ACCESS TO INFORMATION AND SERVICES

Editor:

Mirjana Zubak

Authors:

Asja Barić

Romana Đuričić

Aleksandar Jakir

Maja Petković

Damir Španić

Zrinka Udiljak Bugarinovski

Mirjana Zubak

Translators:

This handbook was translated from Croatian into English by the following graduate students of translation in the English Department of the University of Zagreb: Dunja Bahtijarević-Pekić, Mateja Baković, Suzana Bašić, Sara Bogadi, Ivana Bradarić and Marijana Delišimunović. The translation was revised by their teacher, Dr. Nataša Pavlović.

ABOUT THE HANDBOOK

This handbook is one in a series of handbooks entitled *Students with Disabilities* created as part of the TEMPUS project Education for Equal Opportunities at Croatian Universities – EduQuality (Nr: 158757-TEMPUS-1-2009-1-HR-TEMPUS-JPGR) led by the University of Zagreb.

The series aims at equalizing the opportunities of students with disabilities to access higher education by informing, training and raising awareness of the academic and non-academic staff at Croatian universities and their constituents with regard to the specific needs of such students within Croatia's higher education system.

We consider students with disabilities to include students with vision and hearing impairments, motor impairment, chronic disease and learning difficulties such as dyslexia and ADHD, as well as students with mental disturbances and disorders. By categorizing these students as students with disabilities our intention is by no means to stigmatize or brand them, but rather to emphasize the need for accommodation of academic content to such students, as well as to present some examples of good practice.

The handbooks were written by members of all partner institutions in the project: the academic and non-academic staff of the University of Zagreb, Josip Juraj Strossmayer University in Osijek and the Universities of Rijeka, Zadar, Split and Dubrovnik; students with and without disabilities; and a representative of Croatia's Institute for the Development of Education. Particularly invaluable was the help we received from our colleagues from partner institutions abroad (the University of Århus, Masaryk University, the University of Strathclyde and the University of Gothenburg), who offered concrete advice and guidelines based on their vast experience in supporting students with disabilities.

Each handbook covers an important aspect of students' academic life, defining it and explaining its importance with regard to the acquisition of necessary professional competences. At the same time, the handbooks point to some obstacles that can exist with regard to accessibility, in an attempt to identify the preconditions for overcoming such obstacles without compromising the defined academic standards. By emphasizing the rights of all students to equal access to higher education and by proposing measures that can equalize opportunities, often in a simple way and at no additional cost, these handbooks aim at contributing to the definition of clear accessibility standards for students with disabilities at the national level.

I would like to use this opportunity to thank all the contributors who took part, either directly or indirectly, in the creation of these handbooks. I am particularly grateful to former, current and future students with disabilities who have used and will continue to use their perseverance, courage, patience and great motivation to build the much-needed support system for students with disabilities in Croatia's higher education by pointing out their specific needs and simple ways in which these needs can be met. However, their efforts would continue to be in vain if it had not been for a large number of academic and non-academic staff members who have provided support to students with disabilities in practice, often without the existence of clear guidelines and relying only on their empathy and wish to improve the situation. I believe that these handbooks will provide them with clear and systematic guidelines that will facilitate their future work.

Dr. Lelia Kiš-Glavaš, Project Leader

THE LIST OF AUTHORS – MEMBERS OF THE WORK GROUP

Editor:

Mirjana Zubak

Authors:

Asja Barić, student	Faculty of Architecture, University of Zagreb; Coordination for Students with Disabilities
Romana Đuričić, B.A. (Social Work)	Academy of Fine Arts, University of Zagreb
Dr. **Aleksandar Jakir**, Associate Professor	Faculty of Philosophy, University of Split
Maja Petković, student	Faculty of Education and Rehabilitation Sciences, University of Zagreb
Damir Španić, B. A. (Journalism)	Josip Juraj Strossmayer University of Osijek
Zrinka Udiljak Bugarinovski, B.A. (Librarianship)	Faculty of Economics and Business, University of Zagreb
Mirjana Zubak, B. A. (Spec. Ed.)	University of Zagreb

Reviewers:

Dr. Lelia Kiš-Glavaš, Full Professor	Faculty of Education and Rehabilitation Sciences, University of Zagreb
Dr. Valentina Kranželić, Assistant Professor	Faculty of Education and Rehabilitation Sciences, University of Zagreb
Dr. Ljubica Pribanić, Full Professor	Faculty of Education and Rehabilitation Sciences, University of Zagreb
Dr. Anita Vulić-Prtorić, Full Professor	Department of Psychology and Student Counseling Center, University of Zadar

FOREWORD

At first glance, this handbook seems to be superfluous because the topic it deals with – access to information and services – is in a way self-evident. However, experience has shown that in practice it is not always so and that in the system of higher education, as in any other system, this area requires careful planning and consideration, as well as taking into account the needs of specific groups, in this case those of students with disabilities.

The importance of access to information and services is witnessed by the fact that there are many Croatian and international legal documents regulating this issue, and by the fact that it is mentioned in all regulations promoting the rights of persons with disabilities, the principle of equal opportunities and non-discrimination. In today's information society access to information has become a basic human right, without which there can be no equality or equal opportunities in general.

Contemporary initiatives link the concept of information literacy with the system of education, particularly that of higher education. They highlight information literacy, which starts with access to information, as a key engine of knowledge societies that the modern world strives to achieve.

The recognition of this often neglected topic has resulted in this handbook, which is aimed at making the readers think and ask questions about which information is offered to students, how appropriate the ways in which information is distributed are, and what can be done in order for the information to reach its intended recipients.

The handbook deals with the following topics: which information is important to students, the ways in which this information can be shared, the importance and accessibility of Internet content in the process of communicating information, how contemporary assistive technology can help in this process, which services are particularly important to students, their role in informing the students, and what can be done in order for the services to become accessible to all students.

The handbook offers useful tips related to the topics listed above. It contains a large number of links to useful websites and other resources where additional information can be found. This handbook provides answers to some questions and offers possible solutions to particular problem situations, but most of all it highlights the topics that need thinking about. It is designed as a "fist-aid kit" for all those who have to find adequate solutions in their everyday work in order for the information and services they offer to actually reach

their students. The aim is to provide some guidelines and point to the resources that can offer more detailed information, to stimulate thinking about these topics that everyone knows are important but still somehow remain neglected.

The area that the handbook covers is rather broad, and the possibilities are in fact endless. For this reason it was impossible to encompass everything that could be said on this topic. The readers are therefore invited to build on what they find in the handbook using their own ideas and experiences. Whatever seems important, probably is.

We hope that the enthusiasm, effort and experience that each of the authors has invested in this handbook will result in the fulfillment of its purpose, which is to be a useful tool for all those who will reach for it to find answers or ideas in order to offer high-quality information and services to their students.

Mirjana Zubak, the Editor

CONTENTS

1. INTRODUCTION

Marko is a 25-year-old student with a disability. He was born blind and uses a white cane. After finishing secondary school, he enrolled in a university, but his study program was not his first choice. As a secondary school student he did not have a clear idea or sufficient information about what his abilities or preferences were. For this reason he chose a study program based on the recommendation of people around him, who were mostly governed by the misconceptions about what blind people do well and what they are fit to study. Marko ended up changing his study program three times until he finally chose one he was really interested in, and not one that other people thought was good for him. Marko is computer-literate, and apart from reading the assigned readings in Braille, he uses modern assistive technology that makes studying much easier. He still faces many problems which, however banal they may seem, often have serious consequences for him.

His study program belongs to the field of social sciences, and it involves a lot of reading. Marko has to convert all the reading materials to a format he can use, which he cannot always do on his own, but is helped by organizations that offer this kind of support to students. Despite the help he gets, the process of adapting the reading materials is rather slow, and Marko does not always get them in time. For this reason he cannot always take the exams when he would like to. Marko's situation is even more difficult because of the fact that his teachers, although mostly helpful, often forget that he has to get the reading lists much earlier than other students, as he requires a lot more time to gather the books he will study from.

The problem with assigned readings is not the only one Marko has to deal with. There are also the materials which his teachers use in lectures and which he cannot use, such as printed handouts. The solution to that problem is very simple. Marko only needs to get them before the lecture in electronic format, but his teachers often forget that as well, even though he constantly reminds them.

Marko frequently finds himself in awkward situations because of the fact that some announcements important to students simply do not reach him. Although the staff and fellow students usually send him notifications by email or text messages, it still happens that he does not get crucial information. Several times he missed an important lecture or exam because the notification about the change of time or venue was posted at the last moment, and only on the faculty's notice board. Much of the content published on the university website is not

accessible to him because it is published in formats that his screen readers cannot recognize, and the website itself is not completely accessible.

All these seemingly small problems that Marko often experiences put him in an unfavorable position when compared to other students. They make it difficult for him to fulfill his academic obligations successfully, which in turn affects the various rights he has as a student with a disability (scholarships, housing in student dormitories, assistive technology, etc). Without these rights, it would be even more difficult or even impossible for him to study, as his student life is already a significant financial burden on his family.

Our contemporary society and the way of life it involves could be referred to as information society. Every day we are surrounded by an almost infinite amount of various kinds of information. Thanks to the globalization caused by the development of Internet technologies, information reaches us almost immediately as it is produced. The development of civil society and the principle of human and other guaranteed rights, the democratization of an increasing number of societies and similar global processes have additionally facilitated access to different kinds of information, and stressed the importance of thinking about and planning the process of informing. The existence of numerous regulations on the topic is proof of this trend.

In the Republic of Croatia, the Act on the Right of Access to Information (Official Gazette 172/03) stipulates that all legal entities with public authority, all legal entities whose programs or activities are legally classified as being of public interest and are completely or partially financed from the state budget or from the budgets of the units of local or regional self-government, as well as companies in which the Republic of Croatia and its units of local and regional self-government, separately or collectively, have majority ownership, should regularly publish information, which has to be accurate, complete, and accessible to all stakeholders.

The requirement that all public institutions, which includes educational institutions, should function in this way guarantees the transparency of the system. More importantly, it guarantees that the citizens are provided with information crucial for making important life decisions in a timely manner. An example is a young person facing a decision of what study program to choose, or a student who cannot study successfully without information.

All these processes have contributed to raising awareness and further emphasizing the need to make additional efforts in order to guarantee the accessibility of information in various forms, so that it should really be accessible to everyone. This includes persons with disabilities, who, due to the nature of their disability and the obstacles they face in their environment, are very often deprived of information (even when it is published on time), and of many services accessible to most citizens.

