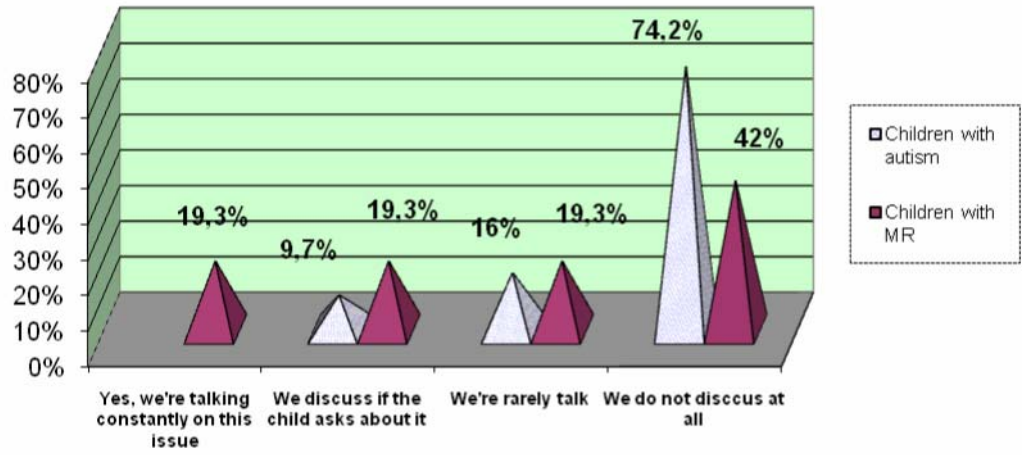

Figure 3.1. Discussion between parents and children

During the interview, parents were asked to state if their child acquires knowledge about sexuality from other resources or people. The analysis showed that besides parents, the media are the second most frequent source for getting knowledge from. The most disappointing fact is that the children are not receiving any sexual education from the teachers at school. Usually PwDs are not obtaining sexual education in any form, neither in schools, families nor from their peers. In addition to this notice, children with ASD have very poor or no knowledge at all about what appropriate sexual behavior and interactions, body transformations in puberty, intimacy, sexual relationships mean and imply for.

The necessity for suitable sexual education in schools and institutions are inevitable, which has been presented by the high percentage of parents in both groups who want their children to learn about the issues stated above in schools. A high 74.2% of parents of children with diagnosed ASD answered positively. Moreover, special educators-students in 63% are acknowledging the need for

and require sexual education to be part of the national education curriculum for children with special needs.

Most common sexual behavior between persons with ASD is masturbation. 42% of the parents noticed this kind of sexual manifestation among their children.

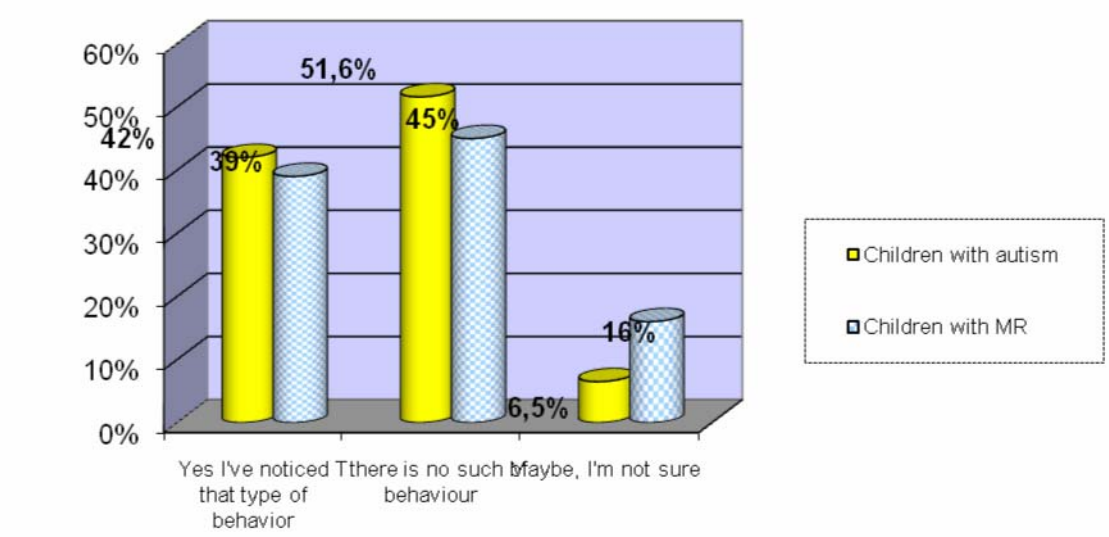

Figure 3.2. Appearance of masturbation

Concerning sexual expressions and behaviors, participants were questioned whether they will talk about or educate their children in case sexual behavior was observed. High 71% of parents said "**of course will do talk on these important subject**", which is promising figure in establishing and planning educational strategies for sexual development.

Parents of children with ASD and special educators-students involved in the study emphasized the lack of knowledge and experience regarding the sexual education of children with ASD. They find this matter very demanding and do not know how to cope with the challenges that sexual development brings. 67% of parents definitely require provision of trainings for managing puberty and sexuality, and even 83% of the students want additional educational teaching instructions about sexual education of children with special needs. Parent`s answers are represented in table 1:

Table 3.1. Education/training for parents

Examinees	**Definitly, I do need training or instructions**	**No need**	**Maybe, I'm not sure**	**Summary**	**p**
Children with autism	21(68%)	1(51,6%)	9(29,5%)	31(100%)	
Children with ID	20(64,5%)	2(6,5%)	9(9,7%)	31(100%)	
Summary	41(66,1%)	3(4,8%)	18(29%)	62(100%)	p=1,0

The results from this research opened a lot of questions and discussions about sexual development of persons with ASD. According the analysis, these persons do not comprehend the concept of sexuality which is expected having in mind the insufficient amount of knowledge acquired from their family and professionals. The situation within the family is disappointing, because the home should be place where children are safe and their well-being is cherished. Parents often feel

discomfort or embarrassment discussing sexual relationships and intimacy with their children. The current situation needs to be changed in order for the family to be a safe surrounding to provide these experiences at early stages.

4. CONCLUSION AND HELPFUL STRATEGIES

Persons with ASD are sexual beings; therefore they are expressing sexual behaviors. The appropriate education of families and professionals on this area could ensure proper development and inclusion of persons with ASD into society.

In accordance with the results from the research, list of strategies is suggested as a tool in educational programs for children with autism considering sexual development:

- The best method for children with autism to explain and clarify the body modifications during puberty and adolescence is visually by using images, picture books and videos. Social stories are ideal for these kinds of situations.
- If the child is verbal aim to respond accurately and appropriately to child's developmental age. Avoid using nicknames about body parts and keep answers brief and simple. Chose only one word to signify each body parts. Teach about gender differences.
- The essential fundamentals of teaching you should focus on are:
  1. My body – What are the parts called and what are they used for?
  2. Hygiene – How should you properly cleanse yourself and why is that important?
  3. Sexual awareness – What is sex, what is acceptable behaviour and when is it acceptable?
  4. Boundaries – What boundaries should we have for our bodies, as well as when interacting with others?
  5. Who, When, Where and How of sex, sexuality and personal boundaries (Wadell, 2006).
- Ensure that all caretakers are consistent with the response and redirection to where everyone uses the same words each time.
- Some individuals with autism may need specific instructions about social expectations. For these individuals, it is important to provide them with an abundance of information about social values and restrictions. Role playing, discreet reminders when in public and observation are all helpful.
- Observe the child when the behavior occurs to assist in what may trigger it. For instance, noise level of environment, separation from parent, end of day, at rest time, anxiety, being excluded by other children, etc.
- Redirect the child to an activity that will distract them from masturbation or other sexual behavior.
- If the child is exhibiting sexual behavior in front of others respond, teach them that it is private and special and he/she should wait till home and go to the toilet.
- Try to interrupt the behavior without displaying emotional reaction. Redirect the child to an activity that will distract them from masturbation.
- Provide the child with other ways to comfort themselves such as sensory materials, toys etc.
- Ensure that the child's clothes are comfortable and not too tight, too loose or curled in order to avoid sensory overload in the genital area.

5. SERVICE-LEARNING AND FURTHER STEPS

Initiating service-learning component within the educational course for special needs education students would represent persuasive tool kit for tackling issues regarding dynamic sexual maturing in PwDs. Assimilated and learned opinions and beliefs collected from the study might be used as starting point towards determination of the objectives of service-learning intend at the Institute of Special Education and Rehabilitation.

In our opinion, there are several elements in service-learning that need to be incorporated.

- University as academic platform is to be the fundament in this approach. Enabling sexual development in persons with disability classes comprised both theoretical and practical knowledge would enrich students' academic learning. Facilitating group assignments on different topics (for instance "How we can teach children with autism to maintain hygiene of genitalia" and so on), professors should stimulate students on discussions, problem-solving skills, creative and critical thinking.
- This class academic content in order to reach its full purpose has to be pragmatically integrated and implemented into the society. After significant amount of classes, students would have the opportunity to apply the gained knowledge in everyday settings.

The aim of this research in the time ahead is providing with the necessary aid for those families and students. How can we do that?

- Facilitate meetings and seminars where students may use different methods and concepts about sexual development to familiarize and educate families and parents how to cope with the growth and deal with the inappropriate sexual outbursts.
- Another modus is "one-on-one" consultations and "mobile" students, when students are going to parents' home for individual discussions and trainings. This modus can be structured in interim appointments.
- Raising awareness events and activities. Students together with parents are engaged in starting up campaigns through the media. Inform and educate local community about sexual life and needs of persons with ASD. Encourage people to talk more open about these problems and break the taboos and limitations that society has towards these people.
- Governmental financial support in prevention of abnormal sexual development and performances among persons with ASD.
- Establishing social services and/or civil society organizations whose purpose would be supporting and providing healthy and proper sexuality for persons with disabilities and their families.

Activities stated above, are considered as student`s extracurricular work which could be additionally awarded and part of their grade.

This way of education of special needs students seems to be very beneficial both for them (The University prepares students for future field work) and for the families who demand this type of help.

6. ADDITIONAL RECOMMENDED STRATEGIES

- Organize meetings and support groups for parents to communicate between each other, share experiences and thoughts.
- Provide families and schools with educational kits for home use.
- Establishment of resource centre for aiding families, prevention and treatment of sexual developmental and behavioural issues.
- Modification and revision of national education curriculum with sexual education classes for all pupils.
- Prevention of sexual abuse.
- Education of professional stuff who works with PwDs (regular teachers, social workers, psychologists, medical personnel and etc.) in the field of sexual development, detection and treatment of inappropriate sexual behaviours, considering the deficient knowledge among special educators.
- Enabling networking and collaboration between social services and available institution on treating sexual development and behaviour among PwDs.
- Partnerships and cooperation with countries with positive practices and experiences about sexual development among persons with ASD.

LIST OF ABBREVIATIONS/ACRONYMS

Please use the provided table for your list of abbreviations and acronyms. Do not change the provided formatting. The list of abbreviations/acronyms should contain ALL abbreviations used in your chapter.

PwDs	Persons with Disabilities
ASD	Autism Spectrum Disorders

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Strategies for Communication with People with High Functional Autism and Asperger's Syndrome

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Abstract:

Communication is defined as a process by which information is exchanged between individuals through a common system of symbols, signs, or behavior. It is an act by which one person gives to or receives from another person information about that person's needs, desires, perceptions, knowledge or affective states. To be successful communicators, we need to know how to interpret and respond to cues (body language, facial expressions, eye gaze, tone of voice) and how to use them by ourselves. For children with HFA/AS the ability to "tune in" to the thoughts and feelings of others often does not develop in the same way or at the same pace as other children. They have to learn that. The main objective of this paper is to describe the obstacles these people are facing during their every day communication and to present basic communication strategies that will help people without HFA/AS to establish and improve their communication with people with HFA/AS. This upgraded communication leads to better reciprocal interaction, which is the basics for social integration of people with HFA/AS.

Keywords: communication, HFA/AS, strategies.

1. INTRODUCTION

APA (American Psychological Association) defines Autism as the most severe neurological developmental disability, which means this condition affects the way the person develops (different brain development) and the way the person understands the world. It appears within the first three years of life and involves impairments in: communication, social interaction and restricted repertoire of activities, interests and imaginative play/development. (APA, 2012)

Communication:
The child displays problems in many aspects of the communication process, verbal and non-verbal:

- delay in, or the total lack of, the development of spoken language or speech
- if speech is developed, it is abnormal in content and quality
- difficulty expressing needs and wants, verbally and/or nonverbally
- repeating words or phrases back when spoken to (known as echolalia)
- inability to initiate or sustain conversation

Social interaction and awareness:
The child displays difficulties in relating to people, objects and events, resulting in difficulties in establishing and maintaining reciprocal relationships with people. The ability to use objects in an

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age appropriate or functional manner may be absent or delayed. The child may seek consistency in social events to the point of exhibiting rigidity in routines. Also it shows difficulties in recognizing and understanding other people's feelings, thoughts, beliefs and intentions and responding to the other person accordingly. Also poor use of body language and nonverbal communication, such as eye contact, facial expressions and gestures are present. Desire to be alone, not wanting to cuddle or be cuddled, not responding to verbal cues (acting as if deaf) are few more symptoms that characterize the picture of Autism.

Restricted repertoire of activities, interests and imaginative play/development:
The child demonstrates marked distress over changes, insistence on following routines and a persistent preoccupation with parts of objects or a fascination with repetitive movement (spinning wheels, turning the lights on and off). It also presents restricted range of interest and stereo-typed body movements (repeating words or actions, obsessively following routines or schedules and playing in repetitive ways). There may be a lack of interest or an inability to engage in imaginative activities. Normally developing children play by imagining scenarios and acting them out with toys. Children with autism do not. They have to be taught how to play this way, so they can expand their play by using their own imagination.

There are a number of associated features and behaviors that are seen in some people with autism:

Cognitive function:
Autism occurs at all intelligence levels. Although about 70% of autistic individuals have an intelligence quotient (IQ) below average, the other 30% have an average or above average intelligence. A fascinating cognitive phenomenon is the "Autistic savant" which refers to individuals with autism who have extraordinary skills not exhibited by most persons. It is associated with a phenomenal memory, which aids in the recognition of patterns in everything from musical rhythms to calendar counting. Around 5% of people with autism have this Savant Syndrome.

Behavioral symptoms:
- aggressive or self-injurious behavior
- noticeable extreme underactivity or overactivity
- throwing tantrums
- not responding to normal teaching methods
- having no apparent fear of dangerous situations

Some people with autism have limited interests, strange eating or sleeping behaviors or a tendency to do things to hurt themselves, such as banging their heads or biting their hands. (Schreibman, 2007)

The symptoms of autism may range from total lack of communication with others to difficulty in understanding others' feelings. Different people with autism can have very different symptoms. Autism is seen as a "spectrum" disorder, a group of disorders with similar features. One person may have mild symptoms, while another may have serious symptoms. The appearance of autism can vary from person to person. One person with autism may be very verbal, bright and engaged, while another is non-verbal, intellectually challenged and almost entirely self-absorbed. But they both have an autism spectrum disorder. Because of this range of symptoms, this condition is now called autism spectrum disorder (ASD). Currently ASD includes:

- Classic Autism (Autistic Disorder)
- Asperger's Syndrome / High Functional Autism
- Atypical Autism

Rates derived from studies written in English show that the current prevalence of autistic disorder varies from 0,7/10 000 to 21/10 000. In the United States , the prevalence of autism spectrum

disorders is now estimated at 37 in 10 000 children. Prevalence rates for ASD in Europe vary from 30 to 63 in 10 000 children. (Trajkovski, 2011)

1.1. Debate about High Functional Autism and Asperger's Syndrome

High-Functioning Autism (HFA) and Aspergers Syndrome (AS) are both part of the Autism Spectrum Disorder (ASD). The main difference between the two is thought to be in language development. In general terms persons with HFA were more classically autistic when they were young with significant language delay followed by the other typical autism symptoms. But, with early diagnosis and intervention their achievements have been really quite remarkable and so they are now, after the childhood period, classified as HFA. (Mesibov, Shea, Adams, 2001)

For those with AS they may not have been classically autistic in the preschool years, the signs were there, but not sufficient to alert authorities for diagnosis. Only when the children starts school with their age peers, the differences will be identified. But we may find that when the child is eight, nine or ten years old HFA and AS are the same in terms of needs: friendships, learning profile, emotion management, sensory sensitivity, motocoordination problems. Occasionally a child has been diagnosed with high-functioning autism in early childhood and this diagnosis has been changed to Asperger syndrome when they started school. Some diagnosticians are clearly of the view that Asperger syndrome cannot be diagnosed before a child starts school. Nevertheless, the debate as to whether we need two diagnostic terms is ongoing. In the current edition of the DSM, Asperger's is one of several subgroups of autism identified by separate labels. These are poorly defined and have generated confusion and subjectivity around diagnosis. (The National Autistic Society, 2012)

In the proposed revision of the fifth DSM edition, scheduled to be published in 2013, these subcategories are being discarded and the single diagnostic label of Autistic Spectrum Disorder will serve for all. (APA, 2011) Supporting the proposed revision of DSM V, further in this paper we will discuss these two conditions under same term HFA/AS, considering them as one.

1.2. Characteristics of HFA/AS

Individuals with HFA/AS generally display average to above average cognitive abilities and sometimes demonstrate superior intellectual skills. They develop good structural language skills. That is, they may speak in syntactically and grammatically correct structures. The content and form of language appear to be intact. It is the use of language for communicative purposes that are significantly impaired and sometimes inappropriate. In general HFA/AS is characterized by deficits in social interactions and restricted range of behaviors and interests. From the fact presented above, it appears that HFA/AS represents the mildest end of autism spectrum. However, HFA/AS cannot be regarded as a mild disorder, because of the severity of the social skills and behavioral limitations, related affective problems such as depression and anxiety. Individuals with HFA/AS often perceive their environment as nebulous, consisting of random, unpredictable, even threatening conditions. When they faced with unpredictability, children and youth with HFA/AS, who desire sameness to the greatest level possible, become easily stressed and emotionally vulnerable. As such, persons with HFA/AS are at an increased risk of tantrums and aggressive outburst, as well as depression and suicide. Many individuals with HFA/AS are under great deal of stress during the most of the day. In light of their struggle to understand even the most elementary social and communication skills, to cope with problems, planning and organizing and to deal with major difficulties, understanding emotions and abstract concept, it is easy to appreciate why many of these individuals are chronically stressed and why sometimes they develop problem behaviors in response to all that stress. From this perspective it is important that everyone is cautions when thinking of HFA/AS as only a mild form of the large autism spectrum. (Sansanoti, Powell-Smith, Cowan, 2010)

Even though, individual with HFA/AS do not have significant delays in language development that is typically found in people with Autism, they may show other behaviors and signs similar to what is seen with other types of autism:

- delay in motor skills
- lack of skill in interacting with others

- little understanding of the abstract uses of language, such as humor, metaphors, irony or give-and-take in a conversation
- obsessive interest in specific items or information
- strong reactions to textures, smells, sounds, sights, or other stimuli that others might not even notice, such as a flickering light

Unlike people with other forms of autism, people with HFA/AS want to be involved with others. They simply do not know how to go about it.

Many people assume that just because these children can talk and many do so quite well, that they have no real impairment except for the fact they are bit "socially awkward and socially clumsy". But they are so wrong! There are many challenges faced by HFA/AS children and their families. They may learn better coping skills and social skills, but they will never grow out of it.

Self care deficits: Even though individuals with HFA/AS are physically able to take care of themselves, they often have some self-care deficits. These deficits are not because they do not know how or from being lazy, but rather these deficits are often due to the fact that they do not think to do them. This is often believed to be because it does not register with them the way it does with you or me. We naturally feel the need to shower, brush our hair and our teeth on a regular basis. But for someone with high functioning autism, unless it is part of their own routine, it will not occur to them to do these tasks on a regular basis. Also when they get involved in their special interests, they simply forget about everything else.

Safety: Even though these individuals are considered high functioning, personal safety is very often mildly to severely impaired. One reason for this is that these individual often have no real sense of danger. This varies from individual to individual.

Changes in routines: Individuals on all ends of the spectrum have their own little routines and ways they expect things to be. When plans change and their routines are interrupted, they are at best unpleasant to be around. Unexpected changes or unwanted ones can throw them off completely.

Sensory issues: Many individuals are sensitive to many things within varying degrees (touch, colors, smells, sounds, lights, textured etc.). This will cause them to avoid certain foods, materials and places. With many individuals, sensory information comes in unfiltered. Often these individuals become overwhelmed in public and experience sensory overload causing a meltdown.

Meltdown: Meltdowns are not the same thing as a temper tantrum. There are distinct differences. A meltdown is when individuals loose all control of themselves. They may throw things or fall to the ground kicking and screaming, or engage in self-injurious behaviors during such as head banging, biting themselves, or punching themselves repeatedly. Meltdowns are caused by an accumulation of factors such as frustration, verbal over load (being given too many verbal instructions at once), sensory over load, unexpected change routine, and trouble understanding or communicating something.

Obsessions: Individuals on the spectrum usually become obsessed with a particular object or subject. Playing with the object or exploring and talking about the subject will dominate 99 percent of their activities and conversations.