The importance of this issue is witnessed by the fact that it is the focus of two articles of the Convention on the Rights of Persons with Disabilities (http://www.un.org/disabilities/convention/conventionfull.shtml), which Croatia, as a signatory, has undertaken to apply. Thus Article 9 (Accessibility) states that States Parties shall take appropriate measures to ensure to persons with disabilities access, on an equal basis with others, to the physical environment, to transportation, to information and communications, including information and communications technologies and systems, and to other facilities and services open or provided to the public, both in urban and in rural areas. These measures apply to: buildings, road, transportation and other indoor and outdoor facilities, including schools, housing, medical facilities and workplaces; information, communications and other services, including electronic services and emergency services. Article 21 (Freedom of expression and opinion, and access to information) stipulates that States Parties shall take all appropriate measures to ensure that persons with disabilities can exercise the right to freedom of expression and opinion, including the freedom to seek, receive and impart information and ideas on an equal basis with others and through all forms of communication of their choice, including the following: providing information intended for the general public to persons with disabilities in accessible formats and technologies appropriate to different kinds of disabilities in a timely manner and without additional cost; accepting and facilitating the use of sign languages, Braille, augmentative and alternative communication, and all other accessible means, modes and formats of communication of their choice by persons with disabilities in official interactions; urging private entities that provide services to the general public, including through the internet, to provide information and services in accessible and usable formats for persons with disabilities; encouraging the mass media, including providers of information through the Internet, to make their services accessible to persons with disabilities; recognizing and promoting the use of sign languages.

Adding to that Article 24 of the Convention, which guarantees to persons with disabilities the right to education at all levels, without discrimination and on the basis of equal opportunities, it can be concluded that the provisions mentioned above also apply in the area of education.

Additionally, the Anti-Discrimination Act (Official Gazette 85/08) treats the failure to make reasonable accommodations in all domains of life (including education) as a form of indirect discrimination against persons with disabilities. Therefore, there are grounds for saying that access to information for persons with disabilities is a legal obligation.

The National Strategy to Create Equal Opportunities for Persons with Disabilities 2007-2015 also deals with this issue. Section 2.9 (Information, communication, and raising awareness) thus stresses the necessity to acknowledge the specific nature of the needs of persons with disabilities and to take appropriate measures which would provide and ensure access to information and communication. Specifically, it obliges those sending the information to enable persons with disabilities to receive and forward information on the same level of quality and quantity that is available to other members of society, while taking into account their specific needs.

From all that has been said so far, it is clear that access to information and services is an important issue, especially when persons with disabilities are concerned, as it may be necessary to provide access to information and services in an alternative way. Although this may require additional effort or some ingenuity, planning and consideration, it is the duty and obligation of all service and information providers to make their services and information accessible to everyone they are intended for.

Why is information so important and why is it important that it should be accessible?

The modern way of life requires of every person to make many decisions on a daily basis, in different aspects and domains of life. Whether this concerns one's private or professional life, crucial life decisions or small, everyday decisions, one must have all the information relevant to the decision making process at one's disposal.

Being provided with full information in a timely manner is crucial for making informed decisions, and it is of particular importance when crucial life decisions are concerned, such as choosing a course of study. A person who has decided to continue their education in the higher education system will need to know all the important information related to the preferred study program (such as the conditions of enrollment, the outgoing competences,

and the study requirements), about student life in the chosen place of study, the availability of various student services, as well as job opportunities after graduation. It is much easier for students to fulfill their obligations and study successfully if they get all the necessary information about their rights, their study program, and their obligations in a timely manner. However, in the context of education, information has additional, wider significance. The accessibility of information enables and facilitates the acquisition of new knowledge and the widening of horizons.

This is why initiatives promoting the accessibility of information emphasize the close connection between information and knowledge. The way in which information is used is believed to be as important as its accessibility. In this context, the promotion of information literacy is closely connected to the educational system.

Information literacy, according to the CILIP definition (CILIP, 2004) is knowing when and why you need information, where to find it and how to evaluate, use and communicate it in an ethical manner. It entails the ability to find, evaluate, store, integrate and apply new and previous knowledge with the goal of personal, social and economic development (Pejova et al., 2006). Information literacy is most prominent in the higher education system, since on this level of education students have the opportunity to broaden their knowledge and skills. Higher education becomes a place where information literacy can be applied in a specific context.

Pejova et al. (2006) list six standards of information literacy according to which an information-literate person can be recognized:

1. Recognizing the need for information and determining the nature and scope of the necessary information;
2. Finding the necessary information efficiently and successfully;
3. Critically evaluating information and the process of finding it;
4. Managing the gathered or generated information;
5. Applying old and new information in order to build new concepts or gain new insight;
6. Using information with understanding, and recognizing cultural ethical, economic, legal and social aspects tied to using this information.

These principles also point to the close connection between information and the processes of learning and gaining new knowledge.

The view that the right to access information and knowledge is one of the basic human rights which only information-literate persons can exercise, and which improves, economically or socially, the life of every person, is becoming increasingly adopted (Muir and Oppenheim, 2001). Today, in the 21st century, it is both possible and necessary for this right to become accessible to all citizens; therefore it is not surprising that there is an increasing number of initiatives, both on the European and on the global level, which promote activities aimed at ensuring that this right is exercised in all parts of the world and for all groups of people, without exception.

These initiatives are related to the striving of contemporary societies to become knowledge societies. The Republic of Croatia has similar aspirations.

Knowledge societies are about capabilities to identify, produce, process, transform, disseminate and use information to build and apply knowledge for human development. They require an empowering social vision which encompasses plurality, inclusion, solidarity and participation (UNESCO, 2005).

An illustrative example of such initiatives can be found in the principles of the World Summit on the Information Society, whose aim is to guarantee that everyone can create, access and disseminate information and knowledge, thus enabling individuals and nations to fulfill their full potential in promoting their sustainable development and improving their quality of life. The principles are based on the goals and values expressed in the Charter of the United Nations and the Universal Declaration of Human Rights.

These principles clearly emphasize the need for information-literate societies in the whole world, and stress that global knowledge for development could be shared and strengthened more efficiently if we removed the obstacles to achieving equal access to information about economic, social, political, health, cultural, educational and scientific activities, as well as if we facilitated access to information about the public sphere, including the use of universal design and assistive technologies (WSIS, 2003).

Another example of such initiatives is the Information for All Program (IFAP), a UNESCO program which promotes universal access to information and knowledge for the development of knowledge societies, and stresses information literacy as one of the priority fields. It emphasizes the importance of information literacy to the point that it is defined as one of the basic human rights in a digital world.

Everything that has been said so far leads to the conclusion that information, as well as an adequate approach enabling its optimal use, is an immensely important segment of the education process. On the personal level, information is important because it can serve as a tool for making personal decisions or gaining knowledge. On the global level, access to information as a basic prerequisite for the development of information literacy ultimately leads to the creation of knowledge societies, thus contributing to the sustainable development of communities, which is a universal aspiration in the modern world.
For the purposes of this handbook, access to information will be covered from a personal perspective, i.e. as an important segment of student life and the process of education of students with disabilities. This personal level ultimately leads to the global effect mentioned earlier.

2. WHAT KIND OF INFORMATION IS IMPORTANT TO STUDENTS?

Some information mentioned in this chapter is particularly important to future students, some will be of interest to those who are already enrolled in a university program, and some are important to everyone.
From the moment they enter the higher education system, candidates need to have at their disposal all the relevant information about study programs in order to choose the one which is right for them. They need to know about the conditions of enrollment, as well as about the opportunities for students in their chosen place of study, especially if the student has to move to a different town, which requires a greater degree of independence. Although important to every student, the latter is particularly important to students with disabilities because they often depend on other people's assistance. Therefore, the accessibility of certain services can be a crucial factor in deciding on a place of study and study program.
The experience of university offices for students with disabilities shows that the most frequently asked questions future students pose have to do with the opportunities for students with disabilities at particular faculties and universities, with the services available in the area, or with the special rights of students with disabilities and the ways to exercise them.
While the information on study programs is accessible in different ways and future students are mostly informed in a satisfactory and timely manner, it seems that the information on

the opportunities aimed at meeting the specific needs of students with disabilities, their special rights and the ways to exercise them is not sufficiently accessible or visible. As this information is almost equally important to students with disabilities for choosing their study program and for the successful organization of everyday student life as the information on the study program itself, it should be made available whenever possible.

To that end it is necessary to encourage universities, as well as other important participants in the system of higher education, to make additional information available to their students.

Even if all the information which could be useful to students with disabilities when choosing their study program or during the course of their studies is collected and published in one place (as is the case with the website of the Office for Students with Disabilities of the University of Zagreb, www.unizg.hr/uredssi), this should not prevent individual faculties from making the same information available on their websites, or from publishing it in other ways. The same goes for other institutions and student organizations. The more often a piece of information is published or communicated, the more accessible and visible it will become, which will in turn increase the likelihood of its reaching those for whom it is intended.

It is equally important that the information should be as visible as possible, and that it should be easy to find.

2.1. Information about the institution

The basic activity of higher education institutions (universities and their constituents, i.e. faculties or academies) is to educate students, and they fulfill their tasks, among other things, by creating learning environments based on scientific principles, as well as organizing practical fieldwork, fieldtrips, mentoring, tutorials and other similar activities.

The most important thing is to provide the basic information, such as the exact name of the institution and its location, as well as contact information.

Next, the institution should provide the information on its structure, main documents and regulations, the key persons and bodies and their competences, as well as on the existing student services and their functions.

All this information should be public and, even more importantly, it should be made easily accessible to particular groups of students, such as students with disabilities.

This information is important for future students, since it can help them find the location of the institution, establish direct contact if they need further information, or familiarize themselves with the institution. As for the students already enrolled, the information can facilitate their orientation in the higher education process, in the sense that it makes it easier for them to understand their own rights and obligations, as well as the procedures and ways of exercising and protecting their rights.

Which information about the institution should be made available?

- Basic information about the institution (name, location, contact information, etc.);
- Institution structure, important bodies and persons and their roles and competences;
- Basic documents and regulations of the institution (legal acts regulating the area of higher education, the university statute, the faculty/academy statute, rules and regulations for undergraduate, graduate, integrated and postgraduate studies, ordinances on the format and presentation of theses and final exams, ordinances on quality assurance, codes of ethics, academic calendars, student guidebooks, decisions issued by the competent bodies, etc.);
- Information on the existing services for students at the university level or the faculty/academy level.

Who should make this information available?

- The Ministry of Science, Education and Sport of the Republic of Croatia;
- The Croatian Agency for Science and Higher Education;
- Universities: detailed information on the university and at least basic information on its constituents;
- University constituents (faculties/academies): detailed information on the constituent and at least basic information on the university.

2.2. Information on the study program and the choice of study programs

When it comes to students and the higher education process, undoubtedly the most important information is that on study programs. This information is important for future students because it can help them decide on the right study program and whether to continue their studies; as for the students already enrolled, this information will serve as a guideline for their everyday student life and it can help them plan their time and meet their academic obligations.

Most universities in the Republic of Croatia have developed their own way of informing future students on their study programs, and each academic year they prepare materials in different formats aimed at presenting what they are offering. Most universities publish a student guidebook and other printed materials, and some present their study programs in other ways, such as through open-doors days or university fairs. A good example of the latter is the traditional University of Zagreb Fair (http://smotra.unizg.hr), which has been held regularly since 1997 and it is the country's most visited event of this kind. The Fair lasts several days, during which time future students have the chance to get acquainted with the institutions and obtain the information on their study programs, the services they offer, as well as on the student life in general. This is a popular way of providing basic information on the requirements for admission, and the titles and competences granted upon the completion of studies, which can help future students choose the right study program. One of the advantages of this kind of event is the presence of employees of the institutions, and of their students. This provides the candidates with a chance to obtain detailed information from the perspective of the students already enrolled, as well as the teachers involved in the given study program, all in one place. The University of Zagreb has recognized the importance of providing additional information for students with disabilities, and as a result the last few Fairs have included information for students with disabilities regarding their rights and opportunities.

All prospective students find it important to know in advance what their future student responsibilities will be, but when it comes to students with disabilities, the need for information is even more acute. For them, it can be very important to know what their study

requirements will be so that they can plan in advance which accommodations might be needed.

In some exceptional cases, when students with disabilities cannot be sure whether they will be able to fulfill all of their academic obligations because of the nature of their disability, additional details on the study program and its requirements may be needed so that the student can appraise the situation accurately and ultimately make the best decision.

The best source of relevant information can be obtained from the curricula – the detailed descriptions of study programs. They give all the important information, ranging from the physical environment and existing equipment for the implementation of the study program to the requirements for admission, as well as detailed course descriptions (syllabi). The curricula also contain all the information on the lecturers who teach particular courses, about the student workload, the level, types of classes and the competences acquired upon the completion of a study program. They also include information on recommended and obligatory reading, the methods of testing, examination and evaluation, as well as information on the methods of quality assurance regarding the success of course or module implementation. For all of these reasons it is very important to make this information public and easily accessible.

In some problematic situations even all the information mentioned above may not be sufficient for candidates to appraise the situation accurately and to decide whether they will be able to enroll in a given study program. For this reason, admission candidates should be enabled to have additional consultations with the teachers involved in the given study program or with the staff of the student disability service.

The Council of the European Union also recommends that there should be a possibility of additional information and consultations that would help students with disabilities choose the form of education which is right for them (European Union, 2003a).

It is important to emphasize that this is a very sensitive matter, and special care should be dedicated to appraising the situation and evaluating the possibility of enrolment for students with disabilities so that they are not denied their fundamental human rights, as well as their rights guaranteed by the Constitution of the Republic of Croatia (Official Gazette 59/60), the

Declaration on the Rights of Persons with Disabilities (Official Gazette 47/50), the Convention on the Rights of Persons with Disabilities (http://www.posi.hr/download/Konvencija%20UN.PDF), the Anti-Discrimination Act (Official Gazette 85/08) and other regulations which protect the rights of persons with disabilities and promote the principle of equal opportunities and equality.

The right to education at all levels of the educational system is one of the fundamental human rights guaranteed by many international and Croatian regulations, and consequently, persons with disabilities, as everyone else, have the right to choose a study program according to their own wishes and preferences, and they should not be denied this right.

To be sure, there are occupations which involve specific requirements and prerequisites; in such cases, it is justified to make the selection of candidates based on criteria related to particular physical abilities (for instance, a candidate who wants to train for a career as an airline pilot has to meet very high physical requirements, such as good health and fitness). In most other cases, such initial restrictions cannot be justified, and possibly problematic cases should be carefully examined and considered on a case-by-case basis.

The requirements of a study program should be considered realistically with regard to the nature of a candidate's disability. An assessment should be made as to whether the future student will be able to fulfill the requirements of a study program. Possible accommodations of the academic environment should also be taken into consideration.

The person with a disability should never be excluded from the decision-making process, and the assessment should be made as a concerted effort.

Where the candidate is thought to be unable to fulfill the study program requirements even with all the possible accommodations, the higher-education institution should still not reject such a candidate; rather, candidates should be informed of the opinion with care and given the opportunity to make their own decision, either alone or with the help of their family. Ultimately, what is important is to enable candidates to make an informed decision and provide them with all the information which will help them through the whole process.

All the information mentioned above is useful not only to future students who are deciding on a study program, but to existing students as well: it helps them organize their responsibilities and plan their time accordingly. In this respect, it is very important to make

the syllabi, schedules (with dates and places of lectures indicated) and the required reading for each course available to students in a timely manner.

Why this is so important can be illustrated on the example of blind students who have to adapt their required reading to their specific needs, i.e. digitalize it. The sooner they get the information on the required reading, the more time they will have to adapt it to the appropriate format. Given that the process of digitalizing literature is time-consuming, it is important to provide enough time for it. Naturally, this kind of information is useful to other students as well, as shown by the fact that some universities have regulations that impose deadlines by which students should be provided with reading lists and notified about the workload required for each course. An example of this is the University of Gothenburg, Sweden, and its Rules and Regulations (2010), according to which students should be provided with reading lists at least six weeks before the classes begin.

Students with physical disabilities will need to get the schedules and locations of the classes as soon as possible so that they can organize accessible transportation in time, a task which is not always easily done.

To conclude, when decisions are being made on how certain information should be made available to students, their needs, in particular the needs of students with disabilities, should be taken into consideration.

Which information about the study program should be made available?

- The information contained in the study program descriptions, curricula, syllabi and schedules, as well as other information on the study program, such as:
  - The type and name of the study program;
  - The information on the length of study and the deadline for the completion of studies;
  - The number of ECTS credits that have to be acquired;
  - The professional or academic title or degree awarded upon completion of the study program;
  - The outgoing competences;

The list of obligatory and elective courses with corresponding ECTS credits;

The requirements for admission;

The requirements for enrolment in the subsequent semester or year;

Course admission requirements;

The ways in which the study program is completed;

The conditions under which students who have interrupted their studies may resume studying;

A list of teachers and external staff;

The teaching venue;

The beginning and end of classes, as well as the number of teaching hours;

Types of classes (lectures, seminars, practical classes, consultations, fieldwork, examinations, etc.);

Method of examination;

Examination periods;

Examination criteria;

Lists of required reading;

The availability of classes held in a foreign language;

The availability of distance learning;

- The candidates should be provided with additional advice on studies and the choice of study program.

Who should make this information available?

- Universities for their constituents (faculties, academies, departments);
- The constituents for their study programs.

2.3. Information on the particular rights of students with disabilities

The most important and the most frequently asked question for most future students with disabilities has to do with the right to priority admission and the ways in which this right can be exercised.

Candidates with disabilities have a right to "priority admission" based on the Agreement on Measures for Encouraging Admission to Higher Education Institutions signed by the Ministry of the Social Policy and Youth of the Republic of Croatia, The Ministry of Science, Education and Sport of the Republic of Croatia and the Rectors' Conference (The Government of the Republic of Croatia, 2007) on March 27th, 2007.

"Priority admission" means that candidates with a disability rating of 60% or more according to a document issued by the Croatian Pension Insurance Institute (HZMO) have a right to admission provided they meet the admission threshold (i.e. minimum requirements).

Under the new admission system introduced in the academic year 2010/2011, which is based on the results of national exams (*državna matura*), the National Centre for External Evaluation of Education, a government body in charge of administering the national exams, provides students with disabilities with the opportunity of taking these exams with accommodations to their specific needs (www.ncvvo.hr and www.postani-student.hr).

Under the old admission system, most universities and their constituents in the Republic of Croatia made sure that students with disabilities had the opportunity to take adapted admission exams; however, this right was not always formally regulated.

A positive example is the University of Zagreb, which in its admission competition requires that all of its constituents ensure accommodated testing conditions in the admission exams and in the additional testing of knowledge, skills and abilities at those constituents which still require such exams, for all students with disabilities who need such accommodations. It is important to formally regulate such practice, not only because this requires of the institutions to respect the students' rights, but also because it informs future students in a timely manner about their rights and about what they may expect in the admission process.

Furthermore, the Agreement on Measures for Encouraging Admission to Higher Education Institutions grants students with disabilities the right to be exempt from paying the tuition fee (which is then covered by the Ministry of Science, Education and Sport of the Republic of Croatia). Students with disabilities may also be admitted beyond the approved admission quotas provided they meet the admission threshold.

This information has proved to be extremely useful to students and their parents, as it can be a key factor in deciding whether to pursue further education or not. Persons with disabilities often have increased life expenses than abled persons because of the specific needs caused by their disabilities or impairments (such as additional expenses for transportation, the accommodation of reading materials, healthcare services, sign-language interpretation, etc). Students with disabilities are no exception; for them the information that they do not have to pay the tuition fee can be crucial.

Equally important is the information that students with disabilities have a priority when it comes to housing in student dormitories. In line with the decisions of the Ministry of Science, Education and Sport of the Republic of Croatia (www.mzos.hr), which stipulate that each academic year student centers should organize public competitions for student housing, students with a disability rating of 60% or more are automatically granted a place in student dormitories, while those with a lower disability rating get a number of additional points.

Guaranteed housing in a student dorm is important not only because it is the least expensive type of student housing, but also because most student dorms in Croatia have rooms accessible for persons with disabilities, and for a number of years now some student dorms have been offering various well-established services which are important for students' everyday functioning. For instance, the University of Zagreb provides 24-hour student assistance for students with most severe disabilities in the student dorm *Cvjetno naselje.* Those students who need assistance for their activities of daily living will find this information very important.

The existence of assistive technology available to students with disabilities, as well as the information on its exact location, will be of great importance to those students who need such technology, but do not have their own equipment.

Even though these issues have not yet been taken care of systematically and such services are not provided by the universities but rather by other institutions and non-governmental organizations, students with disabilities should be provided with the information on where and how they can get services such as the adaptation of reading materials, accessible transportation, sign-language interpreting, etc.

Information on the possibility of student scholarships and other sources of funding is also very important to students. In Croatia, there are a number of scholarships for students with disabilities at all levels of higher education, including postgraduate studies (state scholarships, local-community scholarships, university scholarships, scholarships offered by different foundations, etc.), and information on scholarships and their requirements should certainly be made available to students.

Information on other financial benefits, such as the transportation reimbursement provided by the Ministry of Science, Education and Sport, for which all students with a disability rating of 60% or more are eligible, should also be made as widely disseminated as possible.

What information on particular rights of students with disabilities should be made available?

The information on:

- Who has a right to priority admission and a right to accommodated testing in the national exams (*državna matura*) and in the additional knowledge, skills and abilities testing;
- On the basis of which documents one can exercise this right;
- What is regarded as meeting the admission threshold;
- Who has the right to student housing, and what the procedure is for exercising this right;
- The accessibility of various services important for the activities of daily living (ADL);
- The availability of assistive technology for students with disabilities;
- The availability of different services provided by other institutions or non-governmental organizations (accessible transportation, adaptation of reading materials, sign-language interpreting, etc.);
- Scholarships and other sources of funding for students with disabilities.