Sleep: Many individuals with HFA/AS have sleep issues. They may be up late into the night and wake up within a few hours. They usually wake up several times in the middle of the night. The lack of adequate sleep increases likelihood of meltdowns and they become frustrated easier.

Anxiety: A surprisingly large number of individuals with HFA/AS also have a high rate of anxiety that may manifest as odd or unusual phobias. Some individuals will suffer from severe separation

anxiety. Stranger anxiety is also common among individuals the spectrum. No matter what form the anxiety takes it can be very challenging to deal with.

Isolation: Individuals with HFA/AS are often socially isolated and have few if any friends. Some may not even want friends. While others want friends but struggle to make and keep them.

Stimming: Stimming is short for self-stimulatory behaviors. These are a series of repetitive behaviors such as rocking, pacing, head banding, hand flapping, chewing, object watching, objects spinning or spinning one self. This is done to help regulate oneself during times of extreme emotions or over stimulation. (Wrong Planet,2012)

2. HIGH FUNCTIONING AUTISM AND ASPERGER'S SYNDROME COMMUNICATION AND RELATIONSHIPS

Communication is defined as a process by which information is exchanged between individuals through a common system of symbols, signs, or behavior. It is an act by which one person gives to or receives from person information about that person's needs, desires, perceptions, knowledge or affective states. (Oxford Dictionaries, 2012)

Successful communication does not depend only from the ability to use words. Body language, facial expressions, eye gaze, tone of voice – these non-verbal cues can often tell us more about what people think and feel than the words they use. To be successful communicators, we need to know how to interpret and respond to these cues, and how to use them ourselves. Most children begin paying attention to non-verbal cues as infants when they search their parent's faces for support and acknowledgement. For children with HFA/AS the ability to "tune in" to the thoughts and feelings of others often does not develop in the same way or at the same pace as other children. The ability to recognize other people's feelings, thoughts, beliefs and intentions and respond to the other person accordingly is known as Theory of Mind. All individuals with HFA/AS are lacking this ability to varying degrees. In practical terms, this inability to "mind-read" means they have problems understanding why people feel, think and do the things they do. As a result they are poor at predicting how another person might respond to them and what the other person is likely to do next in given situation. In other words they are "mind-blind" to the thoughts, feelings and intentions of those around them. Some researchers believe that this poor ability to mind-read is the main cause of the severe problems with social interactions found in individuals with HFA/AS. According to this, behavior of the people without HFA/AS becomes unpredictable and confusing to an individual with HFA/AS. (Bogdashina, 2006)

We can describe this problem as very similar to that of a tourist visiting some new country, that he does not understand some of the cultural and linguistic aspects of the daily life there. He does not quite understand the various subtleties of his native language and is unaware of some of the cultural information implicit in our daily communication. But, unlike the tourist, the person with an autism spectrum disorder may not know that he does not understand or may not realize the extent to which he is missing common information.

As we mentioned before, HFA/AS affects the way a person communicates, but also affects the way the person thinks. They are very literal thinkers, they say what they mean and mean what they say. The language they use does not have any additional symbolism or hidden meaning. They think in very concrete terms and while they may excel at remembering the smallest details about subject that interests them, they often fail to understand abstract of metaphorical concepts. The body language, facial expression and the tone of voice they use, normally does not express the way they feel, which on the other hand causes problems and confusions in everyday communication. These communication problems occur because of the mutual misunderstanding between people with HFA/AS and neurotypical people-non autistic people (NTs). For example if NT person says "I am hungry", the person with HFA/AS hears only "I am hungry", without grasping the hidden request "can we go and eat somewhere or can you get me something to eat". They pretty much follow the sentence "How am I suppose to know, if you do not tell me?" Because their facial expression does

not correspond the way they may feel, also can cuse a communication misunderstanding. Very often persons with HFA/AS can have sad facial expression, even though they feel fine. In situation like this, when NT person hears the answer form the person with HFA/AS "I am fine", he usually starts bothering with questions "Are you sure?" or "Is there something wrong?", without realizing that he is really fine. But in other situation when a person with HFA/AS notice a really sad looking NT person and asks "How are you" and if he gets the answer "I am fine", no matter the facial expression, he will turn around and leave, because he HEARD "I am fine". In many social settings the person with HFA/AS will be considered as one who does not care and did not want to try to find out why the other persons was sad. But for them if you really say that you are fine, then you are really fine. Situations like this are very confusing for them and they usually ask the question "Why would you say you are fine, when you are not?" In their opinion this is lying, due to the fact that they have a lack of understanding the subtitles of communication through eye contact, body language and facial expression. Another thing that people with HFA/AS cannot grasp is the small talks and gossiping part of the conversations. They do not understand why NT people have the need to talk about other people. They usually talk about things, ideas, concepts and events. On one simple sentence like "John bought a house" people with HFA/AS and NT People will react differently: NT: "Well congratulations! But where did he get all that money? I know him and I think something is wrong here." HFA/AS: "Congratulations! What kind of house it is? Is it close to the city?" (Smith-Myles, 2005)

People with HFA/AS also have trouble with identifying, labeling, quantifying, expressing and controlling their own and other people's emotions. Some of them seems like they have very few emotions, just because they do not show the emotions in the same way as NT people do. They may not understand that there are varying degrees of feeling within particular emotion. They seem like overly emotional, because they express their feelings in all-on or all-off way. Because emotions are not logical and do not consist straight definitions and rules, people with HFA/AS find them extremely confusing and sometimes even frightening. As a result they have to learn how to recognize and label emotions, which for NT people comes naturally. They learn how to recognize the emotions by describing how the face and some parts of the body look like. For example confused: forehead-wrinkled; eyebrows-forming lines between them; eyes-narrowing; corner of mouth-turned up; hands-touching lips, face, head etc. If they have troubles remembering all of these, they make a small book of drawn faces in it, each face describing different emotion. (McAfee, 2002)

People with HFA/AS have different priorities, needs and perceptions over relationships. They approach things with a system or formula and they are more focused on a particular interest, project or task of the relationship, than the entire relationship. Generally they have great desire to relate to and master the world of objects and information, rather than the social world of communication and interaction. They do so, because objects do not move around and change from moment to moment. Facts remain facts. Coordinating with things and data becomes easier and more understandable, than interacting with people. But this does not mean that they do not make any friendships. It is possible for people with HFA/AS to be thought the social and communication skills. Friends can be made and kept when these skills are learned (personal space, facial expressions, social communication, greetings, chit chat, humor/jokes, sarcasm, initiating two-way conversations, sharing and taking turns). It is a common misconception that, for individuals with HFA/AS, friends are unimportant, or not desired. This is usually far from the truth. Because of the lack of social ability, they often have no idea how to go about building friendships even though the desire is there. This lack of balance can cause a great deal of anxiety, depression, and eventually, isolation. As we already have mentioned from before, they have difficulties understanding and expressing emotions, and an emotion that is particularly confusing to people with ASD is love. They understand the love in different way from NT people. They may not seek the same depth and frequency of expressions of love through acts of affection, or realize that an expression of affection is expected in a particular situation and would be enjoyed by the other person. He or she can be bewildered as to why other people appear to be "obsessed" with expressing love for each other. For example, a hug may be perceived as an uncomfortable squeeze that restricts movement. The person can become confused or overwhelmed when expected to demonstrate and enjoy relatively modest

expressions of affection. Teenagers with HFA/AS often are eager to understand and experience the social and relationship world of their peers, including romantic relationships and sexual experiences, but there can be problems regarding the source of information on relationships and sexuality. An adolescent with HFA/AS usually has few friends with whom he or she can discuss and be informed about relationship topics such as romantic or sexual feelings and the codes of sexual behaviour. Unfortunately, not every adolescent with HFA/AS has friends that he can talk to. In case like this the source of information on relationships for adolescents with HFA/AS can be pornography for males and television "soap operas" for females. The person can assume that the actions in pornographic material provide a script of what to say or do on a date. In order to progress along the relationship continuum from a friend to a boyfriend or girlfriend, an adolescent or a young adult with HFA/AS needs to understand the art of flirting and romance in order to accurately read the signals of mutual attraction and understand the dating game. These abilities are not intuitive for people with HFA/AS. Despite the problems in relationship skills experienced by many people with HFA/AS, some adults can progress along the relationship continuum and are able to experience romantic and subsequently intimate personal relationships, even becoming a lifelong partner. Many women describe their first impressions of their partner with HFA/AS syndrome as being someone who is kind, attentive, and socially or emotionally immature. The man's lack of social and conversational skills can lead to his being perceived as the "silent stranger" whose social naivety and immaturity can be transformed by a partner who is a natural expert on empathy, socializing, and conversation. Many of the partners of men, and sometimes of women, with HFA/AS have been at the other end of the social and empathy continuum. They are intuitive experts in Theory of Mind, namely understanding and empathizing with someone else's perspective. They are naturally gifted in the ability to understand the world as experienced by the person with HFA/AS, much more so than a person of average Theory of Mind abilities. They are understanding and sympathetic, and they provide guidance for their partner in social situations. The attractiveness of a person with HFA/AS in a prospective relationship can be enhanced by intellectual ability, career prospects, and degree of attentiveness during courtship. The person with HFA/AS can be a late developer in terms of relationship experiences, which also can be an attractive feature. There may be no previous relationship "baggage." A couple that falls in love starts hugging, kissing, and engage in sex. People with HFA/AS fall in love with things, that are their special interest. Very often happens the partner to become "the special interest" of the person with HFA/AS and she can very easily become his obsession. At the beginning of the relationship the woman would like his attention, but after some time things can change, especially when the man finds new special interests. In this case he will focus all of his attention on the new interest and he will overlook his partner. Then the woman usually use the phrase "He's either got Asperger's or he's the most selfish man on the planet." Because of all these reasons, when a person with HFA/AS decides to get involved in a relationship, he/she prefers a partner who also has HFA/AS. They simply understand each other better than NT people do, and they do not have to keep explaining why they do the things they do. (Hendrickx, 2008)

3. STRATEGIES FOR BUILDING, MAINTAINING AND IMPROVING RELATIONSHIP WITH A PERSON WITH HIGH FUNCTIONAL AUTISM AND ASPERGER'S SYNDROME

According to all the facts mentioned above, if we want to have quality communication with people with HFA/AS we have to be familiar with their unique way of interacting and try to adjust our communication skills to their level. The following strategies of communication will help you establish and enhance the communication with people with HFA/AS.

People with an HFA/AS often find social situations very difficult. There are so many social rules that people without an HFA/AS learn instinctively. People with an HFA/AS often have to work at learning these rules. It can often be confusing and cause anxiety as many social rules are unwritten and not spoken about.

If we want to have a good communication with them the most important thing we have to do is to accept who they are. They may be different, they may have some issues, but what they are aware of is if people are critical or want them to change.

Often people with HFA/AS don not initiate verbal or any kind of communication. It is important to know the person, because the same specific behavior in one individual may mean "I am happy and I love this job," and in another the same behavior, "I do not want more to be here". We have to know the person very well in order to interpret the message correctly.

When people with HFA/AS have done their assignment or any kind of task they were given and do not know what comes next or what to do, they become irritable and present behavior inappropriate for the situation. In this case we should tell them what to do next, instead of telling them to stop the inappropriate behavior.

They may have trouble processing information. It is important to reduce the speed of speech and take your time between two sentences, so the person with HFA/AS has enough time to process the received information. Also they will need extra time to formulate and present the thought/answer properly. Do not get upset if the person does not establish eye contact or makes repetitive movements or repeats your questions. This repetition can be a sign that the person did not understand the question and repeating it helps him process it correctly. So make sure you give them the time they need it. (Emmett, 2004)

Use clear and simple words, avoiding slangs, metaphors and sarcasm. They think in very literal and logical way. Precision and taking each word's meaning into consideration may be all you need to communicate with people with HFA/AS efficiently.

Do not make jokes, unless you know their sense of humor and how much the person takes things literally. During your conversation do not ask many questions in a row. If the person does not understand the question, he may not know how to ask for a help. For this reason you should carefully follow the signs of frustration and confusion that he will show. Try to rephrase the question or ask what is wrong or unclear in the question.

Never assume that the person with HFA/AS knows what you mean. They have troubles understanding the expressions on people's faces. Always give short and clear explanation without any hidden meaning. We should be precise and direct in giving short and concise directions, especially if they are verbally presented.

Match your body language with your words in a more pronounced way. This way they will be able to comprehend you better. For example crossing your arms in front of you may look like an angry signal to him, when in actuality what you are doing is thinking. Or you can cross your hands while simultaneously saying "I am thinking about when you said," will help him understand that crossed hands means 'thinking' rather than 'angry.

Many of these individuals have not developed a sense of time. They can say what is the time, but they do not have the sense for five minutes over 5 hours. Because of this we should avoid remarks like: in a minute, for a while, sometimes, often etc. Therefore a clear visual presentation of the beginning and end of tasks helps these people to organize their day.

At least 40 percent of people with HFA/AS are unusually sensitive to certain kinds of sensations. They may have difficulties processing the information they get through one or all of their senses: sight, hearing, taste, smell, touch, balance, and weight. This can be major obstacle to functioning in everyday life. For example they can be easily distracted when they hear more then one voice at the same time. Make sure the room you are in is quiet when you speak to them so they can hear you properly. (Standifer, 2008)

4. CONCLUSIONS AND FUTURE WORK (SERVICE LEARNING)

Successful communication does not depend only from the ability to use words. Body language, facial expressions, eye gaze, tone of voice – these non-verbal cues can often tell us more about what people think and feel than the words they use. To be successful communicators, we need to know how to interpret and respond to these cues, and how to use them ourselves. People with HFA/AS have difficulties in recognizing other people's feelings, thoughts, beliefs and intentions. Responding appropriately to the other person presents a big challenge for people with HFA/AS. This is the main cause of the severe problems with social interactions found in individuals with HFA/AS. As we mentioned before, communication is at least a process of exchanging information between two individuals. Both individuals have to make efforts in order to start and maintain a quality communication. The person with HFA/AS has to learn step by step, through many different programs, how to establish communication with person without HFA/AS. The least thing that the person without HFA/AS can do to help this communication is applying some of the communication strategies presented earlier. People with HFA/AS put so much effort in becoming part of our communication world. The least thing we should do is at least try to make concession of their communication struggle by using those communication strategies.

A study conducted about the employment of people with Autism in Macedonia shows us that 84,8% of NTs don't know what autism is. (Stankova, Trajkovski, 2010).

In order to reduce this high percentage, different events for Raising Awareness about Autism should be organized. Workshops, conferences, informational lectures or training about the autism condition, its characteristics, communication and their specific way of functioning in the society should be presented to the NTs (relatives, peers, colleagues, teachers, college and university professors, employers etc.). Those events can be lead by professionals who are familiar with this condition like Doctors or Special Educators. A good way of presenting their specific communication can be by inviting a person with HFA/AS to talk from their personal experience about the barriers they are facing during their interaction with NTs and strategies how to overcome them .

As second part of these workshops, conferences or informational lectures, social events can be organized. Visiting museums, going to the theatres and cinema, hiking, having picnic can be one good opportunity for social interaction with people with HFA/AS. Discussions about the movie or the play are nice way to practice the communication strategies presented in the first part of the workshops or conferences.

The faculty of Special Education and Rehabilitation can start up a program "Bigger Brother or Sister" where students from the faculty will help the children or adult with HFA/AS to interact and make meaningful communication with NTs. The student will spend three of four days a week with the child or the adult with HFA/AS, having a lot of social activities like shopping, taking walks, traveling, going to the cinema, theatre etc. During those activities the student teaches and helps the child how to interact in a social appropriate way. He/she will be the interpreter of all the interaction going on around them. As the person with HFA/AS makes progress, the student reduces his assistance, till they get to the point where the person with HFA/AS will not need assistance anymore.

In a way this paper is a part of the service learning projects. Elaborating this topic and suggesting what kind of communication strategies should be used to improve the interaction with people with HFA/AS has small, but important contribution to the overall picture.

LIST OF ABBREVIATIONS/ACRONYMS

HFA	High Functional Autism
AS	Asperger's Syndrome
ASD	Autism Spectrum Disorder

DSM Diagnostic and Statistical Manual of Mental Disorders
NTs Neurotypical people – non autistic people

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The Role of Animals in Socialization of Persons with Handicap

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Abstract:

The main aim of this guide is in obtaining more circumstantial introduction with a relatively new and effective approach in rehabilitation and socialization of persons with disabilities who for several years has been implemented and successfully applied in industrialized countries. The main component of the new method is inclusion of animals in the lives of people with disabilities. The role of animals is to help these people in every segment of their life thus unselfishly them worship love and attention, assist in every possible way in order to allow these people to easily engage, to work and live happily in society. This new method promises very great success in society, concerning the growth, development, education and socialization of this special group of people. Today, there is a tendency to do more about protection and rehabilitation of these persons. Although this tendency which seeks to improve the quality of life of handicapped persons in every segment of society is imperative for all countries in the modern world and the contemporary Macedonian society, unfortunately, here in Macedonia there is no application of this method and there is no legislation that will involve animals in the everyday life of people with disabilities.

However, following the experiences and trends in the world related to the treatment of these people, our country already began considering changes in their education, social care and rehabilitation. Changes are evident, thanks to all projects undertaken in that direction - deinstitutionalization, interaction, inclusion. The goal of these projects was unique - rather than segregation, attempted to involve people with disabilities in the normal flow of everyday life according to their remaining abilities and opportunities.

Keywords: Persons with disabilities, animal therapy.

1. INTRODUCTION

The man, as an integral harmony of physical (somatic), psychical (mental) and social components which are conditionally interdependent from the birth and throughout live, is exposed to a variety of influences and these reflect variably on his overall personality. Prenatal, perinatal and postnatal developmental conditions, as well as genetic factors, are also reflected in the development and maturation of man as psychosocial entity.

Various reasons lead to certain consequences of the human condition, its status, role and place in society. Genetic disorders, physical disorders, hereditary and social factors are reason for conditions that range from minor physical damage to the complete inability and disintegration of man as a social being, that lead to disability.

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Morbidity, traumatism, hereditary and social factors causing somatic, mental, functional and social conditions that throughout history are variably defined, classified and treated. Depending on the overall scientific, cultural, economic and social development of the ideological and political determination and the attitude of society towards the person, this problem is defined and treated. The problem is as old as society, like permanent associate.

Reasons, which are basically classified as endogenous and exogenous, congenital and hereditary, leading to various psycho-physical condition and failure in the development of personality, such as:

- disorders of eyesight or visually impaired persons (partially sighted and blind);
- disorders of sense of hearing or hearing impaired persons (dullness of hearing and deaf);
- disorders of speech and voice or persons with voice, speech and language impossibility;
- somatic disorders, or physical disabilities;
- lagging in mental development, or mentally retarded persons (easy, moderate, severe and profound);
- behavioral disorders and in voluntary emotional sphere or autistic persons;
- chronically diseased persons and
- multiple disorders or persons with many types of disabilities (persons with multiple disabilities in development.

Today, according to the scientific papers, reports and statistic research, and according researshing results of World Health Organisation, there are 10% of the world population suffering from physical and mental disabilities and behavioral disorders that require rehabilitation measures.

2. THE ROLE OF ANIMALS IN SOCIALIZATION OF PERSONS WITH DISABILITIES

In all social communities there are groups of people with a disability - handicap (born or acquired), which is indicator for unsettled integrity as human beings, and thus make them unable to form and express themselves as individuals in society. We could not say that these persons are ill and require medical treatment. At the same time, we could not say that these persons are healthy because their disability makes it impossible for them to adjust in society and makes their social communication difficult.

The time when these people were the subject of cheating and were not a particular concern of the community has passed. Today, almost in all countries, there are forms of social care for these persons, ranging from providing minimum resources for their subsistence to organized social efforts for their rehabilitation, employment and protection in the work environment. In developed countries, which tend to humanization of the personal and social status of the individual, the degree of realized humanization is measured by humanization of the person with disabilities.

Humanization of persons with disabilities, when their condition of psychophysical lack could not be removed by itself, is minimize or compensate by a treatment consisting in efforts to enable their communication skills and their exposure as a person. These incorporate effort to work, if possible, and thus to create conditions through their activity to be created as human beings. For such social action, among other things, it is necessary to clearly define the term “people with disabilities”, as well as the content of the rehabilitation process, according to this term. However, there is not a unique meaning in theory and practice.

Before I start with presentation of the main part of this paper, I would like to give a short explanation about socialization of people with disabilities-handicap, what is the meaning of the term disability and what kind of persons belong to this group. Further, I would like to give an explanation for the type and extent of their physical or mental development and their specific rehabilitation needs in the system and their rehabilitation and successful integration into the social environment.

According to literature data, there are different terminological specifications for persons with disabilities. Generally, e.g. in the constitution of Republic of Macedonia, the accepted terminology is persons with disabilities. However, in many acts there is different terminology, like persons with disability in mental development, persons with physical or psychical disabilities, persons with special educational needs, abnormal persons and other terminology. However, in this presentation I will use the terminology "persons with handicap". According to Kovačević, Stančić and Mejovšek (1959; 1986) the term „handicapped" in a broader sense means difficulty or obstacle, and in the narrow sense this group of handicapped persons considered persons with disabilities due to illness, injury and disability in mental development. These persons have difficulties with the integration in the social environment. Hence, we can conclude that disability is a condition of the body due to injury, disease or congenital permanent flaw, partial or complete reduction of the body capabilities for normal functioning, loosing capabilities for normal social life.