Who should make this information available?

It is advised that this information should be made available by all institutions involved in preparing and conducting admission procedures, i.e.:

- The Ministry of Science, Education and Sport;
- The Agency for Science and Higher Education;
- The National Centre for External Evaluation of Education;
- Secondary schools;
- Universities through their services for students with disabilities;
- University constituents;
- Student centers.

The official websites of these institutions are a good place to make the information available, but it should also be disseminated in other ways, e.g. orally or by means of printed materials. The most important thing is to make sure the information reaches those to whom it is intended.
If full information cannot be made available, students should be directed to the place where they can find it.

2.4. Other kinds of important information

Apart from the information concerning study programs, the fulfillment of academic obligations and the basic student rights, information about other aspects of student life is important to students as well. Since some topics have already been covered in more detail by the other handbooks from the series, they will only be mentioned here in terms of the importance of the availability of information.

What other information should be made available to students?

- Information about the possibilities of studying abroad, i.e. student exchange options for students with disabilities and the ways in which to prepare for a student exchange (**more information can be found in the handbook entitled *International Student Mobility***);
- Information about other offices and services available on the level of the university or its constituent units, such as student counseling services and the like;
- Information about different ways of spending leisure time, such as the information about culture, arts, sports, entertainment and other activities which students might find interesting, with special emphasis on the activities specifically created for students with disabilities, as well as the information on employment opportunities via the student service and on volunteering opportunities (**more information can be found in the handbook entitled *Leisure Time***);
- Information about various kinds of training courses (foreign language courses, IT courses, different workshops and similar activities).

Who should make the information available?

- The providers of such services or activities;
- Universities, via their offices for students with disabilities;
- University constituents;
- Student centers;
- Student organizations, etc.

Additional information on the possibilities of studying abroad can be found in the handbook entitled *International Student Mobility*, while additional information on the possible ways of spending leisure time can be found in the handbook entitled *Leisure Time*.

3. WAYS OF COMMUNICATING INFORMATION

3.1. The notice board

The notice board is undoubtedly the most widespread and most common way of disseminating information to students. The universities in Croatia have a long tradition of providing information via notice boards; they are the first thing one sees upon entering an institution of higher education. They are mostly located at the entrance or at some other prominent and easily accessible location. They contain official announcements, decisions, competitions, ordinances, calendars and similar content, as well other types of information, such as information about examination periods, class schedules, etc. Notice boards often include posters, invitations, informative brochures with addresses, telephone numbers, e-mail addresses and websites of various institutions, organizations and places where events are held.

This way of communicating information is easy and acceptable both to students and the staff. The notice board will therefore continue to play a major role in spreading the information, regardless of the development of modern technology. However, it must be ensured that the notice board is as useful, intuitive to use and as accessible as possible (of suitable height, position, etc.). The place where the notice board is located must also be accessible.

Additional information about the recommendations on physical accessibility of notice boards can be found in the handbook entitled *Physical Accessibility*.

It is much quicker and easier to find one's way around the notice board when the information is well organized, e.g. by titles and subtitles, when content is grouped according to topics, and the information is presented on paper of different size and color.

Important notices should be highlighted using a larger font, bold letters and markers, and the text should be framed. Notices should not overlap, and expired content should be removed so as to avoid content overload.

Since notice boards often contain a lot of information, which makes it difficult to find one's way around, students may need to be shown the exact position of a particular piece of information on the board, especially when it comes to students who find it hard to manage large quantities of written material or students with sight impairment.
Students who cannot use conventional print or who have difficulty using it should not be disregarded but rather information should also provided in an alternative format, i.e. through an alternative channel. Alternative formats include notices written in Braille for blind students, modified conventional print for visually impaired students, additional explanations of written notices for hearing impaired students, notices which are sent electronically, via SMS to the mobile phone, etc. The important thing is that the information reaches each student in an acceptable form, and that the student finds it comprehensible.

3.2 The Internet

Today, the Internet is an important source of information for every member of society. Thanks to the development of the Internet and the expansion of content available on the web, contemporary society has turned into a global information society, which was addressed in more detail in the introductory part of the handbook.
The Internet offers virtually endless possibilities in terms of information availability, and it plays an increasingly important role in the educational process, so that distance learning (e-learning) is more and more commonly used, and there are numerous other ways in which the Internet is utilized in the higher education process.

Additional information on e-learning can be found in the chapter on *Teaching methods, types and techniques* in the handbook entitled *Teaching Processes and Learning Outcomes*.

The parallel development of assistive technology has enabled persons with disabilities to access previously less accessible or completely inaccessible information and services via the Internet.

All the information mentioned as important in this handbook can be provided via the Internet. The Internet is a widely accepted and the fastest means of communication today. What has to be borne in mind when offering content via the Internet is e-accessibility.

E-accessibility refers to ensuring equal opportunities and access to e-content for everyone, including persons with disabilities (Seale and Cooper, 2010).

Vučić (2009) notes three types of accessibility:

1. **Situational accessibility** refers to the fulfillment of website accessibility requirements when using mobile technologies (mobile telephone, *iPad*, etc.) in different situations in which all website users may find themselves;
2. **Social-cultural accessibility** defines the rules for fulfilling ethnic, cultural and gender specificities of website use;
3. **Functional accessibility** determines the conditions which must be met for a person with a disability, an elderly person or a person who is sporadically or temporarily disabled due to health reasons to be able to use a website without difficulty.

It is important to meet the accessibility criteria for all three kinds of accessibility so that everyone, including persons with disabilities, can have full access that is not limited by the specificities of a particular disability.

Acknowledging the importance of the Internet for the dissemination of information, virtually all regulations and initiatives mentioned in the Introduction that guarantee equal access to information for everyone also mention access to the Internet and its content.

For example, the Convention on the Rights of Persons with Disabilities (http://www.posi.hr/download/Konvencija%20UN.PDF) explicitly requires that all electronic information sources should be made available to people with disabilities.

In its Resolution on Equal Opportunities for Pupils and Students with Disabilities in Education and Training (European Union, 2003a), the Council of the European Union stresses the importance of encouraging the use of multimedia technologies and the Internet for improving the quality of learning by facilitating access to resources and services, as well as to distance learning (e-learning); it also encourages access to all public education related websites for people with disabilities by following e-accessibility guidelines.

Acknowledging the importance of the issue, the Council of the European Union has also passed a Resolution on eAccessibility – Improving the Access of People with Disabilities to

the Knowledge Based Society (European Union, 2003b), which promotes e-content accessibility and the application of e-accessibility guidelines.

The e-accessibility guidelines referred to in all significant regulations were published by the World Wide Web Consortium - W3C (http://www.w3.org), and today they are among some of the most widely applied in practice.

Official websites of universities and their constituents are an important source of information for current and future students. They are in fact "virtual notice boards". The websites and their content are updated daily, and as such they can be the most acceptable, the easiest and the quickest way of finding relevant information for all students, especially students with disabilities.

It is therefore of utmost importance that the content published on the website should be accessible to all students in respect of the specific type and degree of their disability.

The World Wide Web Consortium has published the following framework guidelines important for e-information accessibility:

- Provide equivalent alternatives to auditory and visual content;
- Don't rely on color alone;
- Use markup and style sheets and do so properly;
- Clarify natural language usage;
- Use interim solutions;
- Use W3C technologies and guidelines;
- Provide clear navigation mechanisms;
- Ensure that documents are clear and simple[i].

More detailed explanations accompanied by practical tips on specific guidelines can be found on the following website: http://www.w3.org/TR/WCAG10/ .

Since awareness of the importance of ensuring e-content accessibility has not yet been sufficiently developed among information providers, students with disabilities may come across numerous obstacles while trying to access the content published on websites.

Some examples of bad practice related to obstacles encountered by students with disabilities are described in the sections that follow (http://www.w3.org/WAI/EO/Drafts/PWD-Use-Web/#usage).

Students with visual impairments

Students with visual impairments face obstacles in accessing visual content on a daily basis. The following obstacles frequently occur with web content:

- Photographs/drawings/illustrations unaccompanied by a spoken or written text which would provide adequate description;
- Video material unaccompanied by an audio recording or description of video content, which is important for understanding the material;
- Tables and diagrams unaccompanied by adequate description;
- Non-standard formats of documents which are difficult to interpret;
- Websites without the option to change font type, size and color, contrast or text background color;
- Websites with inconsistent layouts which impede navigation;
- Websites with poor contrast or no contrast settings.

Students with hearing impairments

When accessing web content, students with hearing impairments pay attention to the text rather than to audio recordings. The following obstacles tend to occur:

- Lack of subtitles or description of audio material, including Internet streams;
- Lack of additional picture-related content, which makes understanding more difficult for persons whose first language is the Croatian sign language;
- Lack of instructions written in clear and simple language.

Students with motor disabilities

Access to web content for students with motor disabilities is largely facilitated by assistive technology, such as specialized computer mice, special keyboards or computer programs with audio input, and the obstacles encountered while accessing web content are the following:

- Websites featuring time-limited response options;

- Search engines and tools which do not support accessible keyboards for mouse controls;
- Forms that cannot be searched logically;
- Small link fields which impede navigation for students with tremor or poor hand motor skills.

Students with specific learning difficulties

Students with specific learning difficulties face problems in language use, reading and writing. They may have limited access to web content due to:

- Small font size;
- Poor background contrast;
- Length of the text;
- Unclear text written in complex phrases.

The Dive Into Accessibility website (http://diveintoaccessibility.info/) provides interesting, illustrative descriptions and stories by students with various types of disability about the difficulties and obstacles they have encountered while accessing e-content, as well as practical guidelines on how to make a website accessible.

The Internet and the content published on the web have an increasingly significant role in the process of higher education. Today, teachers are more and more frequently providing their students with required exam literature (research and professional articles, presentations, study guides, sample exam questions) using some of the available electronic formats (Littlejohn and Higgison, 2003).

For students with disabilities, as for all other students, it is important that the required readings are accessible and delivered in a timely manner.

Here are some guidelines which teachers should follow when preparing exam literature accessible to students with disabilities:

- **Language** should be as clear and simple as possible in order to enable access for students with hearing impairments and reading difficulties (e.g. dyslexia);
- **Color** – the red/green color combination and poor contrast color schemes should be avoided in order to facilitate information access for students with visual impairments;

- **Headings and formats** – predefined styles should be used (e.g. *Heading 1* or *Heading 2*) for easier use of accessibility options;
- **Text** – larger line spacing and better font styles with minimum 12-pt size should be used;
- **Pictures** should be accompanied by a description;
- **Navigation** – all links should be accompanied by a description of the destination.

These guidelines can also be applied when preparing other written materials which are important for students.

More detailed information on ensuring maximum accessibility of electronic documents in Word, PowerPoint or PDF formats can be found on the following webpage: http://www.jisctechdis.ac.uk/techdis/resources/detail/resources/AE1-2007.

Additional information on accommodations in course and exam materials can be found in the chapter on *Teaching methods, types and techniques* in the handbook entitled *Teaching Processes and Learning Outcomes*.

A lot of useful information in the Croatian language on e-accessibility can be found on the *Pristupačnost* [Accessibility] project website (http://www.pristupacnost.net). The website contains many useful tips, not only regarding the accessibility of Internet content, but also regarding the accessibility of information and communication technologies in general, as well as the legislation, initiatives and projects in the area of accessibility. Another useful feature of the website is the option to test the accessibility of one's website.

Other useful links:

- A tool for testing website accessibility, http://www.sidar.org/hera/index.php;
- The Internet Society Disability and Special Needs Chapter, http://www.isocdisab.org;
- A Spanish foundation dealing with the issue of Internet content accessibility for people with disabilities, http://www.sidar.org;

- A network of 160 organizations from the EU area dealing with the issue of Internet accessibility for people with disabilities, http://www.eaccessibility.org;
- A website offering free accessibility tools for people with disabilities, http://accessify.com.

3.3. Other ways of communicating information

In addition to the most common ways of communicating information via notice boards and the Internet, there are many other channels of communication between students and the staff.

- **E-mail** is a widespread form of communication that is extremely well accepted among students. Thanks to its simplicity, speed and the possibility of sending different types of content, it is also one of the most useful forms of communication.
- **Intranet** (internal web) can be extremely useful for exchanging and uploading different types of content that cannot be accessed by everyone but is limited to people who have access. Different means of communication are also available.
- **Telephones and mobile telephones.** Today, mobile telephones have gained supremacy in the world of telecommunications. They are widespread, owned by almost everyone, and thanks to technological developments they have become increasingly sophisticated and now provide and increasing number of options, outgrowing their initial purpose of making telephone calls. They can be extremely practical and useful in communication, especially when urgent notification is required. Their advantage over standard telephones is the option of sending text messages (SMS), which facilitates communication with students with hearing impairments. Moreover, some mobile telephones have various customization options (e.g. text enlargement).
- **Social networks and similar services.** These offer another widespread form of communication, which has long outgrown its initial purpose of socializing with friends. Information about almost anything can be found on *Facebook*, the most popular social network, and common interest groups can be easily created and used for communication, e.g., between students and teachers. Students are likely to find this form of communication appealing and acceptable, considering the fact that nowadays most young people use it on a daily basis.

All other forms of communication and of communicating information devised by university staff and their students will also serve well, provided that they meet their purpose and satisfy the users' needs. One simply has to choose from among the numerous options that are currently available.

What always has to be taken into account is that information should invariably be provided in several different ways, so that none of the students are deprived of it.

4. ASSISTIVE TECHNOLOGY IN THE SERVICE OF ACCESSIBILITY

The development of contemporary information and communications technology (ICT) has significantly changed the functioning of modern society in all its segments. Advanced technologies have improved all systems that make up modern society, at the same time facilitating and accelerating the transfer of all kinds of information on a global level. They have also made a significant breakthrough in the equalization of opportunities for persons with disabilities.

According to Vučić (2009), in the early days of ICT development, people with disabilities were additionally denied access to scientific, educational, cultural and other types of information due to the fact that these technologies were not adapted to their abilities. However, a number of initiatives for equal opportunities in this field have resulted in the development of technical norms and guidelines that ensure access to new technologies for everyone. An example of this is the previously mentioned Internet content accessibility standard, which is now the accepted norm.

It is not enough for advanced technologies to exist; they must also be accessible. **Accessible technology** is technology that can be used by people with a wide range of abilities and disabilities. It incorporates the principles of universal design. Each user is able to interact with the technology in ways that work best for him or her. Accessible technology is either directly accessible – meaning it is usable without assistive technology – or it is compatible with standard assistive technology.[ii] In other words, technology based on the principles of universal design is any technology which was designed with different learning styles as well as different needs of potential users taken into consideration. Such technology is not only a

tool for people with disabilities, but also a tool that works better for everyone, including people with disabilities. An illustrative example is the position of the on/off switch on the computer keyboard or on the front side of the computer casing. Compared to the traditional switch, which was mounted at the back panel of the computer casing, such a change was essential in enabling people with disabilities to use computers independently, and it is much more convenient for other computer users as well (Symington, 2004).

More information on universal design can be found in the handbooks *Physical Accessibility* and *Teaching Processes and Learning Outcomes*.

Increased awareness and the many regulations and initiatives mentioned above have resulted in more attention being paid to accessibility and equal opportunities. The development of assistive technology for people with disabilities and their specific needs has also contributed to that.

Assistive technology is technology used by individuals with disabilities in order to perform functions that might otherwise be difficult or impossible. Assistive technology can include various devices, as well as hardware, software, and peripherals that assist people with disabilities in accessing computers or other information technologies (University of Washington, http://www.washington.edu/accessit/articles?109). It includes any piece of equipment or product system that is used to increase, maintain or improve the functional capabilities of people with disabilities, be it a very common and simple device such as a wheelchair, or complicated and sophisticated modern equipment associated with the use of information and communications technology (Symington, 2004).

In the area with which this handbook deals, it is precisely the technologies associated with the use of ICT in everyday life, especially in the education process, that are of great importance.

There are many possibilities and examples of the use of assistive technology. For example, people with limited hand function may use a keyboard with large keys or a special mouse to operate a computer, people who are blind may use software that reads text on the screen in a computer-generated voice, people with low vision may use software that enlarges screen

content.[iii] People with specific learning disabilities may use different programs for spelling and speech-to-text programs, which convert speech into text format.

The use of ICT plays a key role in the education process. Today, all students use computers for their studies, in one way or another. Educational content is becoming increasingly accessible by means of computers, and it has become a necessary tool in carrying out the students' obligations, as well as in everyday communication.

As Cooper (2003) emphasizes, even students with disabilities must be familiar with and skilled at using computers, and prepared to participate in all activities that involve the use of computers in order to take part in the process of higher education, whether these activities are associated with their obligations in particular courses, or with the university life in a broader sense.

For this reason it is important to ensure the accessibility of ICT and the availability of assistive technology, without which certain groups of students cannot participate in the education process on an equal footing with all other students.

Hopkins (2004) also points out the importance of assistive technology in providing access to educational and other types of information, as well as the educational environment in general. He recognizes assistive technology as one of the responsibilities of institutions of higher education in ensuring equal access to education for all students.

According to a study (Ari and Inan, 2010), students with disabilities use assistive technology to perform tasks such as writing, conducting research, and accessing the Internet, either in everyday life or for educational purposes. They see computers as a significant asset in the overcoming of the difficulties they encounter.

Depending on the type and degree of disability, students may face difficulties with writing and typing efficiently because of limited hand mobility, difficulties in coping with visual tasks such as reading or writing because of vision impairments, or difficulties in understanding and expression because of speech and language impediments. In each of these situations, assistive technology may have a supportive role (Owens et al., 1999).

The same authors report the results of a study involving students with disabilities who use assistive technology, which suggest its positive impact in the following ways:

- Improving the academic achievement of students;
- Empowering students;
- Providing more control in the learning process and raising the levels of independence;
- Strengthening self-confidence;
- Raising the level of motivation.

The study also helped define certain obstacles to the use of assistive technology that students with disabilities have encountered:

- Lack of knowledge among students and administrative staff regarding the application of assistive technology;
- Costs and ways of funding assistive technology;
- Lack of support in the use of assistive technology;
- Poor communication between administrative staff and students;
- Lack of computer hardware and software;
- Lack of access to computers and the Internet.

Possible solutions to these obstacles include the following:

- Training of administrative and teaching staff on equal access to education for students with disabilities;
- Providing access to assistive technology and acquiring the necessary assistive technology;
- Better cooperation between students with disabilities, professionals, administrative and teaching staff;

- More efficient planning of lectures, such as flexibility in the methods of testing, the use of audio and visual materials, the availability of test materials in electronic formats, etc.

Whenever possible, it would be advisable to ensure the availability of assistive technology in different places at universities to all students who need it. When acquiring such equipment, the following guidelines should be followed, that is, questions that may help in the selection (Guidelines – Assistive Technology for Students with Disability, http://www.dpi.state.nd.usce/speced/guide/assist.pdf):

- What tasks do we want the student to perform that s/he is unable to perform without the assistive technology?
- What types of assistive devices may assist the student in performing the task and remaining in the least restrictive environment?
- For what purpose would assistive technology be used?
- Is the device suited to the student's educational needs and abilities?
- Is the suitability of the assistive technology device appropriate over time?[iv]

The following is an overview of assistive technologies commonly used by students with disabilities with regard to the type and degree of impairment or disability (Owens et al., 1999; Hopkins, 2004).

Students with visual impairments

There is a wide range of assistive technology available to students with visual impairments, including a variety of devices for orientation and mobility, telecommunications, devices for access to printed material and various types of portable computers and computer programs.

The assistive technology which students with visual impairments mostly use are the following: *Closed Circuit Television (CCTV)*, video magnifier, various programs to enlarge the screen content such as *Zoom text*, scanners for printed documents, programs for screen reading such as *Jaws*, which contains a voice unit to access the information on the screen,

audio books, various types of dictation machines or voice recorders, as well as special hardware components, such as the Braille line, which allows access to a text in electronic format by using tactile perception, i.e. by reading the Braille alphabet.

More detailed information on the available assistive technology for persons with visual impairments can be found on the following websites:

The Croatian Association of the Blind, http://www.savez-slijepih.hr/

The Association for the Advancement of Education of the Blind and Partially Sighted, http://www.uuosso.hr/

The blind and low vision product database on ABLEDATA, http://www.abledata.com/Site_2/blind_and_low_vision_gen.htm

Assistive Technology for People who are Blind or Visually Impaired on DisabilityResources.org, http://www.disabilityresources.org/AT-BLIND.html

The American Foundation for the Blind, AFB, http://www.afb.org/Section.asp?SectionID=4

Figure 1. Braille line (taken from http://www.savez-slijepih.hr)

Figure 2. Portable electronic magnifier (taken from http://www.savez-slijepih.hr)

Figure 3. Video magnifier or *Closed Circuit Television (CCTV)* (taken from http://www.savez-slijepih.hr)

Students with hearing impairments

Students with hearing impairments use different types of assistive technology such as sound amplification devices, e.g. hearing aids, cochlear implants or some other assistive listening devices. Especially useful are computer components and accommodations, such as visual keys that are used to transmit sound to the computer. Highly sophisticated devices for voice-recognition are also available today, such as the *iCommunicator,* through which people with hearing impairments have electronic access to information, in written form.