As previously mentioned, people who have specific needs, according to the level of disability in physical and mental development are divided into several groups, such as:

- visually impaired persons (partially sighted and blind);
- hearing impaired persons (dullness of hearing and deaf);
- persons with voice, speech and language impossibility;
- persons with physical disabilities;
- mentally retarded persons, easy (50-69 IQ), moderate (35-49 IQ), severe (20-34 IQ) and profound (under 20 IQ);
- autistic persons;
- chronically diseased persons and
- persons with many types of disabilities.

Professional staff that take care for persons with handicapp, make diagnosis of these disabilities, accomplish therapy, rehabilitation, education and qualification of these persons are called Special education and rehabilitation teachers. Basciallys, special education and rehabilitation is a complex scientific discipline that deals with the defects and disadvantages of these people and their rehabilitation since earlier age. Rehabilitation of impaired persons is complex process of measures, activities and methods aimed to socialize the person from birth until re-socialization. This process is pivot, locomotion and integral part from all developmental stages of handicapped persons life aimed to enable assistance, welfare, protection, correction, compensation, education, socialization, etc. Components of this contemporaneous system for integral rehabilitation of handicapped persons have clinical, educational and socio-economic part.

Socialization is a component of the socio-economic part of the modern system of integral rehabilitation of handicapped persons and the general rule is that it can not be treated as stage of the rehabilitation process, but as an integral part, and therefore it should be planned and conducted during the whole process of rehabilitation. Socialization is defined as the process of learning as a process of social maturation. It is the result of the interaction of personality and social environment, i.e. the organism and the social environment.

Besides the standard methods and activities used in the process of socialization, in recent years in developed countries the emphasis is put on animal therapy or participating of animals in the growth and development of persons with disabilities in every facet of their lives. For these purpose, the persons with disabilities commonly used horses, dogs, dolphins, rarely cats.

2.1. Horse riding as therapy

According to historical data, the man began riding horses about 6000 years ago, but there is not exact data that would be seen when the horses began to be used for helping persons with disabilities. The records from Greek and Roman time indicate that horse riding was recommended as a method for the recovery of the wounded after the battles. In modern times, at the end of the

50's and beginning of the 60's of the previous century, therapeutic horse ridings were organized in England, Germany and Scandinavia. In the middle 70's, several European countries organized the first International Congress for therapy riding, and in 1980 in Brussels the organization Federation Riding for Disabled International (FRDI) was established. Today FRDI has 51 member states. There are other organizations in different countries that aim at helping persons with disabilities. For example, in Croatia, an affiliate member of FRDI, organization named „Wings" and „Croatian Union for therapeutic riding" founded in 2001 exist.

2.2. What is therapeutic riding?

Therapeutic riding for persons with disabilities represent the group of activity includes interaction between handicapped persons and horses aimed at their rehabilitation and increasing their life quality. The term "therapeutic riding" includes hippotherapy (equine assisted therapy, recreational and sport riding, special pedagogical riding and psychotherapy with horses that have different objectives. These methods are implemented by experts in these methodologies, especially experts from the field of arts and medical sciences.

2.3. Special educational vaulting and developmental riding

Vaulting education represents gymnastic with horse and this is an Olympic discipline. When working with children with special needs, this discipline is modified, but is intended primarily for children with minimal physical difficulties or children with psychomotor problems. This education is accomplished by pedagogue educators, psychologists, social workers, and workers with similar occupations normally with additional education and special pedagogue vaulting.

Indications: Down syndrome, attention disorders, learning disabilities, hyperactivity, developmental retardation (mild mental retardation), behavioral problems, mild forms of autism, mild forms of motor impairment, abused children.

Contraindications: atlantoaksial instability in children with Down syndrome, aged less than four years, aggression towards horses and people, the inability to control the child's behavior.

The horses trained for vaulting are controlled from the ground by an instructor, with the help of tracks with a length of about 8 feet and a whip.

The equipment used in this educational process is a belt which has multitude knobs which serve for the rider to mount a moving horse, and to keep the horse in variety of positions, and also to keep the children on the horse longer.

The treatment is usually in a group, lasting up to half an hour, and in a group of up to four children with a horse and instructor practicing various figures, sitting, kneeling and standing of the horse in motion, trot and gallop.

The objectives are: work in groups, responsibility for others, developing concentration, offering and accepting help, learning of desirable social behavior, increase self-confidence and communication with others, awareness of one's own body and its position in space, development of the sense of symmetry, physical effects of riding - better endurance, body position and balance.

2.4. Recreational and sport riding for persons with disabilities (therapeutic riding in narrow sense)

This form of therapeutic riding is the most abundant and is intended for the widest range of riders. This is just riding intended for persons with disabilities and contains a therapeutic effect, although it is not the primary goal, but the primary goal is integration of people with disabilities in activities that practice healthy people, concerning riding skills. This type of horse riding is accomplished by instructors/coaches who have undergone additional training for persons with disabilities and are called therapeutic riding instructors, and terminology used in Croatia for baseline level is anchor for therapeutic riding. The final goal is to achieve the skill for riding which allows to rider

participation on national and international competitions such as the Paralympics games, for example in categories training riding for persons with disabilities and potentially healthy riders. Besides competition in train riding there are also outspread and competition in carriage driving and there are beginning competitions in jumping obstacles.

Indications for riding can be: physical impairments such as cerebral palsy, multiple sclerosis, effects of cerebrovascular insults consequences of traumatic brain damage, rheumatic arthritis, spine bifida, muscular dystrophy, amputations, damage of spine vertebra, visual and hearing impairments, Down syndrome, autism, mental retardation, attention disorder and hyperactivity, behavioral problems, post-traumatic stress syndrome, etc..

Contraindications for therapeutic riding are the same as in the case of hipotherapy and special pedagogical and vaulting riding. Program is not receiving children younger than 4 years.

The horses in this program can be of various sizes, but foremost is to be obedient and trained enough to be able to follow basic rider commands.

The Equipment used in this program is standard rider equipment; there are required riding helmets and safety belts that increase the safety of the rider in the case of a crash. Equipment can be adjusted for individual riders with specific disability by use of various belts with and without handles, and saddles of all kinds-English and Western Australian, and in specific cases some specially made saddles. To make it easier for riders riding skill, there are often used specially made guides for riders that have problems with arms mobility.

The treatment is usually in a groups, where each rider rides his horse with the help of one or more volunteers. During riding lesson there are learning exercises, games and riding skills. if the rider is a competitive and ambition person, than mostly from the lesson is dedicated to the art of riding and individual training.

The objectives of the program for recreational and sport riding for persons with disabilities are: physiotherapeutic effect on the body of the rider who makes the horse with their movements (in this case the horse is actually a therapist), the psychological effect of self-esteem, quality of life, ability to concentrate and learning, as well as the social impact of improving the qualities and quantities of social contacts. Beside these, an important feature is integration of handicapped persons and thus reducing the prejudice against the disabled attribute by association with volunteers involved in therapeutic riding. Perhaps the greatest benefit form therapeutic riding for handicapped persons is great motivation that they feel during this activity, especially children who actually receive physical therapy and have fun.

2.5. Dogs as guides for blind persons

Dogs have always been considered as man's best friend. They are known that can warning people for upcoming natural disasters and to save many lives. They are used on farms from ancient time for keeping the sheep save and keep wolves away. They also have a roll as guide for the blind persons to help them living independent life, without the need of another man and be able to perform their daily tasks. Dogs guides are trained dogs that serve as the eyes of the blind people and are provided free of charge by various organizations around the world. These dogs are incarnation of aspiration on some organizations, their staff, volunteers and visually impaired persons who leave their trust to the dogs.

The relationship that develops between the visually impaired person and guide dog is quite complex and will be honest more from day to day while they both are dependent on each other in their existence. Dogs are help on handicapped persons during moving and give warning if there are any dangers, like stranger who approaches the house, road traffic, etc. They should be trained to recognize traffic signals and body movements, which can alert the individual. They also need to be

trained to respond on specific commands and certain words. The dog is depended from person in terms of daily needs and food.
As dog breeds that are used for guides usually choose Labradors and German Shepherds because they are healthy breeds - do not get sick often, they are hardy, mentally stable, intelligent, not fearful and have good communication with the man.

2.6. Socializing with dolphins as a therapeutic method

Several studies have reported positive changes in children with special needs that were possible association with marine animals, particularly dolphins, aquatic turtles and fish.
Dolphins are increasingly being used in the treatment of various human diseases, because of the sound of dolphins that have calming action of the nervous system in humans. In China they are used to help children with autism. They are also help to children with cerebral palsy in a way that swim with them.

The report of parents and principal of water park „Denga Zuna":

Children with autism are daily associated with the dolphins in the water park in the city of Nanjing. With the help of coaches, dolphins are play with the children, touching the hands and face, splashing water and broadcast the sounds.

3. CONCLUSION

All that has been said before is a new trend in therapy od persons with disabilities. If we want these to become a reality in our country in the nearest future we should start with a huge reform. First of all, there should be prepare a regulation / policy that will deal with issues about integration of animals in the everyday life of persons with disabilities. After these, there are must start with education of citizens for roll of animals in the proper physical and mental development of all people, especially for handicapped persons. There should be open nonprofit organizations that will conduct training of animals that later will live and take care of these handicapped persons.

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Life and Study with Disabilities in Croatia

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Abstract:

The main purpose of this research is to find out how was to investigate studying and life experience of student with disabilities. We would like to identify and highlight potential obstacles and barriers which they passed through or still passing their studying life. To reach our goal we collected their impressions and learn from them about their personally experience as a student. In our case study research about studying life of student with disabilities we used unstructured interviews. The content of this paper is focused on studying with disabilities and who are the students with disabilities, which specific obstacles they faced and how they overcome that. Through the project Equal Access to High Education for Students with Disabilities we realize that our obligations is to indicate barriers in communication with other peoples and to find out what are the rights and obligations which are associated with higher education for students with disabilities.

Keywords: students with disabilities, high education, barriers, obstacles.

1. INTRODUCTION

Whenever in our society we discuss disability topic, particularly in the area of decision making, it is considered as 'sensitive' and not acceptable for deeper analysis and reactions. On some Croatian universities, we find evidence of lack of evaluation of persons, organizations and institutions that deals with persons with disabilities (PwDs), justified by fear of media and reaction of the society that is so susceptible of tabloid sensationalist headlines, where is sometimes very hard to figure out what is worth of reading and what is pure fiction.[3] The Disability Discrimination Act (DDA) defines a disabled person as someone who has a physical or mental impairment that has a substantial and long-term adverse effect on his or her ability to carry out normal day-to-day activities.[4] A disabled person is a spiritual, emotional, mental and physical human being. They may have congenital or acquired traits that may limit their mental, physical and emotional well-being. Disabled person are responsible for the quality of their own lives, for their own pleasure and for the respect gained from other people like everyone else. They are also responsible for other community members. Socially responsible company used to help in PwDs in many ways, particularly with sponsorship or donation for PwDS association or with their correct and no discriminating attitude toward employing PwDs in their companies that. Starting from the low individual level of knowledge about disabilities many people think and behave toward PwDs with prejudices. It is easy to avoid ignorance or fear of contact with a person, exploited her weakness, and is considered as a burden. The aim of this paper and whole book of case studies (and other project outputs) is to

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inform students with disabilities about the conditions and possibilities of studying in the Croatia and Macedonia, inform faculty staff about the difficulties that students encounter while studying and give them brief guidelines for adjustment and to stimulate new considerations about the quality assurance requirements of their education.

2. METHODOLOGY USED

In our research we conduct desk research about our topic and field research. As a main research methodology we used interview, precisely in open discussion with all of the persons with disabilities included in this paper. We tried to find out about their experience of studying and living.

3. STUDYING WITH DISABILITIES

With this case study research we try to reveal recent situation in Croatia regarding to this „sensitive“ topic, and we supposed that we will find evidence from our society, ways how they cope with this issue, how they avoid the fear and prejudice that often hamper to good quality reaction when it comes to people, and students with disabilities.

3.1. Who are the students with disabilities?

First when we open the topic of disabled students in higher education, we must first answer the question: Who are the students with disabilities? According to the UN Convention on the Rights of Persons with Disabilities[5], people with disabilities are: “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.” This broad definition is useful when you are talking in the strictest sense of the students with disabilities, because they are the people with disabilities who have entered the higher education system. People with disabilities are just as diverse as the population and standard population, with people with disabilities have specific problems. Usually the biggest problem for persons with disabilities are in - people with disabilities.

Croatia ratified international documents such as: *Convention on Human Rights and Fundamental Freedoms of the Council of Europe and all present protocols (1997), European Social Charter (2003),* The Council of Europe Action Plan: *Improving the Quality of Life of People with Disabilities in Europe 2006 – 2015 (2006), The UN Convention on the Rights of Persons with Disabilities (2007) etc.*[6] Except all this ratified documents Croatia developed National Strategy of Equalization of Possibilities for Persons with Disabilities and have institution of Personal assistant for PwDs since 2006.

3.2. Rights and Responsibilities

Students with disabilities should start from themselves before they continue their pursuit of their rights and pointing out the problems faced by the society in which they are located. In today's society, everyone wants to know their rights and even their animals have some rights. But very rare people are aware that those rights imply a certain amount of responsibility, and that these rights are not available for those individuals who do not take certain responsibilities.

Very often we witnessed that PwDs expect from others to give them something as a gifts or something adapted without the responsibilities that come with it, from the single reason, because they are PwDs. Also the case that people with disabilities get into them and make their little cellophane, artificial world in which they think nothing can touch them. But every world bursts that cellophane and quickly shows their true nature and people with disabilities sooner or later have to

[5] http://www.un.org/disabilities/documents/convention/convoptprot-e.pdf (Retreived, September 5, 2012).
[6] Bilic, I. 2010, Access to Higher Education for Disabled in Croatia, Book of Abstracts, Regional JFDP Alumni Conference: ‘’Enhancing Accessibility of the Higher Education to the Disabled’’, pp. 25.

understand how life treats them the same as everyone else and that they have to perform their own steps in order to achieve something, to achieve their goals.[7]

3.3. The 'Special Needs'

The first problem for a student with a disability is a problem of "etiquette". They used to be "Etiquettes" as a person with special needs. Our society usually believes that persons with disabilities have needs that are different from everyday needs. People/students with disabilities do not have any special needs, their needs are the same as the needs of other students, and it is just that because of his disability in a different way to achieve these needs. Sometimes in life with (in a metaphorical view) is more necessary to go through the thorns and rocks and not trodden through it so it will be at least something to learn and appreciate more what will lead to the life you gain strength and achieve the desired goal.

Because of that each individual person including persons with disabilities should start by themselves and realize that it has to be activated to do something to make life more enjoyable and easier, because the system will not solve the problems of life for them.

3.4. Barriers for Students with Disabilities

They always acquired their diplomas through a hard work and knowledge, and it can be reached in the same way for everyone. If every student, including one disabled have a goal to reach diploma one day he/she should consider what he/she is supposed to do with the aim to reach that goal. Let's start with the simplest one: getting up, getting dressed, taking a shower, toilet, eat, going to lecture, study, and take the exams/assignments. It seems like a very simple and normal task list for each student. Simple unfortunately not for everyone, many students with disabilities have difficulty completing this simple and normal list.

Architectural barriers are another big issue that they will encounter oh his journey, situation such as: some faculties are very unreachable from architectural point, for students with disabilities. Adaptation of buildings, parking, toilets, stairs, halls and construction of new buildings adapted for people with disabilities should be a priority in high education, and even more for secondary schools[8].

Architectural barriers are not the only ones that cause problems for students with disabilities. Today's society has more problems with fears, prejudices and negative attitudes towards PwDs. The solution for this is changing attitudes, the way of thinking about people with disabilities in general, and not just students. Students and people with disabilities are equal citizens, and so they must be treated like everyone else, because students with disabilities and other students are full members of the higher education system.

3.5. Assistance for Students with Disabilities

To perform their daily routine such as getting up, dressing, showering, etc., a student with disabilities, sometimes needs someone to help. That is the first daily problem that can be encountered by students with disabilities: assistance to students with disabilities. At the University of Zagreb that help used to be paid by student center, but it will not take so long now, because they feel that it is not their responsibility. But as every student also the student with a disability has an obligation to show up on the lectures as well as other student. Here we come to the following two major problems: architectural and transportation barriers to university.

If a student with disabilities want to came to the amphitheater and listen lectures somebody has to pick up that person and drive to the faculty. That transport is currently organized by student

[7] Danijel Jedriško., (2008)., S invaliditetom na faks., from http://www.h-alter.org/vijesti/ljudska-prava/s-invaliditetom-na-faks, Retreived September 10, 2012.

[8] In our researches, particularly through Status-Quo Analysis we realized that many secondary schools in our country are not adjusted and are more than unfriendly for PwDs with Physical Disabilities

associations dealing with persons with disabilities. However, transportation to the university should not be left solely on activities of student; it must establish and performed independently of the projects and programs of non-profit organizations. Transport to the university must become an integral part of all the universities in Croatia. Zagreb has gone so far with this. They have organized the Office for Students[9] with Disabilities, which is the reference thing between the initiative of students, their colleges, universities, the Ministry of Science, Education and Sports and the Zagreb.

3.6. Adaptation of Literature for Blind and Visually Impaired Students

Learning is the most important task for every student. If you are a blind person how to study without adjusted literature, printed books or handouts on Braille letter? The answer is: there is no way to learn! Therefore, this issue still needs a lot of work, there are very good examples where various organizations provide for the availability of literature for the blind and visually impaired, but it should not just be the duty of all faculty associations, but to allow each student adequate literature to fulfill its obligations and reach their goals.[10]

3.7. Inclusion of Persons with Disabilities in High Education

Rights arising from higher education for PwDs are:[11]

- Reimbursement of the costs of transportation,
- Accommodation in the dormitory
- Enrollment on the faculty and without paying scholarships.

Educational integration of people with disabilities in institutions of higher education requires securing the conditions that would facilitate the development of students with disabilities, comparable with the knowledge of their colleagues.

First step definitely is personal discussion with that student with the main purpose to take into account how they will meet the additional needs at all stages of academic planning and resource planning. The incorporation of equal treatment of students with disabilities in all operating activities, an adequate understanding of the legal framework regarding persons with disabilities by the management staff, to ensure systems for collection of information for proper decision-making process regarding participation and progress of students with disabilities, including students with disabilities in academic governance, in attitudes of students with disabilities in the development and the physical environment, academic programs and services, to define certain contacts for students with disabilities with senior staff, raise awareness about the needs of the institution staff students with disabilities, and continuous monitoring and improvement in working with students with disabilities.[12]

4. INTERVIEWS WITH STUDENTS, PERSONS WITH DISABILITIES

As a main research methodology we used interview, precisely in open discussion with the all persons with disabilities included in this paper. We try to find out about their experience of studying and living. So here, through the stories of Croatian and Bosnia and Herzegovina students, we will present current state of access to high education in Croatia and Bosnia and Herzegovina.

[9] The same office is established on University of Split, thanks to Project and initiatives of prof. Lelia Kis-Glavas, PhD

[10] Faculty literature is completely unadjusted, but regarding to the Law students can have 'Reading software' for electronic materials, free of charge. It cost about 1.500 Euros in Croatia, and could also be very useful for (for learning) other types of disabilities, such as Dyslexia, but in that case student need to buy it by themselves.

[11] Danijel Jedriško., (2008)., S invaliditetom na faks., from http://www.h-alter.org/vijesti/ljudska-prava/s-invaliditetom-na-faks, Retreived September 10, 2012.

[12] Pravila službe za osiguranje akademske kvalitete i standarda u visokom obrazovanju: Studenti s invaliditetom. Agencija za osiguravanje kvalitete visokog obrazovanja, 1999.godina.

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My main problem is that since I was born I have a difficult with hearing and now I wear hearing aids. If you ask me I think that the most important thing is to have a desire to study and have a great family which gives you a big support and they are always there for me. My colleagues and friends are very friendly and I can collaborate and communicate with them during the study. They are full of patience and they considered me like every other person in the group. They always give me script to copy and help me to prepare myself for exam. The professors are also full of the understanding when I come to the office hours and ask them to explain me something about the material that we have learned. Even if I ask to repeat twice, they are still full of patience and they showed full understanding of my problem and their willingness to help me. The most important advice is not to give up what you want, there are always ups and downs, but it is important to stand up and continue with the aim, and believe that you can pass the exam. Currently waiting for my diploma thesis at the Faculty of Economics, the place where I stepped six years ago to achieve my goal. I am a proof that everything is possible when you really want it.

Tomislav Kurtović, Faculty of Economics, University of Split

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I am a regular student at the Faculty of Kinesiology. Even if I do not see on the left eye and my right eye is with reduced vision, it did not prevent me from winning the silver medal in the javelin at the Paralympic Games in Beijing 2008. I am the first person with a disability on Kinesiology, University of Zagreb, who has been enrolled as a regular student. When I have started studying there was some complication because teachers did not know how to relate with me, because it was a great mystery to work with someone who does not see well. The main goal for me was to prove them that it is not such a big deal to own some type of handicap because the desire to study and achieve to what you want is most important.