More detailed information on the available assistive technology for persons with hearing impairments can be found on the following websites:

ABLEDATA deaf and hard of hearing product page,
http://www.abledata.com/Site_2/deaf_HOH_gen.htm

CODI: Cornucopia of Disability Information – Hearing Impairments,
http://codi.buffalo.edu/hearing.htm

Figure 4. Hearing aid (taken from http://www.bontech.hr)

Figure 5. *iCommunicator* interface (taken from http://www.icommunicator.com/)

Students with motor disabilities

Students with motor disabilities use assistive technology to gain access to a computer and for communication purposes. The examples include scanning programs, speech-to-text programs, touchpads, touch screens, keyboard and mouse alternatives, etc.

More detailed information on the available assistive technology for persons with physical disabilities can be found on the following websites:

Special Needs Opportunity Windows (SNOW):
– Mouse alternatives, http://snow.utoronto.ca/technology/products/alternate-mouse.html

– Alternative keyboards, http://snow.utoronto.ca/technology/products/alternate-keyboards.html

– Speech recognition software, http://snow.utoronto.ca/technology/products/voice-recognition.html

Assistive Technology Training Online (ATTO): Overview of Switch & Scanning Systems, http://atto.buffalo.edu/registered/ATBasics/AdaptingComputers/SwitchInterface/index.php

Figure 6. Mouse alternative adapted for people with disabilities
(taken from http://www.abilityhub.com/mouse/)

Figure 7. Foot controlled computer mouse (taken from http://www.spd.org.sg/programmes/assistive/atc_alternativemouse.html)

Figure 8. Alternative keyboard adapted for one-handed typing (taken from http://www.spd.org.sg/programmes/assistive/atc_alternativekeyboards.html)

Students with specific learning disabilities

Students with specific learning disabilities find assistive technology to be particularly useful, e.g. various types of dictation machines and voice recorders used for recording lectures and assignments, as well as grammar and spell checkers and text-to-speech programs.

Useful information in the Croatian language on assistive technology for students with dyslexia can be found in the chapter entitled *Pomoćne tehnologije* [Assistive Technologies] of the book *Vodič za samostalno učenje studenata i učenika* [A Guide to Independent Learning for Students and Pupils], written within the framework of the Tempus project entitled Identification and Support in Higher Education for Dyslexic Students (iSHEDS). Together with other useful information for students, this guide can be found on the support website for dyslexic students on the following link: http://www.isheds.eu.

More information on the available assistive technology for persons with specific learning difficulties can be found on the following websites:

Learning Disabilities – Technology, http://www.ldonline.org/ld_indepth/technology/technology.html

Georgia Project for Assistive Technology, http://www.gatfl.org/ldguide/default.htm

SchwabLearning.org – manual for assistive technology, http://www.schwablearning.org/articles.asp?r=488&g=4

Figure 9. Reading Pen, a device adapted for people with dyslexia (taken from http://learningdisabilities.about.com/od/readingstrategies/gr/readingpen.htm)

Today, there are endless possibilities for using different types of ICT that enables persons with disabilities to participate more easily in all segments of life, including education. Many manufacturers have specialized in the production and sale of assistive technology devices, and the idea that standard technology should meet the basic principles of accessibility and that its design should be based on universal design principles is being increasingly promoted. An example of this is the increasing adaptability of standard tools to users with different needs. For example, the commonly used personal computer operating system Microsoft Windows includes the option to enlarge text content displayed on screen, which can be used by visually impaired persons as a good replacement for expensive commercial software. This is just one of the existing options. Detailed instructions on all options can be found on the manufacturers' websites for users.

Free software or freeware should not be neglected as a good option, as it is an acceptable and often high-quality alternative to the sometimes very expensive commercial programs. Vučić (2009) points out several advantages of free software. It is particularly suited to resolving accessibility issues as it can be adapted to different types of usage; it can be modified, and its interface can be translated into the language of the users; and it can be freely improved and distributed. Freeware is free of charge, which makes it easier to meet the provisions of the Convention on the Rights of Persons with Disabilities that require support for people with disabilities with minimal costs.

It can be concluded that there are many possibilities offered by assistive technology and also many adaptations to standard technologies, and it is up to the institutions of higher education to assess the needs of their students and to ensure the availability of such technology within their capabilities. In any case, it is important to conduct a needs assessment so as not to acquire expensive equipment that no one will use, while at the same time depriving students of what they really need.

In addition to the websites and literature cited in the text, more information can be found on the following websites:

- Alliance for Technology Access, http://www.ATAccess.org
- AbleData, searchable database of assistive technology products, http://www.abledata.com

- Ability Hub, guide to adaptive equipment and alternative methods available for accessing computers, http://www.abilityhub.com
- Family Centre on Technology and Disability, http://www.fctd.info
- Rehabilitation Engineering and Assistive Technology Society of North America – RESNA, http://www.resna.org
- The International Centre for Disability Resources on the Internet – ICDRI, http://www.icdri.org/
- Trace Research and Development Centre, http://trace.wisc.edu/
- University of Washington, www.washington.edu/doit
- Yahoo resources for people with disabilities, http://dir.yahoo.com/society_and_culture/disabilities

5. WHICH SERVICES ARE IMPORTANT TO STUDENTS AND HOW TO MAKE THEM ACCESSIBLE?

5.1. **Student administration offices**

The student administration office is probably the most important service to every student, without which it is impossible to imagine university life. It is always the first contact that most students have with the university, during registration or enrolment.
Although student administration offices are important to all students, sufficient attention has not always been paid to making them accessible to all students. When we say "accessible", we are not referring only to physical accessibility. All student administration offices have their usual ways of functioning and set procedures that are not always compatible with the abilities and specific needs of students with disabilities.
How these usual ways of functioning and sets of procedures are adapted to the specific needs of students with disabilities, and hence to their ability to use the services student administration offices have to offer, depends on the student administration office staff.

First of all, it is important to provide physical access to student administration offices, and remove all physical barriers that would impede access for wheelchair users. It would be

desirable that the student administration office should be located on the first floor for easier access, and if located upstairs it should be accessible by elevator.

Given that a large number of Croatian institutions of higher education have not resolved the issue of physical accessibility, sometimes it is not possible to achieve the ideal location of the student administration office. In such cases, the student administration office staff, with the cooperation of other services at a particular university constituent, should ensure access to the student administration office and its services for students with disabilities in such a way that they may conduct all affairs related to their studies in a single place they can easily access. (**More information on this subject can be found in the handbook entitled *Physical Accessibility.***)

The student administration office has to be appropriately marked. A label should be placed on the door containing the following information:

- The name of the student administration office (e.g. Student Administration Office for Undergraduate and Graduate Studies, Student Administration Office for Integrated Studies, Student Administration Office for Postgraduate Studies, etc.);
- The working hours of the student administration office;
- Office hours for students;
- Daily break schedules;
- The names of employees and their contact details.

Labels should be clearly visible and contain all relevant information. The information should be accurate and it should also be available in alternative formats (e.g. in Braille for students with visual impairments).

In addition, all this information should be posted on the website of the constituent unit, and it must be updated regularly in order to be accurate. For example, for students with mobility impairment the information about the opening hours of the student administration office will be very important, since they will have to arrange adequate transportation to the faculty or academy in advance. Needless to say, it would be very inconvenient for such a student to come at a time when the student administration office is closed and to have to come back another time.

Furthermore, signage pointing to the student administration office should be well-marked and large enough, especially during the period of enrollment and admissions, for easier orientation.

To facilitate admission procedures, the student administration office can create forms which systematically list all the documents one has to submit and all the data required for application and admission to individual study programs. Such lists could be done in the form of a check-list, which is very suitable for collecting all the necessary documents. Such a check-list can be equally useful to students or applicants and to the staff of the student administration office during the process of admission.

Such a list, which normally contains a large number of items, should be available throughout the academic year both in the student administration office and on the official websites of faculties/academies in order to allow the candidates enough time to put together the required documentation.

During the application and matriculation process, students are required to fill in a lot of forms such as application forms, registry forms, statistical records etc., depending on the study program they wish to apply for. Students who have difficulty filling out these forms (e.g. dyslexic students, students with visual impairments) should be offered assistance. If students require assistance, it should be determined in consultation with them what exactly they need help with, and what they can do by themselves.

Arranging peer support for the filling out of these forms is a good way of approaching students who have such difficulties. In this way, students who need support get it, and this also unburdens the staff of the student administration office, who are often very busy, especially during the admission process.

Student administration offices collect a wide range of personal information about students in the application and matriculation forms. The constituents which organize additional tests of knowledge, skills and abilities and provide individualized testing methods for applicants with specific needs should also create a form which would determine such needs. Personal data collected in this way are protected by the Act on Personal Data Protection (Official Gazette 103/03, 118/06, 41/08).

The form should contain the following questions:

Is there a need for accommodations in the admission exam? YES NO

Type of accommodation required:

1. Large print;
2. Sign language interpreter;
3. Extended duration of the exam (requires further explanation);
4. Oral examination;
5. Examination materials in Braille;
6. Other (specify).

The form should list all the documents that applicants must enclose in order to exercise this right. It should also state that all personal data collected in this way will be used solely for the purpose of determining eligibility for individualized examination, and that the data will be stored and protected as stipulated by law. Such a form should be created and used during the whole period of studies in order to determine potential needs for accommodation, not only for the purposes of admission exams.

Inside or in front of the student administration office, information points should be located, where different types of informational materials and forms could be placed in order to make information more accessible to students, or where people who can provide the necessary information would be stationed.

The most popular and most affordable types of informational materials are brochures, leaflets, posters and similar items. When preparing these, one must follow some basic rules, so that they serve their primary purpose as much as possible.

What follows is an example of such rules for well-designed informational materials:

- Use short and memorable titles;
- length of lines should not exceed 45-60 characters, including spaces, blanks and punctuation marks;
- Ensure visibility, which means using large enough letters, applying typographic and color contrasts, page layout (e.g. the title should be at a different level of visibility so that it does not merge with the rest of the text), and blank spaces, which are used to emphasize the important elements of the page;

- hierarchy of elements, in order of importance, should be the following: thematic units, headings, titles, subtitles, introduction and body text;
- The text should be left-aligned, so that notes can be written on the right-hand side;
- In the case of more extensive material, it is important to form paragraphs, so that the whole text does not consist of a single unit but is split into several logical and meaningful units;
- The following options should be used to emphasize certain parts of the text: bold, font size, font color, text boxes, etc. (Williams, 1998; Mesaroš, 1985).

Of course, all promotional materials produced in printed form should also be made available in a variety of other formats, such as electronic format, Braille, audio or video, to make them accessible to persons who are unable to use printed materials.

More detailed information on how to make accommodations to materials that are presented to students can be found in the handbook entitled *Teaching Processes and Learning Outcomes*.