Branimir Budetić; Faculty of Kinesiology, University of Zagreb

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As a student with a disability at the University of Mostar I faced many obstacles which make my studying harder. Firstly, the problem is transportation to University in Mostar they do not have any transport possibilities for students with disabilities (physical disabilities), so my friends and parents provide me with transportation to faculty. Some rooms have been adapted and most of them are not, I am happy that I have very good friends who help me with the wheelchair to reach the rooms and give me chance to listen the lectures. Teachers at my faculty are supportive, sympathetic, accessible and cordial, trying to help me as much as they can.

Goran Jovanović; Faculty of Economics, University of Mostar

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I am a second year student of the Faculty of Law in Banja Luka, as a student with a disability I have encountered many obstacles that I overcame with the help of my family and friends. Professors and colleagues at the university are full of sympathy for me and give me maximum support. The biggest issue I have is that I have to pay tuition to pay full price as the other students. In an interview with the dean of the Faculty and Head of Student Services I learned that there is no legislation in the college, which regulates the issue. For me the Ministry of Education and all colleges should find a "golden mean" in connection with the payment of tuition for people with disabilities.

Davor Stjepanović; Faculty of Law, University of Banja Luka

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I am twenty years old lawyer in wheelchair and I am not employed. I was a regular student and I have graduated in spite of the many architectural barriers that did not stop me to graduate in shorter time, in nine semesters. I always ask myself the question: Is it a matter of my perseverance, courage and optimism or the Croatian society as a whole has become readier to acknowledge the differences as potential features, and even benefits?

Edin Okanović, Faculty of Law, University of Zagreb

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I cannot really complain about being discriminated in my college years, although I have had various problems on lower levels of my education. I studied law in Rijeka, and I was not at all under the impression that discrimination existed as a phenomenon. On the contrary, I can say that college was the first, and so far the only places where I have seen people with disabilities actually function in the general population. Generally, I am used to being more or less the only such person, wherever I go, and whatever I do. I was never given any special privileges based on my disability (with the exception of a remote control that opens the parking lot ramp), but then again, I never asked for any, because in most cases I physically do not need any. I did however notice that some of the other disabled people had organized transportation to and from the lectures. The only "problem", if we can call it that, was that other disabled people mostly had more trouble socializing with others, than I did (not all of them though), but that was probably more due to the way they were raised, and their physical limitations, than because of discrimination.

The only type of discrimination that I experienced in that period was in the student debate association, where my disability was once used against me in a quasi-political conflict, but that was outside the official education system, and the story mostly came down to somebody's personal vanity, so I wouldn't make a global problem out of it.

To sum it all up, I could even say that I was "spoiled" by the academic community, because the discrimination that I am currently facing in the labor market came as quite a shock to me, because, as a student, I had almost managed to forget that I belong to a usually discriminated social category. I would definitely consider the discrimination of disabled people in other segments of society and life in general, a far more challenging, and complicated topic.

Raul Kevrić, Faculty of Law, University of Rijeka

5. CONCLUSION

While we worked on this case study we found out that even if there are some barriers and obstacles which could really make disable and unreachable the whole studying process to person with disabilities there is something more important and it is a desire to learn. In that case the architectural and communication barriers become irrelevant!

The power of '**I *will* do it';** power and desire for success is a major motivator for a person with a physical or mental disabilities to reach their Diploma. Persons with disabilities are the same as any other person, they except that we should not ignore the way in which we acquired and gained through learning, discipline and work.

Persons with disabilities should be aware of their rights and responsibilities in society and in higher education. The same rights should not be exploited at the expense of his attempt to change disability evaluation system and work for the rights of teachers and students' obligations for all should be the same because in the end our goal should be that we are all equal, right?

We think that the main problem is still in the society so it would be good if (except students with disabilities) other students also get in touch with the meaning of how it is to be a student with a disability. As we have already mentioned at the beginning, the problem today is the fear of talking and understanding the concept of disability. Except that is still a subject which has an individual's causes of discomfort in relation to another person, a person with a disability. If we want this fear to disappear we need to learn about disability and all that he wears, flaws, care and how to live with it all the same. In the end we meet up again with ourselves and with what we want and how we want to, so it is simply concluded from the most important fact and that is: To live and govern over ourselves, because it is the greatest power! We considered that the person with a disability should not talk about his disability as a type of overdraft or „disease" but approaches it as something that makes them different from others, but not incompetent such literally the translation of the term "disability" inform us.

A human body is a park in which the will is the head gardener
William Shakespeare

LIST OF ABBREVIATIONS/ACRONYMS

PwDs Persons with Disabilities

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Jedriško, Danijel., President of Student with Physical Disability Associaton „Korak"

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Branimir Budetić; Faculty of Kinesiology, Univetsity of Zagreb

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Foster Families and Socialization of People with Disabilities

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Abstract:

This project focuses on the care and support for persons with disability who are taken under protection by foster families. Our intention as social workers is to awake the family consciousness to make them call and to participate in the group of foster families and in their protection.

During the foster period there is need for help and support for those people, which will lead to increasing the number of foster families that will contribute for the entire development of the person, because those persons should not stay without the most important thing in their life, help. After that process, the Center of Social Work remains in touch with the families by following the development of the persons with disabilities.

Keywords: Foster families, socialization, persons with disabilities, education, rehabilitation, deinstitutionalization.

1. INTRODUCTION

Nowadays there is a tendency to do as much as possible in the field of care and rehabilitation of people with disabilities. This tendency which seeks to improve the quality of life of persons with disabilities in every segment of society is an imperative for all modern countries in the world, as well as the modern Macedonian society. Following the experiences in the world for the treatment of these individuals, we are thinking about making serious changes in their socialization, education, social care and rehabilitation ... Changes will be evident due to the projects implemented by the Ministry of Labour and Social Policy, Ministry of Education and Science, as well as numerous non-governmental organizations. Persons with disabilities have the right to exercise all their rights. This is not a matter of charity, not good will or humanity, but it is the responsibility of society and the state. As future social workers, we strive to take active participation in current projects, and our goal is to awaken the awareness of people to raise the number of families who care for individuals with disabilities, to accept and to care for them as their own children as much as possible. So, as social workers, we appear as initiators for improving the lives of people with disabilities.

2. NOTION OF FOSTER CARE

As future social workers, we were taught about the form of foster family within several subjects: Social Protection in the Republic of Macedonia, under the mentorship of prof. Dr. S. Dimitrijoska, Family law, as well as Protection and rehabilitation of persons with disabilities under the mentorship of prof. Dr. R. Petrov. Within the subject Social Protection in the Republic of

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Macedonia was conducted research for the accommodation of persons with disabilities in foster care. This research covered the categories of persons with disabilities placed in foster care, as well as the achieved effects and the general stages of the preparation of persons and preparation of foster families before placement of the person in the family. In the Republic of Macedonia, this form of protection is traditionally applied more than 30 years. In the last few years a network of foster families is developed in several municipalities: Prilep, Makedonski Brod, village of Manastirec, Kriva Palanka, Kocani and Krushevo. There are currently 93 foster families who care for 153 children aged from 3 to 26 years. Most of them are children without parental care. In some cities like Veles, Kumanovo, Ohrid, Bitola and others, the number of people placed in foster care is smaller. In some cities there are no foster families. In cities such as Prilep, Krusevo, Makedonski Brod, there are other potential foster families that can take care of children without parental care, which means that the number of foster families can increase. In recent years this form of protection, within the framework of realization of the process of deinstitutionalization, covered a larger number of persons with disabilities. Every foster family receives a monthly amount of 5000 denars from Ministry of Labour and Social Affairs.

The main objective of the survey is the accommodation of a person with disabilities in foster care. The research examines the relationship between preparation of the person for placement in a foster family, as well as the category of persons who are placed in families and achieved effects of their placement in a foster family.

Objectives set during the survey are:

- General purpose

Is the phase of preparation of the person for placement in a foster family applied? Determining the categories of persons with disabilities placed in foster families and determining the effects of accommodation.

- Specific objectives

Emphasis put on:

- Determining the acceptance of people with disabilities in foster care by the environment in which they reside,
- Determining the degree of association between the person being cared for and the foster family, and between SWC and the foster family and the achieved effects of placement in foster care.

Placement in foster care is one of the forms of non-institutional care of persons with disabilities, which is realized in the framework of the social protection system. This form of protection is implemented in every social centre throughout the country. For the first time in the Republic of Macedonia in the 70's, a law for accommodation of children in foster care was passed. Accommodation of persons with disabilities in foster care is applied in situations where parents are unable to care for their children, or when the proper development and security of the person in the family are threatened. In a foster family, the following types of people can be accommodated:

- a child without parental care, until he/she is prepared for independent life and work;
- a child with educational and social problems;
- a child with impaired social behaviour;
- a person with moderate and severe intellectual disabilities, sent to train for working-production activity, persons with severest intellectual disabilities and physical disability who need permanent care and nursing;
- elderly person, adult disabled person and a person with developmental disabilities who is not able to take care of himself, whose family is not able to provide protection and accommodation.

As a carer can be every able-bodied adult who possesses certain moral and other capabilities. A carer can be a person who has been deprived of parental rights. As carers appear spouses who want their love to donate to alien child who due to any reason was left without his parents. Care provider is responsible for the child and undertakes all obligations and responsibilities in accordance with the Constitution and laws of the Republic of Macedonia. People who want to care for a person with a disability may contact the Centre for Social Work which operates in the area of their permanent residence. When choosing a family to perform foster function, the Centre is guided by several criteria in terms for carers:

- Their age
- Educational status
- Marital and family status.

Ethical issues and motivations for keeping and breeding of individuals with disabilities are important questions that foster families are asked. Centres further consider issues related to the material and housing conditions in which the family lives.

A detailed study should reveal the conditions in which a person grew and evolved, his personal and family history, the degree of psycho-physical disability, his traits, habits, problems and needs. In the process of carrying out the necessary studies and making a proper choice of family for a person should be included professional team of a social worker, educator, psychologist, pedagogue, each from their own perspective will make an assessment of the person, and also of family that will accommodate him\her. Only this way can be ensured the proper social and emotional development of children with disabilities who need a sense of security, sense of belonging, sense of touch and living together with other people, a sense of personal value and social role. The choice of the family is a very sensitive thing and therefore when choosing it a professional team should take into consideration that the family has to meet basic needs of the person who will accommodate. When choosing a family team should keep an eye on several criteria:

- Socio-economic status of the family, family living conditions, material conditions, number of members and structure of the family, the health of family members, the quality of family, family motivation.
- General and complementary suitability of the carer, the difference shall not be less than 18 years, educational preparation, health care situation of the person-carer, not to be deprived of parental rights, no criminal proceedings against care provider, emotional maturity, social maturity, and attitude towards people with disabilities.

It is desirable to make a contract for temporary accommodation of the person in the new family which can be limited from 30 days to 3 months, that is a period of adaptation of the person in the family and vice versa. Then sign a contract for a longer period. During the surrender of the person with disabilities to the new foster family, a record is kept which contains all the data about the person, and the foster family. Foster family signs an agreement which states that they will take care of the person with disabilities. A Form for following the accommodation in a foster family should be added to all documentation. After the accommodation SWC is in constant contact with the family because is necessary to monitor the development of the person with disabilities.

3. RESEARCH FOR CHILDREN WITHOUT PARENTAL CARE IN A FOSTER FAMILY

The research covers categories of children placed in foster care, as well as the effects achieved by the placement of children in foster families. On the territory of the Republic of Macedonia according to data from the Office of Social Affairs, up till 2010 there were1.222 children under guardianship covered by various forms of protection through all social centres for social work Macedonia. While the total number of children without parental care placed in foster families is 220. All these children are located in 153foster families in Macedonia until 2010. During 2011 the total number of children without parental care who are placed in foster care is 222. The biggest

number of children placed in foster care is in the cities of Skopje, Prilep, Krusevo and Makedonski Brod. In certain cities as Veles, Kochani, Demir Hisar Bitola, Ohrid the number of children placed in foster care is smaller because the number of foster families is also smaller. In some cities there are no foster families. In some municipalities there is a small number of potential adoptive parents who are unable to adopt and consider thinking a foster child in his home. The research pays attention to the stages of preparation of children in foster families and preparing of the foster carers. Are the children attending preschool, and are they included in the educational process. The phases of preparation of the children and foster family are of great importance for the effects of the foster care. If a foster family is well chosen, prepared and trained to know all the features of the child than the effects of the placing in foster family are positive. The research is intended for children without parental care placed in foster care, the children come from all parts Macedonia. Most children are placed in Skopje, Prilep, Makedonski Brod etc. An overview of the children without parental care placed in foster care come from different parts of Macedonia is provided in Table 3.1.

Table 3.1 Children without parental care placed in foster care come from different parts of Macedonia

municipality	Number of children	municipality	Number of children	municipality	Number of children
Berovo	6	Kavadarci	10	Prilep	15
Bitola	19	Kicevo	6	Probishtip	3
Valandovo	0	Kocani	0	Radovish	0
Veles	30	Kratovo	2	Resen	2
Vinica	2	Kriva Palanka	5	Sv. Nikole	0
Gevgelija	4	Krushevo	1	Skopje	77
Gostivar	7	Kumanovo	0	Struga	2
Debar	3	Makedonski Brod	1	Strumica	11
Del~evo	4	Negotino	0	Tetovo	1
Demir Hisar	2	Ohrid	7	Shtip	0
Total					220

Table 3.2: Children placed in foster care in the cities where the survey was conducted

Municipality	Number od foster families	Number of children placed in foster families	Number of subjects per municipality	Categorized	Uncategorized
Bitola	5	7	7	2	5
Demir Hisar	1	3	3	0	3
Krushevo	17	28	16	10	6
Makedonski Brod	20	35	35	26	9
Ohrid	1	1	1	0	1
Prilep	29	54	38	21	17
Skopje	50	82	38	12	18
Total			130	71	59

Of a total of 220 children without parental care placed in foster care this research covered 130 of them. Table 3.2 shows the age structure of all children without parental care placed in foster care in the Republic of Macedonia.

Table 3.3 Structure by gender of children placed in foster care

Municipality	Structure by gender of children in foster families		
	Male	Female	Total number of subjects
Bitola	4	3	7
Demir Hisar	2	1	3
Krushevo	7	9	16
MakedonskiBrod	18	17	35
Ohrid	0	1	1
Prilep	20	18	38
Skopje	12	18	30
Total	63	67	130
procent	48,46%	51,54%	100%

Chart 3.1: Structure by gender of children placed in foster care

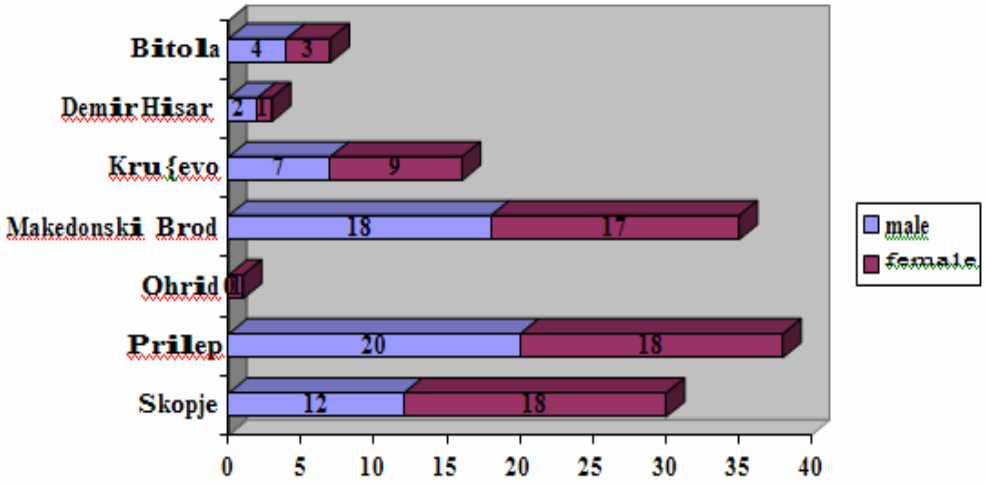

Table 3.3 and Chart 3.1 show the structure of respondents by gender, but this fact has no influence on further measures and activities for protection of the child. There is no big difference between the respondents by sex. Most children or 51.54% are female, while 48.46 are male.

Table 3.4 and Chart 3.2 show that most preschool children do not use the service enough to stay in preschool teaching or game canters, while children who are categorized do not use enough services for residence in the day care center for children with special needs. The use of day care centers for a number of foster families is a major commitment. In a number of cities there is no provided transportation of children attending the day care center, while a member of the foster family should be constantly engaged in carrying and returning of the child from day care center. In some cities like Makedonski Brod there is still no day center for children with special needs, although the number of accommodated children who are categorized is great. DIC has only Village Manstirec which is quite away from Makedonski Brod.

Table 3.4: Most children placed in foster family can use certain services

Municipality	Services used by children placed in foster care				
	preshool	game center	daycare center	attends regular classes	Doesn't attend anything of the stated
Bitola	/	/	/	7	/
Demir Hisar	/	/	/	3	/
Krushevo	/	/	3	6	7
MakedonskiBrod	/	/	9	3	23
Ohrid	/	/	0	0	1
Prilep	1	/	4	7	26
Skopje	1	/	3	12	14
Total	2	/	19	38	71
	1,54%	0%	14,62%	29,23%	54,61%

Chart 3.2: Use of services by children placed in foster families by municipalities

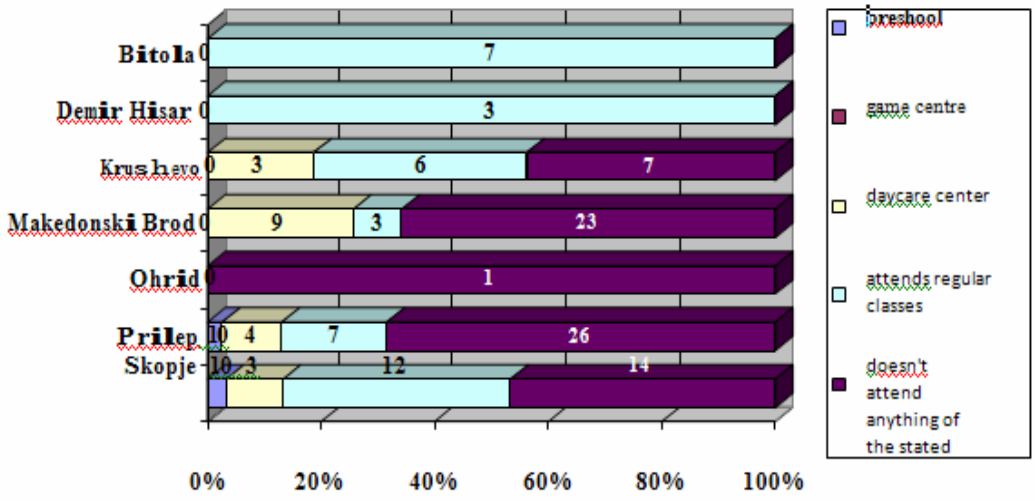

Table 3.5 shows children who are the subject of investigation and placed in foster care. Children come from different places of the country. From the result it can be seen that most children have made preparations for their placement in foster family. Preparation phase for foster care is applied among 102 children. The preparation of the child is carried out depending on where the child stayed before placement in a foster family, with parents, with relatives, in an institution, in another foster family, etc. In cases where children come from one place and are placed in another place where instead the competent Social Work Centre for foster families is another center for social work, care preparations are made among two social welfare centers. The Center for Social Work where the child comes from makes the overall preparation around the child, of course in collaboration with the Center for Social Work where family originates from. There are permanent contacts between the two centers, foster family and the child. Meetings are organized between the foster family and the child in the presence of experts from the Centre for Social Work.

Table 3.5 Preparation of children for placement and achieved results

Municipality	Whether there is preparation of the child for placement in foster family			Changes the child placed in a foster family is showing		
	yes	no	other	there are positive changes	are no changes	other
Bitola	7	0	0	7	0	0
D. Hisar	3	0	0	2	1	0
Krushevo	15	1	0	13	3	0
M. Brod	27	6	2	29	2	4
Ohrid	1	0	0	1	0	0
Prilep	29	7	2	32	4	2
Skopje	20	9	1	26	3	1
Total	102	23	5	110	13	7
	78,46%	17,69%	3,85%	84,62%	10%	5,38%

Table 3.6: Children placed in foster care families which are special supplement users

Municipality	Wether there is preparation of the child p in foster family not categorized		
	yes	no	Number of subjects
Bitola	2	5	7
Demir Hisar	0	3	3
Kru{evo	10	6	16
MakedonskiBrod	26	9	35
Ohrid	0	1	1
Prilep	21	17	38
Skopje	12	18	30
Total	71	59	130
	54,62%	45,38%	100%

Most children have acquired the right of special allowance on the basis of category and not being in residential care. That is just a couple of kids out categorized not exercise their right to special allowance.

From Table 3.6 we can clearly see that the majority of children are categorized users of special allowance. Percent expressed 95.77% categorized children have cash compensation as a separate accessory. Only a small number of children who are categorized are not beneficiaries of the special allowance or 4.22%. This means that families who take care of a categorized child have additional cash income due to the specific needs of the child. From the collected data shown in the table it can be concluded that the majority of children placed in foster care are categorized, i.e. children with special needs.

Table 3.7: Duration of the placement of children in foster care

Duration of the placement of children in foster care			
	yes	no	total
Categorized	68	3	71
Un categorized	0	59	59
Total	68	62	130

Chart 3.7: Duration of the placement of children in foster care

Municipality	Duration of the placement of children in foster care			
	up till one year	from one up to three years	more then three years	more then ten years
Bitola	0	0	7	0
Demir Hisar	0	3	0	0
Krushevo	4	5	7	0
MakedonskiBrod	2	3	36	4
Ohrid	1	0	0	0
Prilep	3	10	20	5
Skopje	7	8	13	2
Total	17	29	73	11
	13,08%	22,31%	56,15%	8,46%

Table 3.7 and Chart 3.3 clearly show that most children stay in foster care for more than three years, which means that most of the children are taken care of long-term accommodation, i.e. 56.15% of the children are placed in families more than three years.

4. RECOMMENDATIONS

A greater transparency campaign is required to attract new foster families who will be available to the Centers for Social Work in the Republic of Macedonia. This will bring more available families from which you can choose what best can contribute to the overall development of the person with disabilities, and not to place the person in any family.

Assistance and support to the person, and the foster family is required throughout the period of care. Early detection of problems that the person and the family are facing will affect their faster and more efficient solution. SWC should increase visits to foster families from other municipalities where there are situated persons, because for most people visit from parent SWC does not take place according to the provisions. So there is a need for foster families who will be trained to accept a person with emergency for accommodation for a few days or a person with disabilities who need long-term treatment.

5. CONCLUSION

Family is very important for the development of the child. Family atmosphere, love and warmth can not be replaced by anything. That's why every child should be allowed to grow and develop in

the family. However, if the child can not live in the biological family for a variety of reasons it is good to apply such a form of protection that will replace his family.

As social workers, with the help of our professor S.Dimitrijoska, we had the opportunity to be actively involved in this project and to give as much as possible contribution to improving the lives of people with disabilities placed in foster care, and especially put emphasis on their socialization and education. Numerous educational lectures on various topics, appropriate for their age were conducted.

With this project, we hope that through the Centers for Social Work, the media and the Faculty of Electrical Sciences and Faculty of Architecture, will shed some light and raise awareness among people, and hopefully increase the number of people who will take care of persons with disabilities.

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Social Support for Parents of Persons with Intellectual Disabilities in Daycare Centers in Kriva Palanka and Kumanovo

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Abstract:

Negative attitudes towards diversity and condition of intellectual disability, the high degree of prejudice and social exclusion of everyday life, leads parents of persons with intellectual disabilities in a state of social isolation. Lowering the tendency of social isolation of the persons with intellectual disabilities and their parents as well as suggesting them the social network, reduces the social isolation.

The topic of interest of this work is social support as a factor in the processes of interpersonal relationships and factor for the preservation of social networking. Notion of social support will define, enumerate the types of social support, the sources and ways of the implementation of social support of parents of persons with intellectual disabilities.
For this research, we included in this research both fathers and mothers, using a survey questionnaire, especially suited for the parents of persons with intellectual disabilities. Positive results of this research indicate the formation of new projects for other daycare centers in Kumanovo.

Keywords: Social support, persons with intellectual disabilities, parents of persons with intellectual disabilities, daycare centers, Social support for parents of persons with intellectual disabilities in daycare centers.

1. INTRODUCTION

"**Social support"** is an interpersonal process in which different individuals in their social relationships act in accordance with the situation, so as to help each other (Bulinger H., Novak J., 2004).

Social support as an important factor in the processes of interpersonal relationships is the topic of interest of a great number of researchers for the operationalization of this notion, as well as an important factor of the child's adjustment in society, but it is also a significant factor in the context of child abuse and negligence. One can discover more about the notion of social support in the subject Social Work within a Network, which is available as an elective subject for postgraduate studies at the Institute of Social Works at the Faculty of Philosophy in Skopje.

"***Social support*** is defined as the existence or availability of reliable persons, who make it known to us that they care about us, love us and respect us" (Sarason and co. 1990, Kreger K., 2004). It constitutes two mutually dependable elements:

- Perception about the enough number of available reliable persons in the case of need and

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- The degree of satisfaction from the available support.

One can look at social support in two ways: as a size of the parents' social network and as their perception about the level of satisfaction for the need of support and information (so-called perceived social support) in view of the fact that the parents receive more or less social support in the tighter or wider local community, which on the other hand, acts upon the adjustment, health and stress (Jakovlević D., 2004).

The size of the parents' social network is made up by friends, colleagues at work, the boss, the spouse and some other adults with whom the person interacts socially. Therewith it brings a greater number of responsibilities which the person takes upon themselves, and they can be a source of stress. When it comes to the working environment, fostering teamwork and initiating cooperation between the employees increases cooperation and delegates the responsibilities between the employees, while reducing stress and competition amongst colleagues. The parents develop consciousness about the individual through team work, so by mutual giving support they improve the quality of the work of each person separately, as well as the whole team.

Social support has a positive impact on the health and adjustment of parents who are married, have friends and the members of their family give them material and psychological support, then the parents with fewer contacts and less support. The partner relationships have a degree of the utmost closeness, while the complexity of such relations can make the support system difficult. There is nothing easier than supporting someone in achieving their goals, which are identical to ours, with which we agree completely and we can proclaim them as common. If the partners accept each other the way they are, thus giving us the liberty to develop in an authentic and typical way for us and have individual goals and to develop important goals for us, then we will acknowledge and respect the goals of others. Such relationships increase the stress resistance, reduce the risk of depressive moods and pessimism and enable positive effects for every success.

2. TYPES OF SOCIAL SUPPORT

Types of social support – Cohen and Wills (1985) differentiate among several kinds of social support: self-respect support, informational social support, "socializing" and instrumental support (Jakovljević D., 2004).

The self-respect support is information to the individual that they are respected and accepted. ***Self-respect*** is developed and increased by communicating with people, who accept their values and respect them regardless of their disabilities or personal failures. This type of support is connected to what is called emotional support, expressive support, ventilating support or close support.

The informational social support is support in defining, understanding and facing problems. It is also called counseling, support in the estimate or cognitive guidance.

"Socializing" is spending ones free time with others. Such support can reduce stress, as it fills the need for belonging or contacts with others, it helps adults to turn their attention from their worries and problems and it incites positive mood. Such support can also be called belonging.

The ***instrumental support*** is supplying financial assistance, material sources and necessary services. The instrumental support can reduce stress by directly solving the instrumental problem or insuring time for activities, as leisure or relaxation. Such support can also be named material support, concrete assistance or tangible support.

3. SOURCES OF SOCIAL SUPPORT

The **sources of social support** can be different. The parents receive a larger part of the social support, warmth, belonging, material and instrumental support in:

- family and family relations – establishing active communication, especially active hearing and sending of "I" messages,
- working environment – the workplace means a social status for them,
- social community –resocialization and complete participation in the social relations and enabling them to play their role (Miljenović A., 2010),
- support groups – accept all people, who face the same or similar situation or state, which is problematic for them, accept the people who would like to work on the advancement of their individual growth and enable their members mutual exchange of information and experiences through open communication and active support, and
- daycare centers – as services of the community, provide care, protection, socialization, integration and rehabilitation of persons with intellectual disabilities, while helping the parents in their normal performance of everyday activities and organizing their life. "***The daycare center*** *for persons with moderate and heavy bodily disabilities provides daily care, working-productive activity, working therapy and other activities of these persons and can perform trainings for working-productive activities, because of their inclusion in their everyday life*" (Law on social protection, 2009, Article 146).

Taking into consideration the assumption that the social support with the parents of persons with intellectual disabilities is in accordance with the needs of the persons with intellectual disabilities, we made a descriptive research (under the mentorship of Prof. S. Dimitrijoska, PhD) in two daycare centers for persons with intellectual disabilities on a regional level – Kumanovo and Kriva Palanka. The population of this research were the parents of persons with intellectual disabilities from the daycare centers in Kumanovo and Kriva Palanka, because the parents lay out different qualities in the life of their child. The father and mother contribute differently in the development of the child. Having in mind the statement that: the child needs both parents, as its mutual financial and emotional support (Klarin, M., 2006), we included in this research both fathers and mothers, using a survey questionnaire, especially suited for the parents of persons with intellectual disabilities.

The **implementation of social support of parents of persons with intellectual disabilities** was realized through some areas of support, that influence the parents' self-respect, the development and support of their child with intellectual disabilities, stabilizing partner relationships in the family, responsible parenthood and overcoming problems with the other children in the family, strengthening the consciousness and responsibility of the child itself and informing the parents about the provisions of the rights of persons with intellectual disabilities (which were also our goals in the research).

4. RESEARCH MATERIAL AND RESULTS

For the needs of this work, we will first show a table of the structure of persons with intellectual disabilities, which have been accepted by the daycare centers in Kriva Palanka and Kumanovo.

Table 1 A tabular display of persons with intellectual disabilities from Kumanovo and Kriva Palanka

Structure of persons with intellectual disability from the daycare centers	%													
	users	sex		age		place of residence		intellectual disability			nationality			
	number	male	female	under 18	above 18	city	village	moderate	difficult	combined	Macedonians	Albanians	Serbians	Roma
Kriva Palanka	26	53.85	46.15	3.84	96.15	73.08	26.92	50.00	34.62	15.38	26.00			
Kumanovo	21	85.71	14.29		100.00	85.71	14.29	71.43	28.50		71.43	9.52	14.29	4.76

The daycare center *Poraka* (Message) from Kumanovo is a non-governmental, non-profit, civil-parental organization which represents the interests of persons with intellectual disabilities regardless of their religious or ethnic affiliation. CPLIP - Poraka – Kumanovo was formed in 1966, but it works as a separate organization since 2006 under the name Poraka – nasha (Message – ours).

The daycare center from Kriva Palanka works since April 1994 as an experimental center with 19 users, but since 01.01.1996 it is a part of the Ministry for labor and social policy – Skopje, was completely financed by the afore-mentioned Ministry.

The following activities are realized within the programs of the daycare centers:

- individual talks, interviews, group therapy,
- workshops for maintaining the hygiene, supply of products, preparing lunch, serving, flower care, arranging ikebana, tapestries, plaster ornaments,
- counseling treatments and seminars with parents,
- excursions, visiting historical sites, zoos, the Deve Bair border crossing
- informing the persons with intellectual disabilities and their families about the satisfaction of their needs and solving their problems by exercising their legal rights,
- creating conditions for promoting new service providers in Kumanovo, as: a small group home and service providers for home support.

A great number of families who have children/persons with intellectual disabilities are isolated and closed in their homes. The fear of "labeling" and insecurity how to deal with the constant reactions from the surrounding, if their long-kept secret was revealed, brings the families into isolation and unavailability for cooperation. The path to a mature understanding of the child is exceptionally difficult, long-lasting, the parents must be aware of the fact that they are needed at that point exactly in order to help their child, dedicate themselves to him; disregard their own problems, disappointments, the reactions of the surroundings and the "wondrous" help from others (Levandovski D. and Todorović B., 1991).

We started from the assumption that the parents of persons with intellectual disabilities who live in the village are more isolated than the parents whose child with intellectual disabilities that live in the city.

Table 2. Structure of parents of persons with intellectual disabilities according to the feeling that they are isolated from others

Feelings of parents of persons with intellectual disabilities that they are isolated from other people									
feelings	Mother				Father				total %
	place of residence				place of residence				
	city		village		city		village		
	KU	KP	KU	KP	KU	KP	KU	KP	
never	14.71	11.76			5.88	5.88	5.88		**44.11**
rarely		11.76			2.94	2.94			**17.64**
sometimes	5.88	5.88		5.88	2.94				**20.58**
often	8.82	2.94	2.94			2.94			**17.64**
total	**29.41**	**32.34**	**2.94**	**5.88**	**11.76**	**11.76**	**5.88**	**0**	**100**

Analyzing the data presented in Table 2 and Chart 1 for the feelings of the parents that they are isolated from the others, it can be seen that 44.11% of the whole 100% specimen of the questioned parents, have never felt isolated, and only 20.58% of the questioned parents have sometimes felt isolated. The smallest percent of the questioned parents – 17.64% have said that they rarely felt the feeling of isolation. The parents who often felt the feeling of isolation are sharing the same percent

(17.64%). However, the research has shown that these parents are in need of social support in their place of residence, but have never felt more isolated from the other people, no matter where they live.

The unhappiness of the family and its dysfunction, in general, brings a lack of good relations in the family. The consequences are felt by all the members. The quality relations in the family, the relationship of the spouses filled with love, respect and understanding are the main attribute of good and responsible parenthood. The isolation of the nuclear family reduces the contacts to the nearest relatives and friends and leads to social alienation and relation weakening, and deprives the children from the values of the family surrounding and socializing, as well as the traditional and moral values. (Šadić S., 2006)

Chart 1 The structure of the parents of persons with intellectual disabilities according to the sense of isolation from others

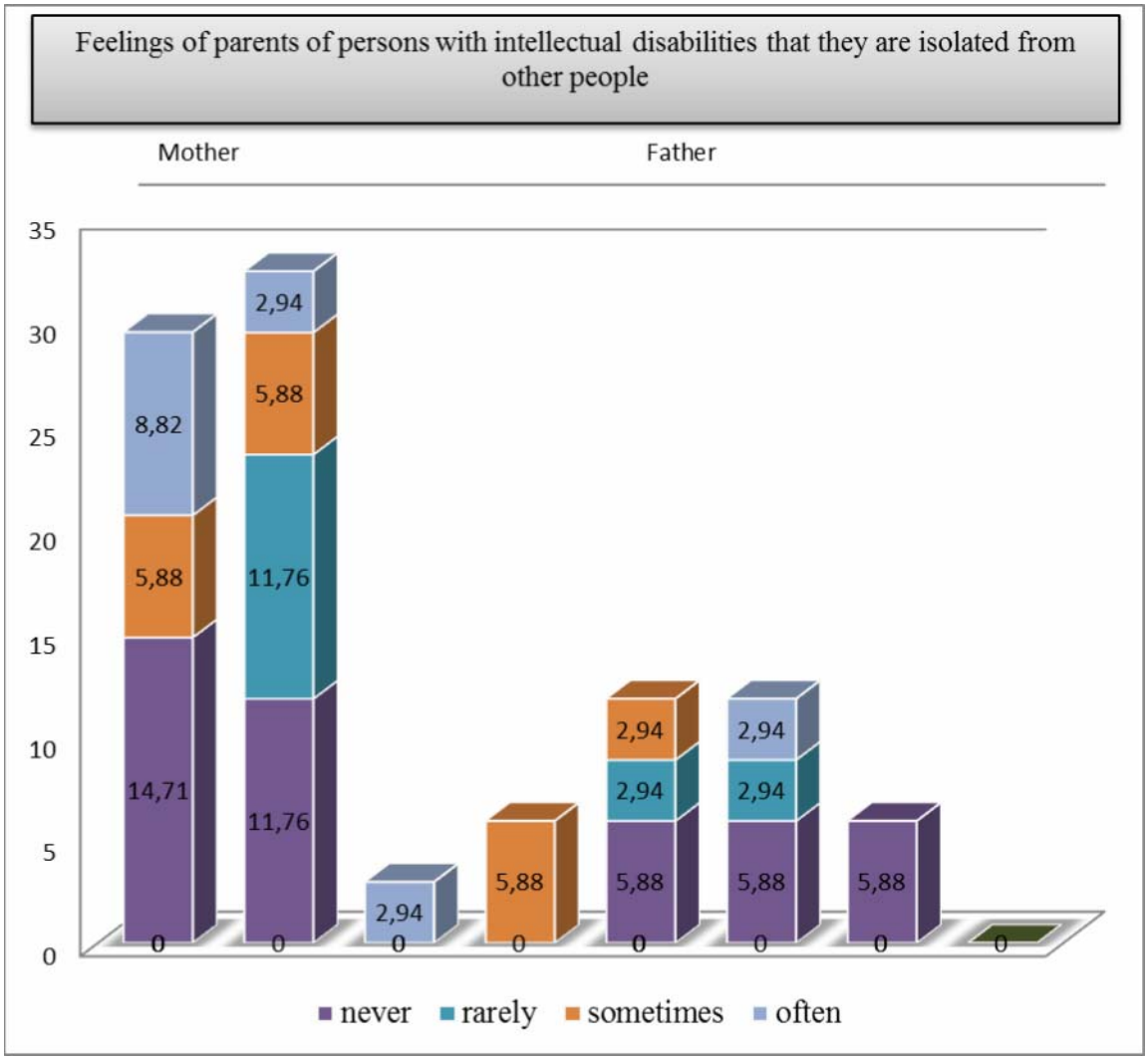

Chart 2 gives an overview of the types of advisory therapeutic services, which the parents of the persons with intellectual disabilities receive by the daycare expert team.

As required activities, which are being performed in the daycare centers with the parents of persons with intellectual disabilities by the expert team of the daycares are the following: facing the truth (55.85%), accepting their child (100%) and overcoming the conflicts between the partners (41.18%) which are mainly designated to overcome the situation of social isolation of the family, support of the parents in accepting the disabilities of their children and acquiring of new rehabilitation abilities for the intellectually disabled persons.

Chart 2 Types of advisory therapeutic activities, which the parents of the persons with intellectual disabilities receive in the daycare regarding their place of living

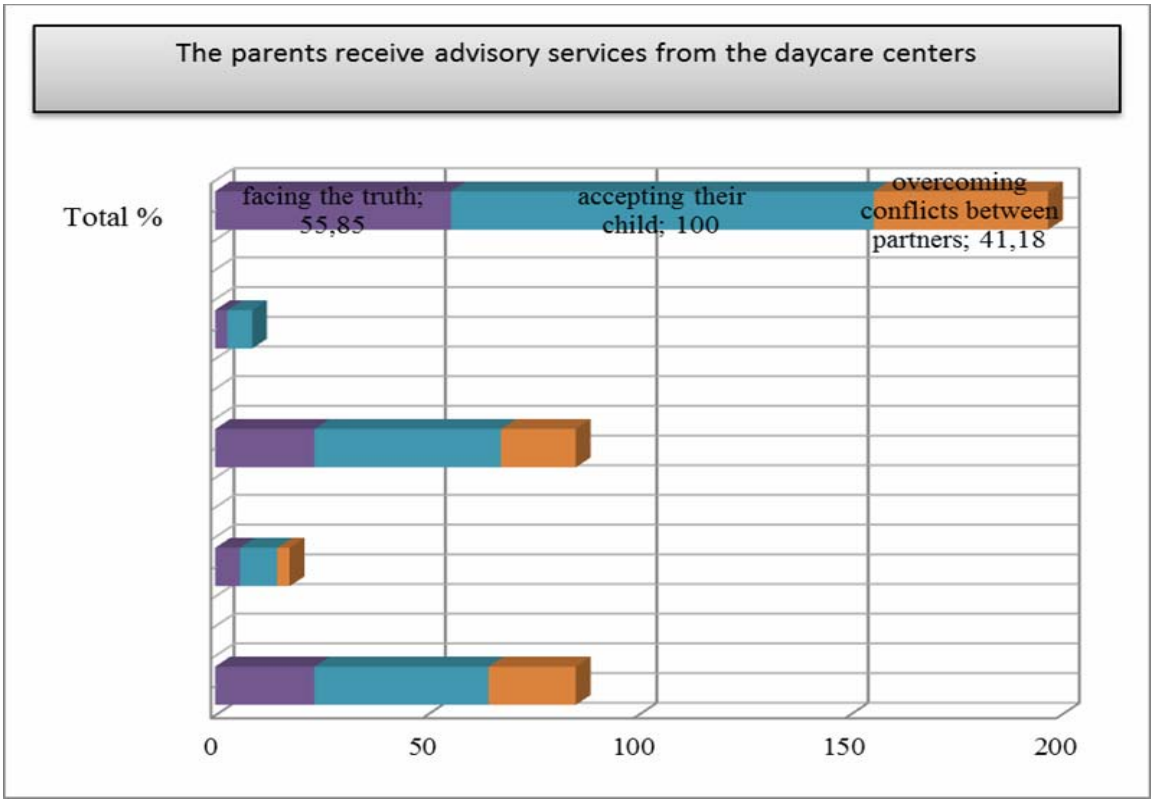

Chart 3 gives an overview of all the activities in which the parents of the urban and rural areas of Kumanovo and Kriva Palanka accompany their children with intellectual disabilities and at the same time satisfying not only the existential needs, but also the other ones being of existential importance: love, belonging and leisure are going to be indicated.

The other activities being: creative workshops on the occasion of New Year's Eve, the 14th of February, the 8th of March, the great Christian Holiday-Easter, the 3rd of December – the international day of disabled persons, the changing of the seasons, going to the market and high schools (near the centre), excursions all around the Republic of Macedonia, walks and excursions in the picnic sites, going to plays and concerts (no matter whether they humanitarian concerts being held in their honor, as the recent concert of the Serbian OK Band from Belgrade on the 26th of August 2012 in Kumanovo) and etc. are all done in the presence of the parents.

During the research we have tried to find out what activities would the parents of the intellectually disabled persons like to introduce for the support of their family (Table 3).

Looking at the data from the same table, it can be seen that the parents from Kumanovo are satisfied with the activities conducted by the daycare center (26.46%), but as the most wanted activity that they would like to add in the daycare center for the support of their family they have cited the more frequent parent-teacher conferences with even 47.04% and after that – the education for the parents, as an activity having 29.40%. There is also the need of a personal assistant or volunteer (23.52%) that would work with persons with intellectual disabilities while their parents are at work.