Student administration offices are an important part of student life, and particular effort should be invested in making them, and the services they provide, equally accessible to all students. To meet the needs of all students, including the specific needs of students with disabilities, good communication is crucial, and raising the awareness of the personal responsibility of each employee and student requires constant efforts. The questions that we should constantly ask ourselves in order to accomplish this are the following: “How can I help?”, “What can I do?”

individual interviews play a crucial role. Aimed at ensuring the understanding of diversity and different possibilities, these interviews should enable the students to explain their needs, and the staff to assist them by working on the potential issues together. The interview should be friendly, honest, open and ethical, with clearly defined options that that are at the student’s disposal. The student should be listened to and heard (the staff should make an effort when listening and not interrupt). If it is easier and more convenient for the student, written communication can also be arranged in order to avoid possible misunderstandings. When conducting interviews with students, protected time and space

should be ensured for the staff to be able to talk to students in complete confidence, without answering the telephone or receiving other students. It should always be checked whether the student has completely understood what was discussed.
Teaching personal responsibility in such an atmosphere prevents the shifting of responsibility and makes reaching agreements faster and easier.

5.2. Libraries

According to the UNESCO, the library is a vital force in education, culture and dissemination of information as it enables its users to have immediate access to all kinds of knowledge and information. It is based on equal access for all, regardless of age, race, sex, religion, nationality, language or social status. Special services and collections must be provided for those users who, for whichever reason, are not able to use the regular services and collections, such as language minorities or people with disabilities (UNESCO, 1994).
Libraries are extremely important in higher education, especially those housed in the university constituents with the most convenient location and in which students can easily find the materials they need for successful studies. Apart from providing students with the materials they need to fulfill their academic obligations, libraries often have the role of informing students about various topics that are of interest, and they also have an educational role.
It is extremely important to make libraries accessible to students with disabilities so that they can fully utilize the services they have to offer. Contemporary libraries are increasingly aware of their roles, and they are investing additional efforts to make their services accessible to everyone, including specific groups of citizens, such as people with disabilities. The basic prerequisite which has to be met is, of course, the physical accessibility of the library. This means providing all users with access to the building and its interior (all the rooms), unimpeded movement, and unrestricted use of the facilities. An example of this is ensuring the proper height of shelves, information desks and reception desks in order to make them accessible to wheelchair users.

More information about the rules of physical accessibility of libraries can be found in the handbook entitled *Physical Accessibility.*

After access to a library has been ensured, it is necessary to provide access to its services for all users, including those who have specific needs, such as in this case, students with disabilities.

The tradition of providing library services to people with disabilities dates back to 1857, when a library in Liverpool introduced the practice of purchasing books for blind users. Some twenty years later, alternative embossed formats (including Braille) became available in libraries. After the Second World War, libraries introduced the service of delivering publications to the homes of persons with limited mobility (Deines-Jones, 2009). Today, through the interaction of traditional practices and contemporary technologies, libraries are increasingly trying to adapt to all their users.

Ideally, all libraries should be accessible to all users. This goal can be achieved in different ways, primarily, by offering library materials in alternative formats, such as:

- Audio books, magazines, newspapers;
- Large print books;
- Video books with subtitles and/or sign language interpretation;
- Braille books;
- Accessible e-books;
- Easy-to-read books;
- Tactile books (Irvall and Skat Nielsen, 2005).

The introduction of interlibrary exchange can be extremely helpful for ensuring library materials in alternative formats.

Computers for public use can also contribute to better accessibility of library services, and they should also be accessible for use to people with disabilities.

Ideally, libraries should also have technologies specifically adapted for persons with disabilities, such as:

- Specially designed workstations tailored for wheelchair users;
- Accessible keyboards and mice for people with motor skills disorders;
- Computers equipped with software for reading, zooming in on the screen and synthesizing speech.
- Computers equipped with spell-checkers and similar programs suitable for dyslexic persons.

This was discussed in more detail in previous chapters.

It is equally important to provide appropriate technical support for the maintenance of such equipment, and personnel trained to instruct students on how to use this technology (Irvall and Skat Nielsen, 2005).

Communication between the library staff and users with disabilities is extremely important. The communication must be good so that the users gain confidence in the library staff and come back again to use the services offered. It is important to note that it may feel uncomfortable for people with disabilities to express their needs and ask for help, and they have to overcome that "psychological barrier" as well. The reaction they get from the staff when they ask for assistance is therefore crucial. Training the staff so that they acquire a basic knowledge about different kinds of disabilities and how to best help users with disabilities is also very important. It is equally important to talk directly to the users about their needs.

As Irvall and Skat Nielsen (2005) point out, the accessibility of libraries must be identified as a responsibility of the university administration, and it is up to them to devise methods to train their employees. These methods include the following:

- Inviting persons with disabilities to staff meetings to talk about their needs from the perspective of library users;
- Regularly distributing to the employees the information about the services the library offers to certain groups of people with disabilities, either by *e-mail* or in other ways;
- Including information about the services the library offers to special groups in orientation packages for new employees.

Library staff should be available to users with disabilities to help them navigate through the library, but also to provide them with information on the library and its services. All promotional materials about the library and its services should also be made available in different formats so that everyone can access them. Usually the best and easiest source of information, official library websites must be accessible, which was also discussed in previous chapters.

Irvall and Skat Nielsen (2005) propose different formats for different library materials, as well as methods to provide users with information.

	Large print	Audio / Daisy / CD / DVD	Braille alphabet	Websites	Video with subtitles and / or interpreting into sign language	Text phone	Easy- to-read materials
Visual impairment	X	X	X	X			
Hearing impairment				X	X	X	X
Reading difficulties	X	X		X			X
Physical disability		X		X			

Table 1 Schematic representation of the appropriateness of using different document formats for users with different types of disabilities

Nowadays there are many available resources dealing with the ways in which libraries and library services can be made accessible to persons with disabilities and their specific needs. Detailed information on specific topics can be found in the resources that are listed below.

ources offer detailed information on library accommodations:

- IFLA Guidelines, http://www.ifla.org;
- Skat Nielsen, G., Irvall, B. (2001). Guidelines for Library Services to Persons with Dyslexia. IFLA Professional Report # 70th, http://www.ifla.org;
- Tronbacke, B. (1997). Guidelines for Easy-to-Read Materials. IFLA Professional Report # 54th, http://www.ifla.org;
- Panella, NM (2000). Guidelines for Libraries Serving Hospital Patients and the Elderly and Disabled in Long-Term Care FacilitiesIFLA Professional Report # 61st, http://www.ifla.org.

Some useful websites:

http://www.w3c.org/WAI/

http://www.w3c.hu/talks/2006/wai_de/mate/watchfire.html

http://www.rnib.org.uk/Pages/Home.aspx

http://europa.eu.int/information_society/policy/accessibility/web/index_en.htm

http://www.ri.gov/acc_checklist.php

http://www.lgta.org/accessibility/

http://www.daisy.org

http://www.netserv.net.au/doonbank/access-htm

http://www.washington.edu/accessit/index.php

A checklist proposed by Burgstahler can be used as a tool to check the state of accessibility (http://washington.edu/doit/Brochures/Academics/equal_access_lib.html). The check list is a series of useful questions that can assist in making libraries accessible to everyone. The questions refer to planning, policies and service evaluation, ensuring physical access to the library and inside the library, library staff, information resources and technology, events, additional resources and communication tips.

The following illustrative list contains a number of questions related to information resources and technology, and library staff:

- Are all staff members aware of issues related to communicating with patrons of different races and ethnicities, ages and abilities?
- Are staff trained in the use of the Telecommunications Relay Service, as well as assistive computer technology provided in the library?
- Are staff trained in policies and procedures for providing accommodations for users with disabilities?
- staff wear large-print name badges?
- If there are staff members with sign language skills, are they identified to other staff members so that, when available, they can assist patrons who are deaf?
- Can the library's electronic and information resources, including web pages, online catalogs, indexes and full-text databases and CD-ROMs, be accessed with a variety of adaptive computer technologies?

- Are librarians prepared to assist patrons with inaccessible electronic resources by providing consultations or materials in other formats?
- Are all printed library publications available (immediately or in a timely manner) in alternative formats such as Braille, large print, and electronic text?
- Do videos developed or used in the library have captions?
- Is an adjustable-height table available for each type of workstation to assist students who use a wheelchair or are small or large in stature?

5.3. Services aimed at students with disabilities

Ivana's story

Ivana is a 23-year-old student with a physical disability. She moves independently and without aid, but still with a lot of difficulty due to the nature of her disability. Before enrolling in the university she did not know that students with disabilities had special rights or how to exercise these rights. Therefore, she enrolled without using her right to preferential treatment during enrollment, which meant she had to pay for her studies. Likewise, she did not use her right to preferential treatment available for students with disabilities when she applied for housing in a student dormitory because she was not aware this right existed or that she could use it. Without the extra points she did not manage to get a room in a dorm. Given the bad financial situation of her family, she could not afford renting a private room or flat, so she spent the entire first year of her studies travelling from her hometown to Zagreb, which meant crossing a distance of about one hundred kilometers a day. Because of her health problems Ivana found this extremely strenuous and difficult, and at the same time it was a considerable financial burden to her family. After studying for some time at the university, Ivana discovered there was an Office for Students with Disabilities. She decided to turn to them for help. There she was informed about all the rights students with disabilities have and was instructed on how to exercise them. As she did not have the Disabled Person status, she was first sent to the competent office of the Croatian Pension Insurance Institute to get a document confirming her physical impairment rating. After it was established that Ivana had a 100% physical disability rating, the Office helped her exercise all the rights to which she was entitled as a student with a disability. This meant that she was exempt from paying her tuition fees, that she could exercise her right to housing in a student dormitory, to receive a scholarship for students with disabilities and reimbursement for transportation costs. She also became a member of a student association, which made it possible for her to use accessible transportation when necessary. All of the above made her time at the university much easier and relieved the financial burden on her family. She still visits the Office for Students with Disabilities from time to time, when she feels the need to consult on matters relevant to her studies, even when they do not involve special rights for students with disabilities. She always likes to emphasize that the services she received at the Office meant a lot to her as, before she came to the Office, she had known nothing about her rights, let alone how to exercise them.

In Croatia there is no single law or other legal document that would regulate the rights of students with disabilities. There is no single document stipulating uniform standards of accessibility or guidelines for ensuring equal opportunities in the higher education system throughout the country.

However, the rights of students with disabilities, both general and particular, as well as the responsibility of society to take the necessary steps towards achieving accessibility of higher education for all its citizens, including students with disabilities, are mentioned in a number of general and specific documents.

For example, the Constitution of the Republic of Croatia (Official Gazette 56/90, 135/97, 8/98, 113/99, 124/00 and 28/01), as the country's fundamental legal document, not only prohibits any form of discrimination on any basis, including on the basis of disability, but also in Article 65 guarantees to all of its citizens access to education at all levels under the same conditions.