Chart 3. Activities in which the parents participate

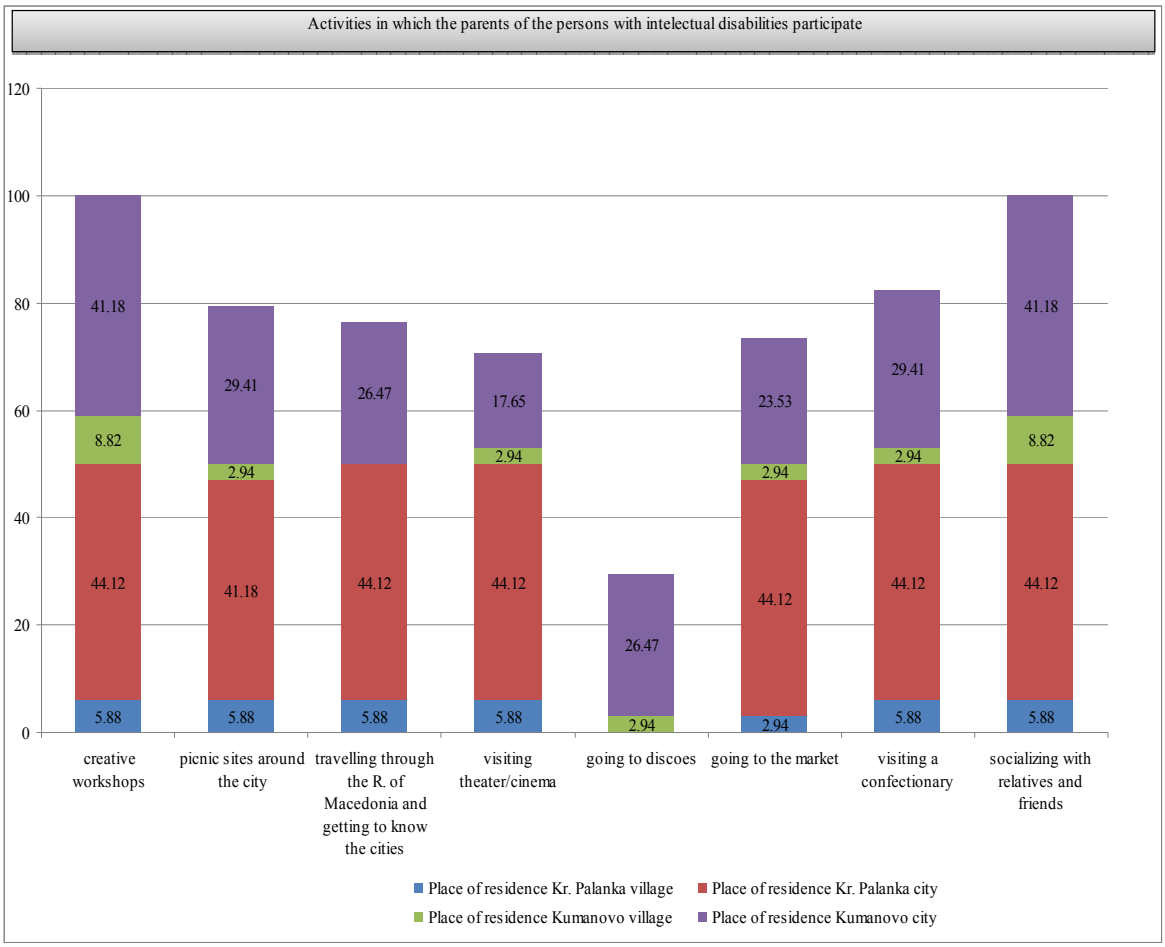

Table 3. Activities which the parents would like to introduce in the daycare center to support their families.

Activities which the parents would like to be introduced into the daycare center to support their family %										
		activities								
education of the parent	place of residence	Education for the parents	More frequent parent-teacher conference	Information about the social support	Personal assistant for the person with intellectual disabilities	Early retirement of the parent	summer vacation	Independent living with support	Small group home	satisfied with everything
primary	Kumanovo	11.76	11.76	11.76	11.76			2.94	2.94	2.94
	Kr.Palanka	2.94	2.94	5.88	2.94		8.82			2.94
secondary	Kumanovo	17.64	17.64		11.76				11.8	11.76
	Kr.Palanka	2.94	2.94	2.94	2.94	2.94	8.82			
university	Kumanovo		17.64						11.8	11.76
	Kr.Palanka	2.94	2.94	2.94	2.94	2.94	2.94		2.94	
total		38.22	55.86	23.52	32.34	5.88	20.6	2.94	29.4	29.4

The parents from Kumanovo work in two shifts, so they want their children to be taken care of during the whole day and they could be working-productive and active in the social production while not being absent from work. A part of the parents (26.46%) are worried about the future of their children and suggest opening a small group home, that will accept their children (after their death) and a wider education for the persons (for each sex separately), so that they would get ready for an independent living with support.

During the research we have tried to find out what other activities would the parents of the persons with intellectual disabilities want to be implemented to support their child.

Comparing all the activities, most of the questioned parents – 20.58% have said that learning letters and numbers is the most important activity for their children, at the same time, this percentage is the biggest percentage in the table because there are persons that can write, but still need frequent revision of the material. There is also a need of exercising machines with 18%, because the persons with intellectual disabilities are in frequent need of movement. While exercising they develop their motor skills, exercising the arm and leg muscles, and feel better while being active. The writing and medical exam are represented by 17.6%, meaning that the daycare centers need to constantly follow the health of the persons with intellectual disabilities and to constantly examine the physical and mental capabilities of the persons with intellectual disabilities.

5. CONCLUSIONS AND DRAFT MEASURES

At the end of the research, we found out that the parents depending on their place of residence, their education, monthly income and number of the family members are satisfied with the work of the daycare centers, but that was pointed out by 29.4 % of the questioned parents, especially 26.54% of the parents from Kumanovo, because in the daycare centers the persons with intellectual disabilities master the practical, cognitive and social skills needed for independent living and affirmation in the surroundings. It should be mentioned that the daycare center from Kumanovo is in a period of premises enlargement, building of a veranda and creating projects for another daycare center (wishing that all volunteers get employed and opening new job posts).

These are the basic ***draft measures***:

- Often organizing parent-teacher conferences with the experts to inform the parents of the persons with disabilities about the areas of social support and complementing the need of company with other people.
- Complementing the literature with new projects, continuous education and transmitting experiences in the daily work for improving the personal self satisfaction of the parents of persons with intellectual disabilities.
- Constant monitoring the health of the persons with disabilities and their psycho-physical capabilities.
- Animating all the structures in society in order to raise the awareness of the public about the rights of the persons with intellectual disabilities and their parents' social support.
- Lowering the tendency of social isolation of the persons with intellectual disabilities and their parents as well as suggesting them the social network. The social network, i.e. joining of the individuals or groups reduces the social isolation, but also contributes to their integration. It is common knowledge that the children with social support, better adjust to the society than the children who do not receive the support in the same amount. (Kreger K., 2004).
- Creating a safe surrounding for the persons with intellectual disabilities and making a social atmosphere that may assure strengthening of their position and their protection is an obligation for the whole population and an unavoidable way that requires some responsibility for the future.
- Constant media coverage about the rights and needs of the persons with intellectual disabilities as well as their rights, needs, and support of their parents.

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Awareness and Attitudes of Future Teachers for Children with Special Educational Needs

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Abstract:

The inclusion of children with special educational needs in the Republic of Macedonia and Serbia for years has been applied. The already undertaken reforms or the ones that are about to be undertaken in primary and secondary schools are in the direction of the change in school organization as well as preparation of the appropriate staff to work with children with special educational needs. This study aims to investigate how college teachers inform students about children with special educational needs, where they received the information and what are their attitudes to accept these children into mainstream schools and students' willingness to work with them. The study sample is composed of 50 students, teachers colleges, and departments for class teaching, 25 from Vranje and 25 from Skopje.

To assess awareness and attitudes, we used the survey technique. By contingency tables and x2 we got the answers for each question from the questionnaire and compared the results of the two different groups. Students from the Teachers Faculty in Vranje have one mandatory and one optional subject related to children with special educational needs, while the students in Skopje have only one elective course and they do not make this choice often. Both groups are not fully informed about children with special educational needs and from the statistic point of view there are no significant differences in any respect. Students from Vranje obtained most of the information through lectures at the university, and both groups believe that this category of children belong in special schools. Both groups of students say that they want to gain experience in working with children with special educational needs but are choosing to work in classrooms without these children. A positive attitude is present with both groups of students but there is a need for systematic information and introduction of new subjects and the teaching methods for all students, so that all the students will be able to cope with the news in inclusive education.

Keywords: Awareness, attitudes, inclusion, students, children with SEN.

1. INTRODUCTION

People with special educational needs are mentioned even in the earliest written history. Since then up to nowadays, there are records that point out that the attitude towards these people throughout history has been considerably changing, the intolerance period up to the period of integration, inclusion and deinstitutionalization. The general attitudes for persons with special needs changed significantly somewhere in 60's of the last century, and increased special interest in the problems of people with SEN all over the world emerges somewhere in the second half of the twentieth

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century. The great number of international documents point out to the changes of the society and the education system, in which the basic goal is the maximum integration, inclusion and participation of children with SEN in the society and that would mean a reduction of barriers between people with and without obstacles in development.

A big number of researches proved that separated education (segregation), complicates the formation and keeping the positive attitudes towards people with SEN. Adverse effects of such an attitude led to a change in the way of education and upbringing of these people, from special education to inclusion in regular education.

The inclusion contains significant system of values and philosophy of education. It denotes significant change in relation to the working programs, education of the teacher as well as the change of the teachers' competencies, methods of operation and the manner of assessment of the achieved results.

With the social changes, as well as the changes that have occurred in the last decade in our education and educational plan, the attitude change is necessary, awareness as well as preparedness to work with children with special educational needs of all sections. Such need is inevitable and necessary with the teachers in regular primary education.

Subject to this research are the awareness and attitudes of college students from the Faculty of Pedagogy "Sv. Kliment Ohridski" in Skopje and the students of the Faculty for Teachers-Vranje. The research aims to examine the attitudes of students from Faculty of Pedagogy "Sv. Kliment Ohridski" in Skopje and the students of the Faculty for Teachers-Vranje for children with SEN and how much they are informed about this category of children. So survey encompassed 50 students of different gender, from the faculty in Skopje 25 respondents (7 male and 18 female) from fourth year and from Vranje 25 respondents (6 male and 19 female) from the third year.

The research was done on the basis of causal method, the descriptive analysis and the method of comparative analysis. During the research the analysis of contents and interviewing were used. For the purposes of the research, a survey questionnaire was constructed composed of 11 questions of closed type. The obtained data from the survey questionnaire was interpreted with descriptive analysis. The data are presented with graphics and tabulated by presenting the distribution of the frequency of responses to each of the questions.

Table 2.1 Distribution in relation to the developmental obstacles

Faculty	**Skopje**		**Vranje**	
Obstacle	**Number**	**%**	**Number**	**%**
Children with speech obstacles	7	7,5	17	13,4
Children with educational obstacles	7	7,5	9	7,1
Children with obstacles in the emotional development	3	3,2	10	7,9
Children with obstacles in the intellectual development	16	17,2	23	18,1
Children who are temporarily on medical treatment at an orthopaedic hospital	1	1,1	1	0,8
Children with visual impairment	15	16,1	17	13,4
Children with hearing impairment	14	15,1	17	13,4
Children with combined impairments	13	14	15	11,8
Deaf-blind children	16	17,2	16	12,6
Children with chronic disorders of organic origin	1	1,1	2	1,6
TOTAL	93	100	127	100

2. RESULTS

On the question which of the offered 11 categories of children in the group belong the ones with special educational needs, most of the students' answers are the children with vision impairments, hearing impairments, deaf-blind children and children with intellectual disability. Particularly low percentages of students' choice are children who are on temporary medical treatment in a hospital environment and chronically ill children and children with obstacles in the emotional development (Table 2.1).

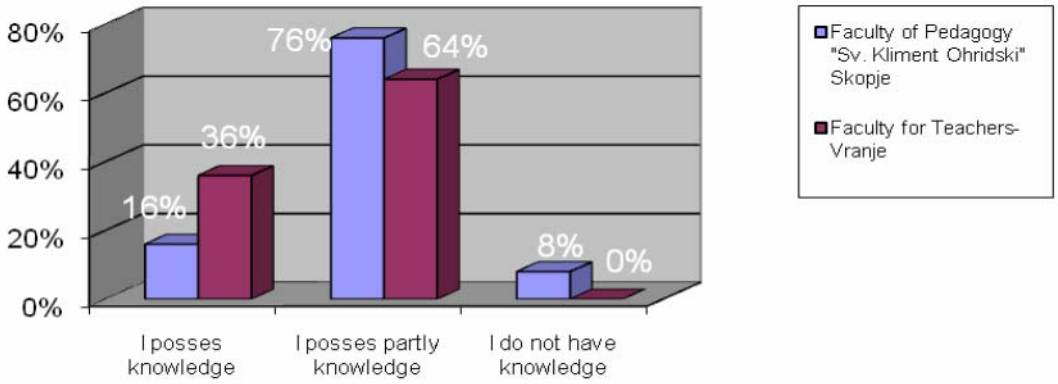

Figure 2.1 Distribution of the relation to the disabilities at the children with SEN

On the question related to the knowledge about the children with SEN obstacles in everyday life, most of the respondents believe that they are partially informed, in fact 76% of the faculty in Skopje and 64% of the respondents from the faculty in Vranje.

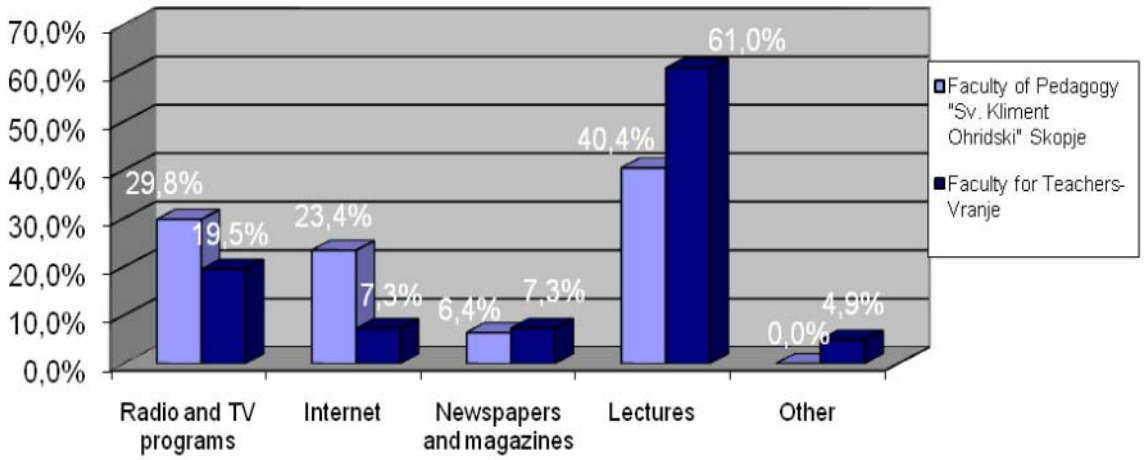

Figure 2.2 Distribution in relation to the source of information

On the question about the information about the children with SEN respondents as most common source point the lectures implemented by professors, namely 40.4% respondents from Skopje and 61% respondents from Vranje.

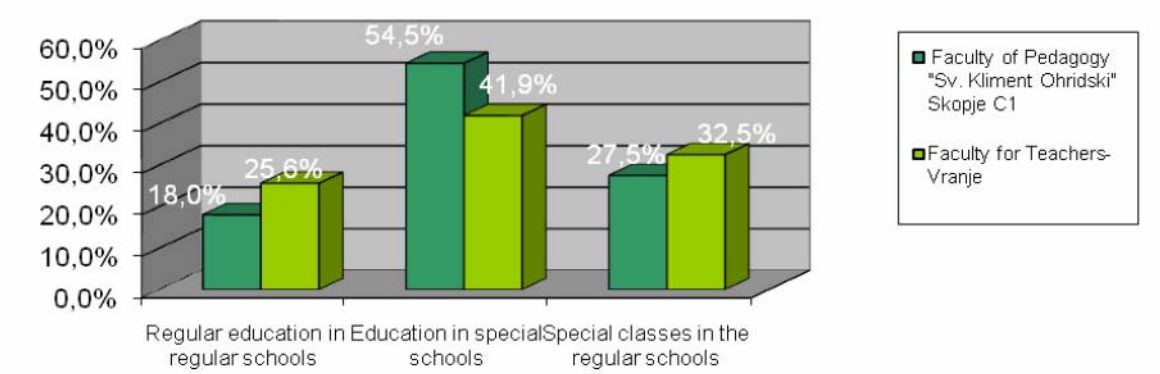

Figure 2.3 Distribution in relation to the type of teaching

Although the inclusion is more present, on the question about the type of the education of the children with SEN only 18% of the respondents from Skopje and 25.6% of the respondents from Vranje opted for the education of children with SEN in regular education, and the highest percentage of respondents opted for teaching in special education.

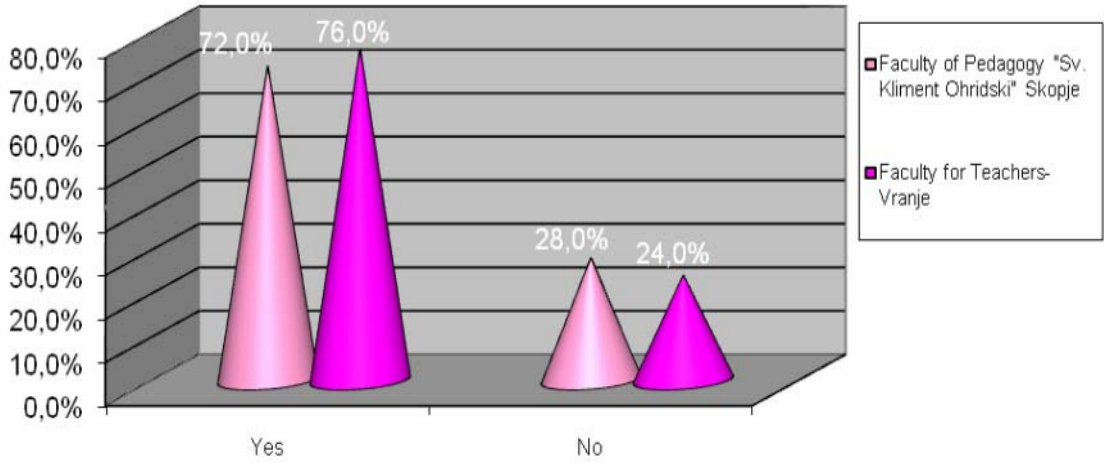

Figure 2.4 Distribution in relation to the acceptance of children with SEN

Asked whether he/she would work with children with special educational needs 72% of the respondents from Skopje and 76% of respondents from Vranje say that they want to work with children with special educational needs, which is very positive.

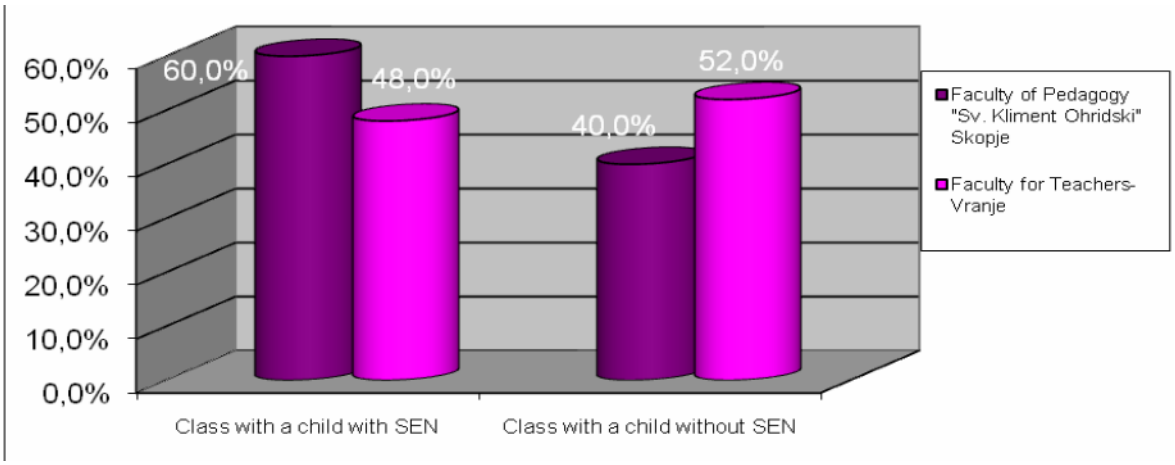

Figure 2.5 Distribution of the will to work in the class with or without child with SEN

On the question in what kind of class would they like to work in Skopje bigger number of respondents (60%) responded that they want to work in a class with a child with SEN, while the higher number of respondents from Vranje (52%) responded that they do not want to work in a class with a child with SEN.

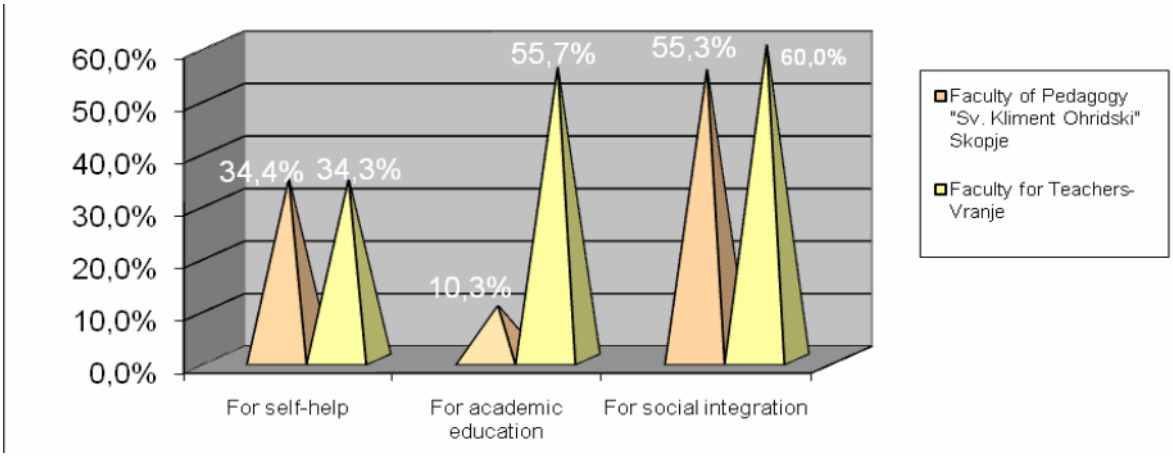

Figure 2.6 Distribution in relation to the need for education of children with SEN

On the seventh question: Why students believe that the education of children with SEN is necessary, only 10.3% of the respondents from Skopje believe that they need academic education while the percentage of respondents from Vranje is much higher and amounts to 55.7%.

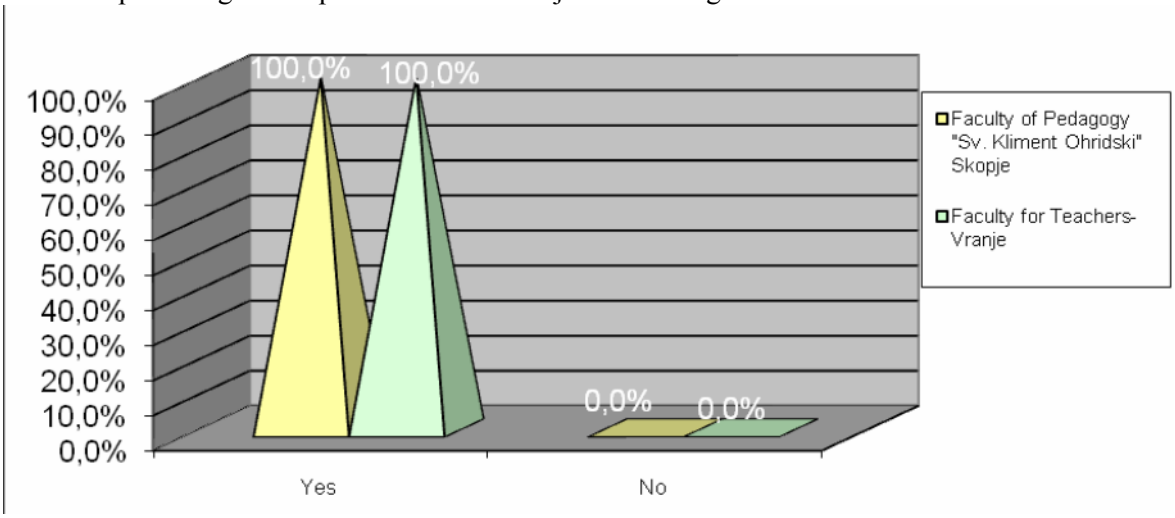

Figure 2.7 Distribution in relation to the need for additional training of students

Asked whether they believe that the additional education would help in the work with children with SEN 100% of the respondents from Skopje and 100% of the respondents from Vranje responded positively to this question.

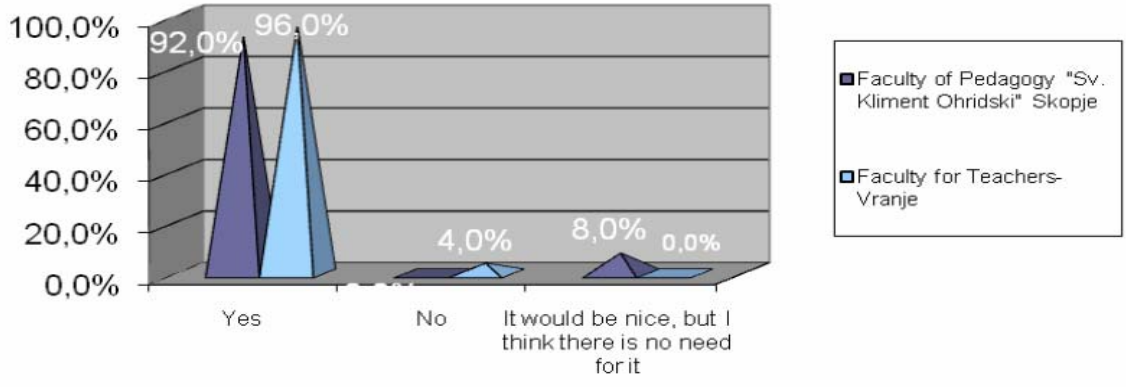

Figure 2.8 Distribution in relation to the will for additional education

In relation to the will for additional education the largest percentage of the respondents 92% from Skopje and 96% from Vranje said that they would like additional training.

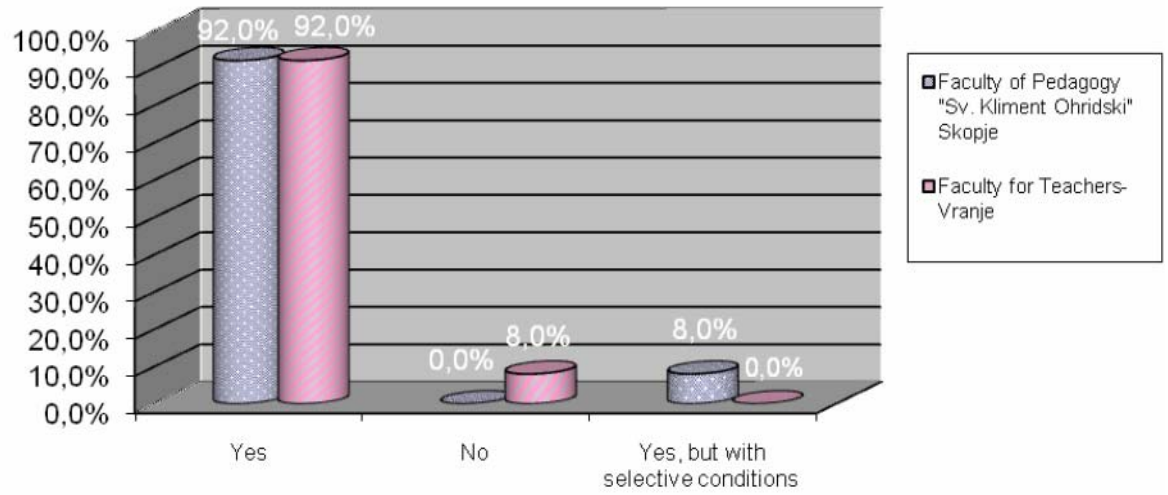

Figure 2.9 Distribution in relation to an environment with a person with a disability

In relation to the question of how many students are open for cooperation with other peers with special educational needs i.e. colleagues at the studies, most of the respondents from both faculties believe that they might cooperate with colleagues with disabilities and a smaller portion they say that they can not cooperate.

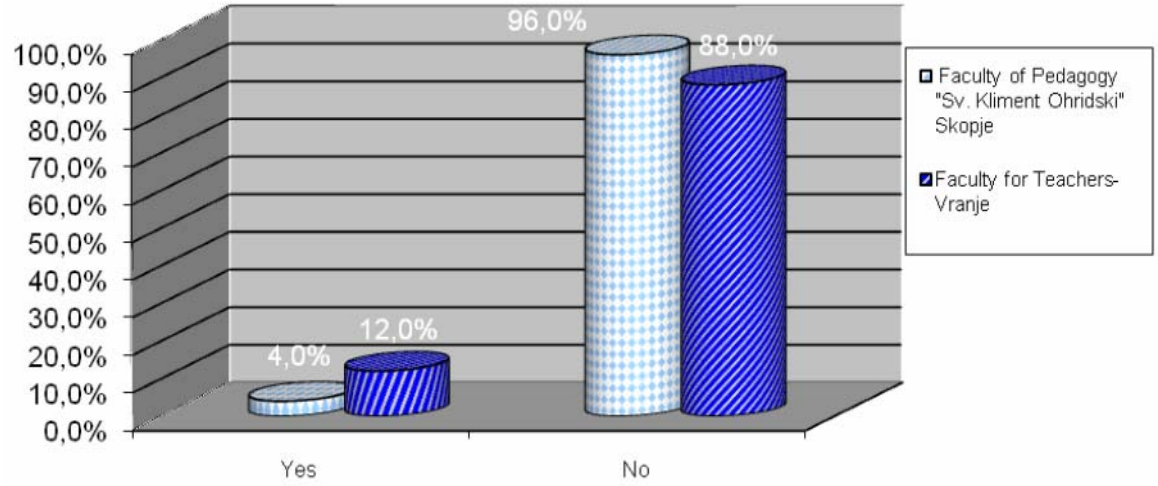

Figure 2.10 Distribution of the presence of a person with a disability in the family

To the question whether there is a person with SEN in the family only 4% of the respondents from Skopje and 12% of the respondents from Vranje answered that they have one person with SEN.

3. DISCUSSION

From the analysis of the results of the both groups of respondents it is determined that they have a positive attitude towards children with SEN, which is noticed through their will to work with this category of children, at the faculty in Skopje even 72% said that they would work with children with special educational needs, while at the faculty in Vranje 76% of the respondents claimed so.

The need of additional training and will for new knowledge was pointed by the students with their answers to the set questions, especially for the need for additional training points out the fact that all respondents answered positively to this question.

A worrying fact is that very small percentage of the respondents, especially from Skopje believes that the education of children with special educational needs will be able to acquire the academic knowledge.

Awareness and contact with people with disabilities contributes to the improvement of the attitude for these people. This was also confirmed by numerous other studies.

The results from the Hanak and Dragojevik study (Research in special education, 2002) on the topic "Social attitudes towards the people with developmental disabilities" show that the persons who have contact with persons with disabilities have considerably positive attitude compared with people who had no contact. Information for people with disability and their problems even in this study showed that it is mostly obtained through the media, while our results show that the respondents in a higher proportion are partially informed, 76% in Skopje and 64% in Vranje, and that the largest number of the received information on this topic are obtained through the lectures.

4. CONCLUSION

Based on the interpretation of the results, the adopted conclusions, and reviewing the situation with the information of the students from the Faculty of Pedagogy "Sv. Kliment Ohridski" in Skopje and the students of the Faculty for Teachers-Vranje for children with special educational needs, as well as their attitude to this category of children, we can express the following proposals:

- The is a need for systematic information for the students at the Faculty of Pedagogy "Sv. Kliment Ohridski" in Skopje and the students of the Faculty for Teachers-Vranje for the features, right and possibilities of the of children with special needs and people with disabilities in general.
- Raising awareness of students of the Faculty of Pedagogy "Sv. Kliment Ohridski" in Skopje and the students of the Faculty for Teachers-Vranje as future teachers about the existence of children with special educational needs and their education in regular conditions.
- There is a need for more information on the philosophy of inclusive education and inclusive society.
- Introducing the education components in the subject from the curriculum at Faculty of Pedagogy "Sv. Kliment Ohridski" in Skopje, in particular methodology for work with children with special educational needs as obligatory subject. (At the Faculty for Teachers-Vranje the subject methodology for work with children with SEN is obligatory).
- Organizing seminars, workshops and training sessions for teachers who already work in the schools, which works by inclusive classes.
- There is a need for greater cooperation between the regular teachers and special educators (special education).

LIST OF ABBREVIATIONS/ACRONYMS

SEN

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Studying with Disabilities - The Case of University of Zagreb

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[2] Mentor: Jerko Markovina

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Abstract:

University of Zagreb, which enrolls over 65000 students annually, has only about 200 students with disabilities.[3] Most of them attend Faculty of Humanities and Social Sciences that has 48 and Faculty of Economics with 21 students with disabilities.[4]

Faculty of Humanities and Social Sciences in Zagreb is the most accessible to this population of students. It has access ramps, elevators and other aids suited to the needs of students with disabilities. There is also a special working room that is adapted for blind and visually impaired persons as well as for students with mobility problems.

Zagreb, the capital of Croatia, is home to many associations whose goals are to facilitate adaptation of persons with disabilities from early life, education and future employment. The Office for students with disabilities of the University of Zagreb helps students get direct help in solving specific problems that may arise during their studies, and as such is the mechanism of ensuring equal opportunities.

Keywords: students with disabilities, University of Zagreb, education

1. INTRODUCTION

Each student has his or her own priorities, but their common goal is to be satisfied with their education and successful in future employment. In this path, students are faced with many new situations and problems, but these challenges are even harder for students with disabilities. In Croatia still not all conditions are favorable for persons with disabilities to be able to choose their profession due to obstacles of various kinds. Education is one of the key elements for social inclusion and therefore very important for people with special needs. Because of their daily challenges of functioning they are often excluded from educational opportunities in the system and it is essential to provide them with equal rights and opportunities.

Awareness of this problem has motivated a group of students and teachers to engage on a service-learning project addressing the issue of student life of people with disabilities. By assessing the current situation, we will be able to identify key problems and obstacles and propose solutions to institutions in charge of improving the educational system.

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[3] Kiš-Glavaš, L., Ruškan, A., Rudić, D., *Političko obrazovanje*, Vol.1, (2005.), br.4, str. 229-240
[4] Franulović, M., 2009, Neki aspekti kvalitete života studenata s invaliditetom, str.15

2. METHODOLOGY

Data for this case study was collected as a part of a service learning project. Students conducted field research by visiting faculties of the University of Zagreb, gathering secondary data, accessing existing literature and databases. Information about accessibility of buildings and classrooms were gathered and photographs of current status were taken.

The second part of this study was to learn more about institutions and organizations in charge of facilitating life and work of students with disabilities in the City of Zagreb and at the University of Zagreb. The third component was the in-depth interview with a disabled student. It was conducted with Ms. Antonia Vuk, 25 years old crisis management student at the Polytechnic University of Applied Sciences in Velika Gorica. This interview provided a firsthand view of how it is to study with disabilities in Zagreb, Croatia.

3. THE GOAL OF THE STUDY

The main goal of this study was to give an overview of current situation (status quo) regarding the ease of access and studying for students with disabilities on the University of Zagreb in Croatia. Objectives of the study include an overview of physical accessibility, description of the work of institutions and organizations helping students and an inside view by one student with disability.

4. RESULTS AND DISCUSSION

4.1. Access to University for students with disabilities

This paper presents two faculties that have most of students with disabilities. Also the Student Centre in Zagreb is shown as a center of student life events.

4.1.1. Faculty of Humanities and Social Sciences

The Faculty of Humanities and Social Sciences in Zagreb has the largest number of students with disabilities. The Faculty has an external access ramp for students with physical disabilities in wheelchairs, and inside the building there is also a ramp that allows movement inside the faculty. The Faculty is equipped with several elevators that allow vertical movement for persons with physical disabilities. This is the only college that has a wheelchair lift and a working room for students with special needs. Operating rooms for students with special needs is primarily intended for blind and visually impaired students. The special room for the blind includes a computer, two laptop computers and printers as well as Braille equipment. The equipment for work rooms was provided by the Ministry of Science, and the space was furnished with a donation. The faculty is also equipped with several accessible toilets.

Figure 4.1 Mobility aid for stairs

4.1.2. Faculty of Economics

At the Zagreb Faculty of Economics there are 21 students with special needs. The school has external access for people with physical disabilities and is equipped with elevators which allow vertical movement of students and access to virtually all classrooms. In order to accommodate students in wheelchairs, the tables in first rows have no chairs in order to facilitate access to the desk. Faculty of Economics is also equipped with several disability-adapted toilets.

Figure 4.2 Access to Faculty of Economics Zagreb

4.1.3. Student Center

Student center is the main location for student restaurant, learning space, cultural and educational events. The restaurant in the Student center is located on the ground floor and it is accessible to students in wheelchairs. Resources located on the first floor, such as Internet café is inaccessible to persons with disabilities, because it is possible to reach only by stairs. Student Service which serves as the mediator to find part-time jobs is on the second floor and is also inaccessible to persons with disabilities. Student Center is not equipped with wheelchair-accessible toilet.

Figure 4.3 Access to Student Center Zagreb

4.1.4. Interview with a student with disability

In order to gain insight about student life for a person with disability, an in-depth interview was conducted with Antonia Wolf, 25 year old student of Crisis Management at the Polytechnic University of Applied Sciences Velika Gorica.

For Ms. Wolf, the most important thing when choosing a college was that faculty facilities are adapted to persons with disabilities. The reason why this was the key requirement for her is the ability to attend lectures. She also noted that her performance also depends on the readiness of teachers to understand her limitations. Moreover, she notes that people with disabilities are treated equally by other students.

As for the overall situation at the city of Zagreb, she has a negative experience. Ms. Wolf is aware that there is a program through which people with disabilities may request assistance from a fellow student that goes through study and helps other students and teachers to adapt. The real problem is that there is a lack of adequate infrastructure to permit normal access to all programs and the fact

that because of the problem, people with disabilities usually study the programs that may not be their genuine interest.

As the main cause of university buildings not being adapted is that they date from times when it was not considered important to provide for the special needs of persons with any kind of disabilities. Moreover, even if there was an initiative and financial resources to adapt the buildings this may not be possible in some cases because some of them are located in buildings that have a status of cultural heritage and as such cannot be changed.

The conclusion of the interview is that the situation for students with disabilities is rather hard and changes are sometimes difficult to implement due to lack of finance or political will.

4.1.5. University Office for Students with Disabilities

In order to achieve that all prospective students with disabilities who wish to study at the University it is necessary to provide conditions for successful studying for all current and future students with disabilities. Therefore, the University of Zagreb established the Office for Students with Disabilities as a reference center where students can get information on the site, as well as via phone, e-mail, flyers, and brochures. The Office through its activities to students and offers direct assistance in solving specific problems that may occur during the study, and thus represents a mechanism for ensuring equal opportunities.

The office is designed for students with the following disabilities:

- • visually impaired
- • with hearing impairments
- • with physical disabilities
- • with multiple disabilities
- • chronic diseases
- • with mental disorders
- • with learning disabilities (dyslexia, dysgraphia, etc.)
- • with other medical conditions or disabilities that may affect the course of study.

Coordination for students with disabilities is made up of one representative of students with disabilities on each of the components of the University of Zagreb. Coordination is appointed by Rector of the University with the task of presenting needs, proposing and evaluating the activities.

The coordinators for students with disabilities are the link between students with disabilities and the teachers and administrative staff at each component and the Office for Students with Disabilities at the University of Zagreb. Through lectures and workshops, they will be trained and regularly informed about all activities and procedures to ensure minimum standards of accessibility to all components of the University for students with disabilities. The coordinator is the contact person at the university / academy where students can go to exercise their rights related to the adaptation of teaching and examinations, and other issues related to the rights of students with disabilities.

4.1.6. University Peer Support for students with disabilities

Peer support for students with disabilities has emerged as a measure of equal opportunities for students with disabilities in higher education in Croatia. Sensitized and trained student assistants, providing the basis of peer support, can create such conditions for students with disabilities to overcome a number of organizational barriers that exist objectively in the higher education system in Croatia. At the same time, through the knowledge and skills gained in the preparatory workshop and the implementation of peer support, students themselves will gain valuable experience and develop a range of socially desirable skills and abilities.

In the 2011/12 academic year the course started being implemented at the University of Zagreb. To complete the course, a handbook for teachers was created, and parts of the course will be placed in

an e-learning form (materials for teachers, individual plans, feedback to individual plans, planning activities).

The aim of this course is to enable students to provide quality peer support for students with disabilities in an academic environment. Expected learning outcomes are:

- Maintain the quality of social contacts in the context of peer support
- Examine the social context and their attitudes / values towards people with disabilities
- Identify ethical challenges in providing peer support
- To argue the applicability of social policy in direct work with people with disabilities
- Develop work plans to provide peer support
- To provide peer support for students with disabilities in an academic environment

Topics dealt with within the course are the following:
Definition of basic concepts, classification of injury / disability, active policy measures, models of support. The etiology and phenomenology of physical disability, capabilities and limitations of students with physical disabilities, barriers to students with physical disabilities in higher education and the possibility of overcoming them. Visual impairment (blindness and visual impairment; features, capabilities and peculiarities of functioning of students with visual impairments, difficulties in everyday academic life of students with visual impairments, the possibility and importance of support). Understanding hearing loss (deafness and hearing loss, in the adoption of specific speech and language, character-based communications; needs in higher education support system).

The skills of peer support - the importance of recognizing our own feelings and emotions of others. Appropriate display of feeling, the importance of empathy in interpersonal relationships. Developing empathy skills. Setting boundaries in relationships. Assertiveness skills.

Peer support for students with disabilities is conceived as a university course. So, it is available for enrollment to all students in any of the University of Zagreb, at the undergraduate, graduate or postgraduate level studies. The condition for entering this course is knowledge of a student with disabilities in need of peer support, and that s/he agrees to a student who is enrolled in college student assistant ("pair"). Also, you need to "pair" it with the same program of study (and the same level of study with respect to enrolled semester / year).

Students are required to attend a preparatory workshop to provide 75 hours of peer support in accordance with individual plans to provide peer support and attend supervisions.

4.1.7. Transport of students with disabilities

Figure 4.3 Transport vehicle for persons with disabilities

University students with disabilities, Croatian citizens, are eligible to receive costs of transportation if they are unable to independently use public transport. Students with Disabilities who take courses on more than two colleges and more than two study programs may not qualify for aid. Students with disabilities who receive post-graduate studies for transportation reimbursement from other sources (employment, etc.) are not eligible for support. Grant applications submitted to the Ministry of Science, Education and Sports, Department of Higher Education, a special form which is available on the website of the Ministry.

The right to transport costs is valid for the entire academic year. Students with disabilities have the right to retain this support until the end of the last semester of the study program, and a maximum of one year after graduation. Funds to support the cost of regular transportation of students with disabilities and professional studies for university students and postgraduate students with disabilities is provided by Croatian State Budget, the budget position of the Ministry of Science, Education and Sports.

5. CONCLUSIONS

The buildings of the University of Zagreb are architecturally nearly all appropriate for students with disabilities. There are access ramps at the entrance to almost all colleges. Adapted restrooms and elevators that allow access to all classrooms, unfortunately, have not yet been placed everywhere. The solution to this situation may be resolved by new Campus Borongaj. The plan is to move most of the faculties from the center of Zagreb to campus, which was constructed and planned to be adjusted for people with special needs.

In addition to the resolving physical barriers for students with special needs, there is still a large psychological problem that has not yet been addressed. Education of staff, assistants and professors at colleges should raise awareness of this issue. Awareness of a particular handicap should no longer be the goodwill of individual teachers who happen to get such students in their classes. Various associations deal with the kind of education needed for the academic community. A dose of humane approach helps greatly to bypass physical and psychological barriers, and it must be intensively encouraged in the academic community of the University of Zagreb.

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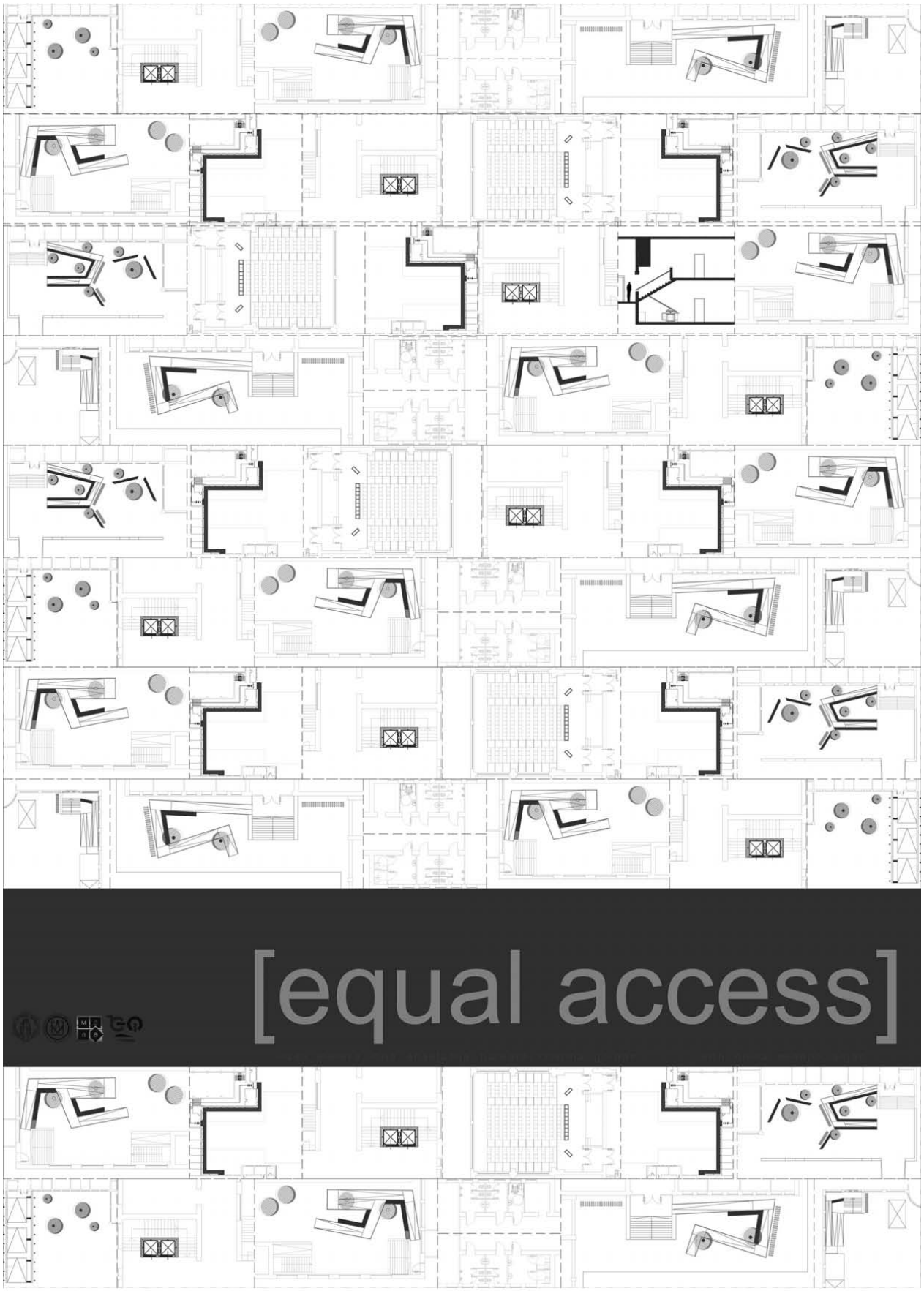
Annex 1:

Service Learning project

of the

Students from the Faculty of Architecture, University "Ss Cyril and Methodius"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Annex 2:

Service Learning project

of the

Students from the Faculty of Fine Arts, University "Ss Cyril and Methodius"

Универзитет „Св. Кирил и Методиј“ во Скопје Факултет за ликовни уметности

3. година насока графички дизајн 1 и 2
ментор доц. м-р Ладислав Цветковски

тема

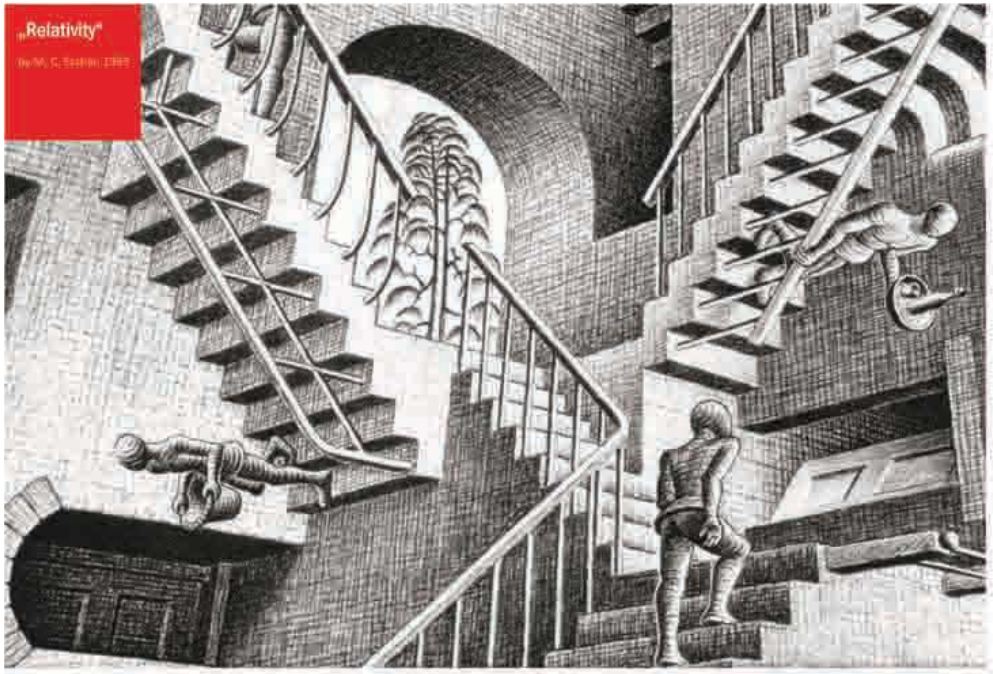
Equal Access through Service Learning for Persons with Disabilities

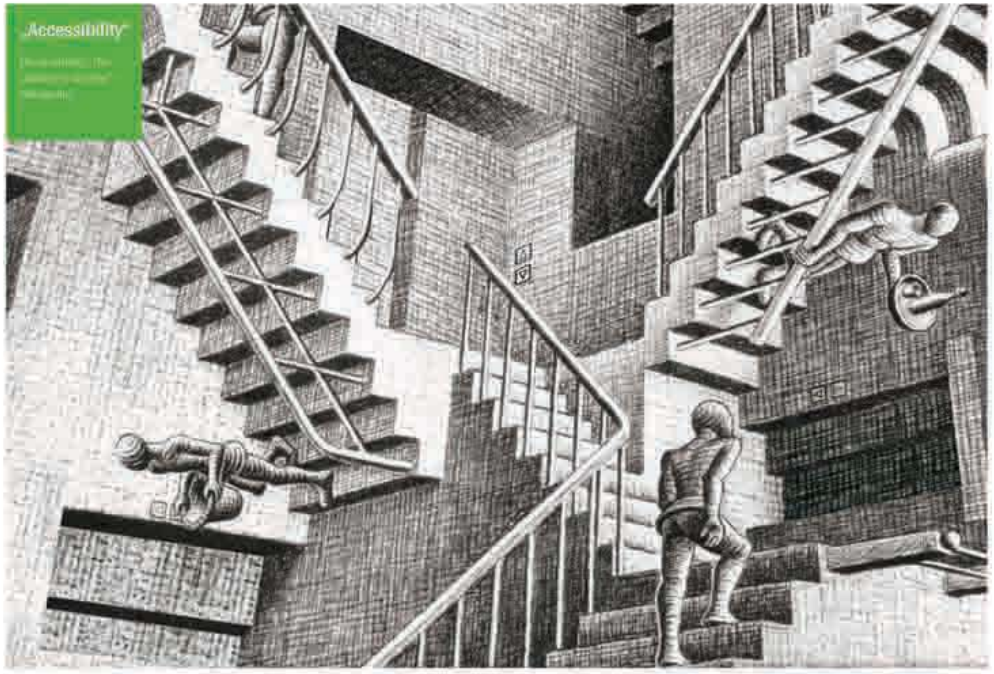

МАЛИ КРИЛА ... !!
ВАЖНО ШТО ИМА ВНАТРЕ!
„Човекот добро гледа само со срцето,
суштината не може да се види со очи.“

Анке Клајн

„The greatest crime in the world is not developing your potential. When you do what you do best, you are helping not only yourself, but the world."

ROGER WILLIAMS





Анке Клајн

Скопје – без бариери?

Каде можете да се движите?

Skopje – without barriers?

Where can you move?

- ☐ На лекар и во аптека? *At the doctor's and pharmacies?*
- ☐ На пазар и шопинг? *On the bazar and at shopping centers?*
- ☐ Во училиште и факултет? *At school and university?*
- ☐ Во црква и џамија? *At church and mosque?*
- ☐ Во автобус? *On the bus?*
- ☐ Во кафич? *At coffee places?*
- ☐ Во музеј и на Водно? *At museums and on Vodno?*
- ☐ Во ______ ? *At* ______ ?
- ☐ На ______ ? *At* ______ ?

без бариера *without barrier*

со бариера *with barrier*

Анке Клајн

Билјана Видановска

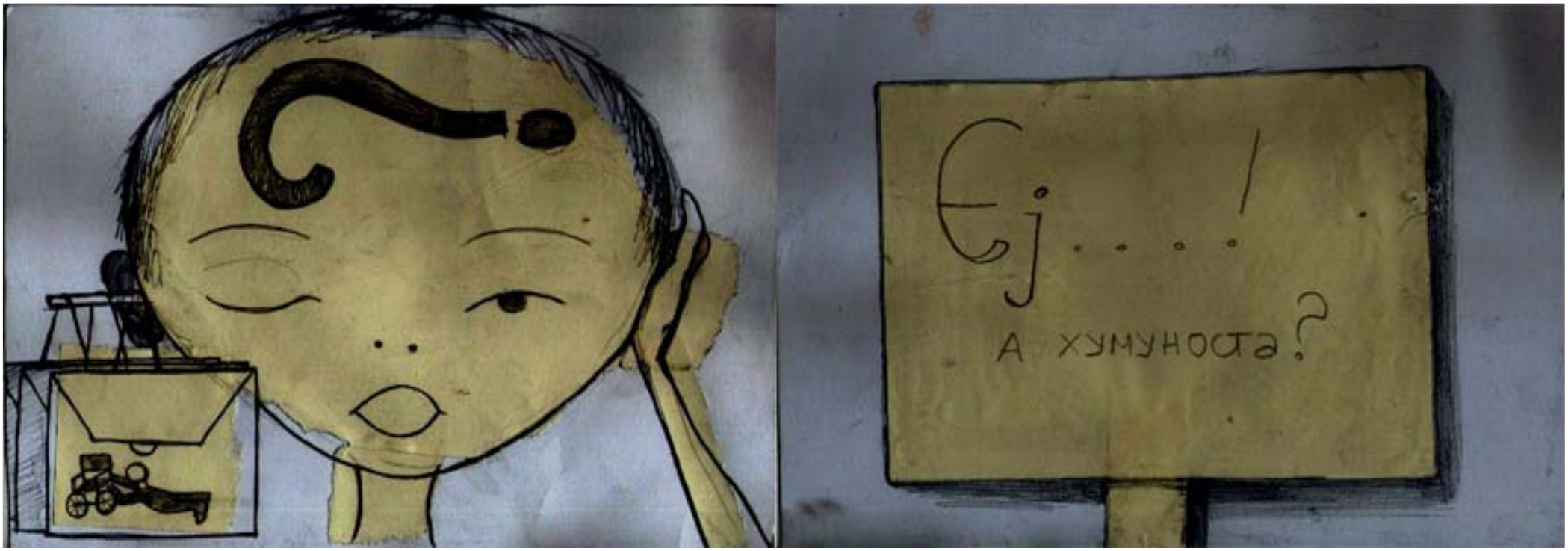
Креативноста НЕ поднесува ГРАНИЦИ
ДА и овозможиме
слободно ДВИЖЕЊЕ

Билјана Видановска

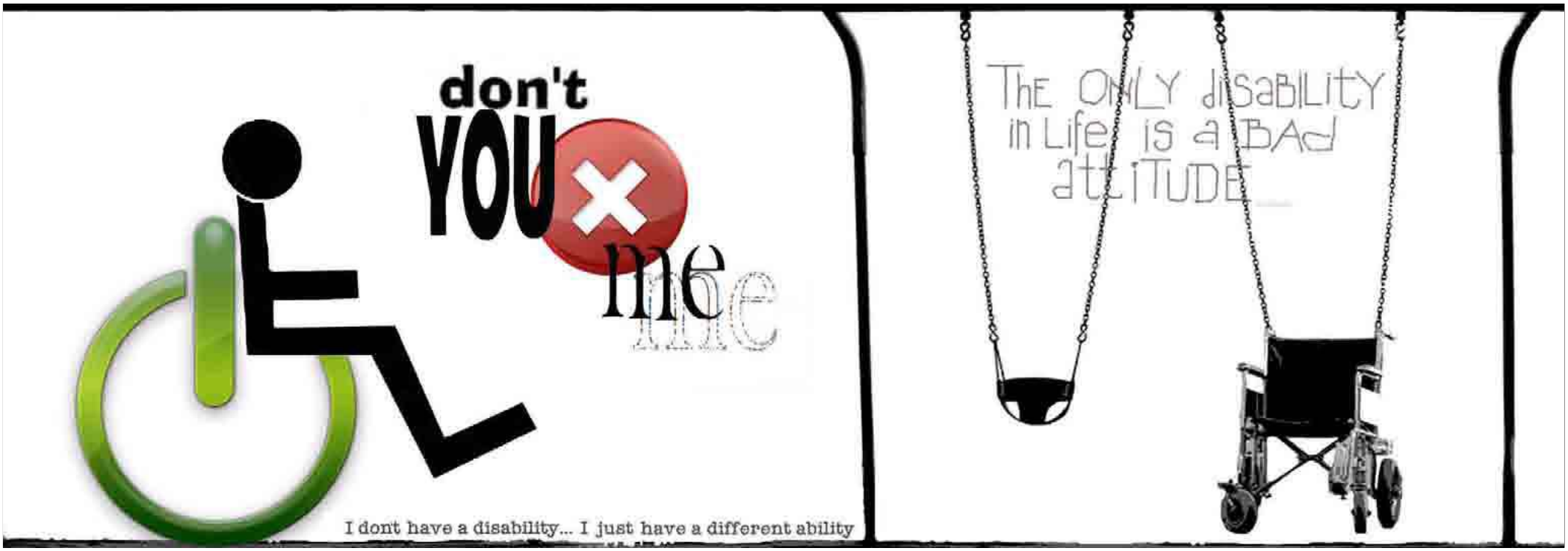
Бранкица Јордановска

Бранкица Јордановска

Бранкица Јордановска



Виданка Димитриевиќ



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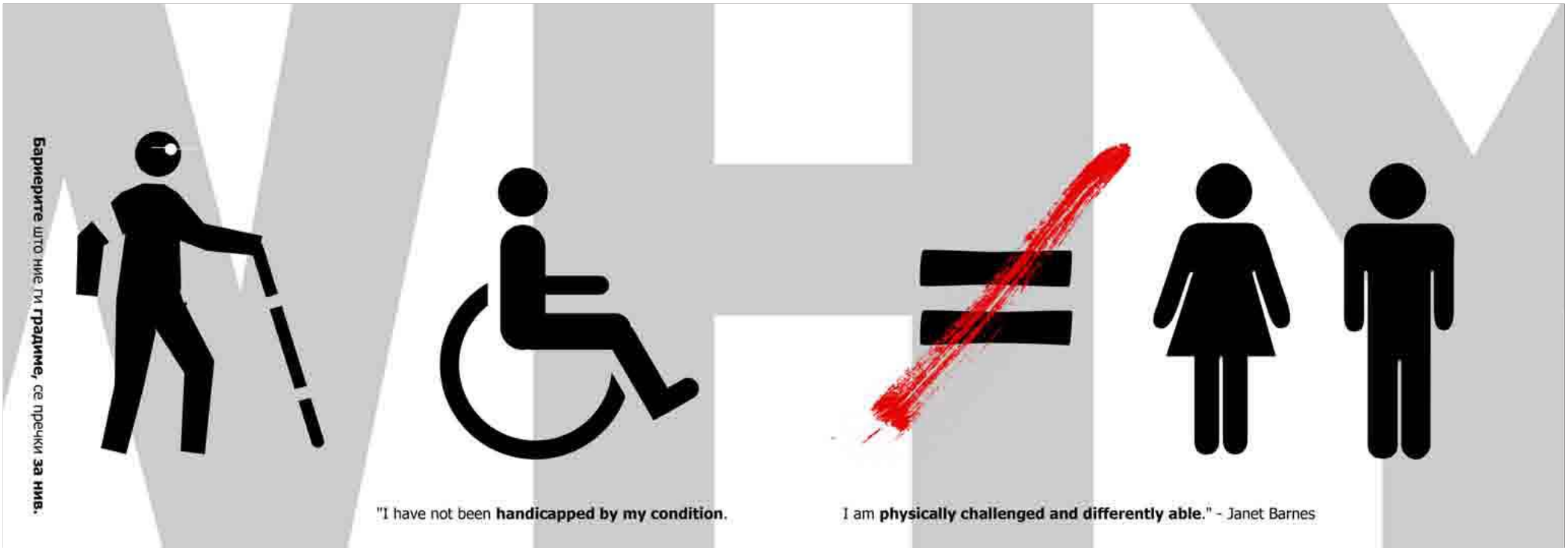
Дарко Петрушев


Бариерите што ние ги **градиме**, се пречки **за нив**.
"I have not been **handicapped by my condition**.
I am **physically challenged and differently able**." - Janet Barnes

Ертунч Сали


Бариерите што ние ги **градиме**, се пречки **за нив.**
CENSORED
FOR YOUR PROTECTION
"I have not been **handicapped by my condition**.
UNCENSORED
I am **physically challenged and differently able**." - Janet Barnes

Ертунч Сали

Маја Маневска

Филип Перески

Филип Перески

ALUMNI
ENGAGEMENT
INNOVATION
FUND

STATE ALUMNI
YOUR GLOBAL COMMUNITY