The Research and Higher Education Act (Official Gazette 123/03, 198/03, 105/04, 174/04 and 46/07) as a primary document in the higher education system in Article 88 ensures to all students the right, among other student rights, to a high-quality educational process as envisaged in a particular study program. In effect, this means that higher education institutions are obliged to ensure high-quality studies for all of their students, including students with disabilities.

The Republic of Croatia has signed and ratified the UN Convention on the Rights of Persons with Disabilities. In the chapter on Education (Article 24), the signatory countries guarantee to persons with disabilities the right to education without discrimination and on the basis of equal opportunities. They are also committed to making reasonable accommodations to individual needs.

In addition, Article 16 of the Declaration on the Rights of Persons with Disabilities (Official Gazette 47/05) obliges the Republic of Croatia to adapt its education system to the needs of persons with disabilities in order to ensure adequate education.

Furthermore, the National Strategy to Create Equal Opportunities for Persons With Disabilities 2007-2015 (Official Gazette 63/07), in the chapter on Education (2.3), highlights high-quality education at all levels as one of the priorities, and emphasizes the necessity to create the preconditions of better access to high-quality education for young people with disabilities.

There is also the Anti-Discrimination Act (Official Gazette 85/08) mentioned in the Introduction.

All universities in the Republic of Croatia have introduced into their statutes the constitutional provisions that prohibit discrimination on any grounds, as well as the previously mentioned provision of the Research and Higher Education Act (Official Gazette 123/03, 198/03, 105/04, 174/04 and 46/07) on the right of all students to high-quality education.

It can be concluded that a legal basis for the accessibility of higher education for persons with disabilities and for ensuring equal opportunities in the higher education system in the Republic of Croatia does exist. What does not always follow the existing legislation that guarantees equal opportunities are the actual measures that would ensure the application, in everyday life, of the principle of equal opportunities as envisaged by the regulations.

The current state of affairs with regard to accessibility in higher education for persons with disabilities is far from ideal, but it is certainly an improvement compared to earlier periods. Most importantly, there is a growing awareness of the need to make accommodations in the academic environment to the specific needs of students with disabilities.

One of the generally accepted forms of institutional support for students with disabilities are specialized services. Today most European universities have specialized services or offices for students with disabilities. The role they play is significant not only in informing students about their rights and in helping them exercise these rights, but also in raising public awareness of the needs of students with disabilities, and in developing and coordinating actions for achieving equal opportunities at the level of the entire university (Universidad de Jaén, http://www.ujaen.es/serv/sae/discapacidad/).

There are many initiatives supporting the establishment of such services, an example of which is the Network of Universities from the Capitals of Europe (UNICA), whose member is also the University of Zagreb. In its efforts to ensure equal opportunities, the University has adopted recommendations for minimum accessibility standards for persons with disabilities at UNICA universities. These standards recommend, among other things, ensuring specialized services for persons with disabilities, or at least one person employed full time who would be responsible for the coordination of activities (UNICA, 2008).

Having recognized the need for systematic solutions and institutionalization of support for students with disabilities, Croatian universities have also started establishing such services. The University of Zagreb, the largest university in the Republic of Croatia, attended by nearly half of the total number of students in the country and by most students with disabilities registered in Croatia, was the first university to establish the Office for Students with Disabilities in 2007. The example of the University of Zagreb was followed by other universities in Croatia. The Josip Juraj Strossmayer University of Osijek has had its Office for Students with Disabilities since 2009. Such offices have been established at the University of Rijeka as well as at the University of Split. At the University of Zadar, issues concerning students with disabilities are dealt with by its Student Counseling Service, while the University of Dubrovnik has appointed a coordinator. Coordinators for students with disabilities have also been appointed at the universities of Zagreb and Rijeka, and they are responsible for support at the level of each university constituent. Furthermore, the University of Zagreb has a student representative in every constituent in the Coordination for Students with Disabilities. This ensures the creation of a support network as well as coordinated activities at the level of the entire university.

Some of the main tasks of these offices are the following:

- To provide professional help to students with disabilities regarding the study programs offered at research/teaching, as well as at research/artistic constituents of the university;
- To provide a systematic approach to meeting the educational and psychosocial needs of students with disabilities;

- To monitor the needs of students with disabilities so as to improve housing and study conditions;
- To organize all kinds of support for students with disabilities during their studies;
- To ensure adequate access to higher education to all students who, due to their illness or impairment (regardless of their disability status), have difficulties in performing everyday activities;
- To promote international cooperation and exchange of students with disabilities (University of Zagreb, 2007).

An office for students with disabilities should be a reference centre that provides information to students with disabilities in person, by telephone, by e-mail or by means of regularly updated brochures. The office should support students with disabilities in their adaptation to and full social integration in the academic community. The office should also support students in coping with the challenges of everyday student life and any potential difficulties in meeting their course requirements. The office should guarantee to their users the confidentiality of all information presented, and ensure access to all written and orally presented information (Kiš-Glavaš, Ruškan and Rudić, 2005).
Such services and offices have proved to be powerful mechanisms for equalizing opportunities for persons with disabilities, provided that optimal working conditions are ensured. They can also initiate activities on a broader level, that is, at the level of the university and beyond.

What is extremely important to point out and what everyone involved in the education process must acknowledge is that the existence of such services at the university or its constituents does not “release from liability” all other participants in the education process with regard to making the necessary accommodations to ensure equal opportunities for students with disabilities. It is not only specialized services but also all participants in the education process that are responsible for ensuring access to higher education on the principle of equal opportunities. The services are here to initiate, expedite and facilitate this process.

Services for students with disabilities have the task of supporting both students and staff in different ways, and it is their employees' personal responsibility to take certain actions in their everyday life and work.

Working directly with users by providing information, advising, supporting or representing them is not the only role these services play. Their role is much bigger and it encompasses, among other things, networking and cooperation with other Croatian and international institutions aimed at achieving greater efficiency, as well as proposing and launching various initiatives, policies and similar activities. In the context of this handbook, what is most important is their role in informing not only students and university staff but also prospective students and everyone in need of information about the rights of students with disabilities, an example of which is the introductory story about the student Ivana. To be given important information in a timely manner can play a crucial role for one's continuation of education or academic success for both prospective as well as current students, in this case concerning the information on special rights of students with disabilities.

Services for students with disabilities bring together all information that previously, when such services did not exist, students had to look for in different places because particular rights fall under the jurisdiction of various institutions that are not always interconnected or whose information is not always easily accessible. That is why students were sometimes deprived of their rights, not knowing they had them or how to exercise them.

The role of services for students with disabilities is extremely important in the everyday lives of these students and their teachers, as well as in a much wider context of the process of equalizing opportunities for persons with disabilities in higher education. Since the Republic of Croatia is obliged by legal documents and other, Croatian and international, regulations mentioned in this handbook to implement measures aimed at equalizing opportunities in all aspects of life, especially in the field of education, it is easy to see how significant this role is.

In order for these services to be efficient, it is very important to ensure optimal working conditions in terms of human and other resources. Just as important is the support and participation of all university employees whose level of activity and personal responsibility will determine the success of the initiatives and changes that are necessary to introduce in the higher education system.

More information on the offices for students with disabilities at Croatian universities mentioned in the text can be found on their websites:

- The University of Zagreb, http://www.unizg.hr/uredssi
- The Josip Juraj Strossmayer University of Osijek, http://www.unios.hr/?g=1&i=21
- The University of Rijeka, http://www.uredssi.uniri.hr/index.php/hr/
- The University of Split, http://www.unist.hr/Uredzastudentesinvaliditetom/tabid/1276/language/hr-HR/Default.aspx

For more information on similar services in some European universities visit the following websites:

- The University of Strathclyde, Glasgow (United Kingdom), http://www.strath.ac.uk/disabilityservice/
- Masaryk University, Brno (Czech Republic), http://www.muni.cz/spssn
- Aarhus University (Denmark), http://www.au.dk/fakulteterinstituttermv/adm/registra/test_admidab/welcomeis/rsc/
- The University of Gothenburg (Sweden), http://www.utbildning.gu.se/education/academic-life/student-services/students-with-disabilities
- The University of Jaén (Spain), http://www.ujaen.es/serv/sae/discapacidad/
- The University of Southampton (United Kingdom), http://www.southampton.ac.uk/edusupport/disability/index.html
- The University of Vienna (Austria), http://studieren.univie.ac.at/index.php?id=1150
- The University of Warsaw (Poland), http://www.bon.uw.edu.pl/en/univ4all/opd.html
- Most universities in the United States and Canada have similar services whose websites can be easily be found.

More information on this topic can be found in the handbook entitled *Mentoring and Tutoring*.

6. CONCLUSION

After everything that was said in the previous chapters, one can conclude that accessibility of information and services is a very important area in the life of every student, especially students with disabilities, who encounter various obstacles and are often deprived of what goes without saying or is accessible to most people, in both everyday life and in an educational environment.

It is hard to imagine how any person, in today's information society with a plethora of modern technologies, can successfully participate in any aspect of life without adequate access to relevant information and services offered. No student can be successful unless they can access the information relevant for their studies or unless basic services, such as libraries, student administration offices and the services they provide are accessible.

Even though this has not always been taken into account, there is a growing awareness of the additional efforts needed in planning and coordinating such activities so that everyone can participate on an equal footing. Many legal documents and initiatives mentioned in this handbook, which the Republic of Croatia has adopted or signed and thus committed itself to making all the necessary accommodations in order to ensure equal opportunities for persons with disabilities, refer precisely to this area, which also testifies to its importance.

Ensuring equal access to information and services has also been the aim of this handbook, providing at the same time all university employees who are aware of this need and who want to improve and adapt their work to ensure equal access to everyone, with some basic guidelines to that effect. The guidelines should provide inspiration with regard to which

topics to consider, which activities in terms of information and services should be planned, and how to do this in a way most acceptable for everyone. Furthermore, an attempt has been made to highlight the obstacles that students often encounter, in order to illustrate the most common mistakes that occur in practice.

Finally, it should be emphasized once more that personal responsibility is the key to ensuring equal opportunities for students with disabilities in higher education in general, and that every single employee and student has to do as much as possible within their abilities and responsibilities in order to actually ensure equal opportunities. Only through this kind of approach can all the standards to which the Republic of Croatia has committed itself be achieved in practice.

7. BIBLIOGRAPHY

Act on Personal Data Protection. Official Gazette 103/2003

Act on the Right of Access to Information. Official Gazette 173/2003

Anti-Discrimination Act. Official Gazette 85/2008

Ari, I. A., and Inan, F. A. (2010). Assistive Technologies for Students with Disabilities: A Survey of Access and Use in Turkish Universities. TOJET: The Turkish Online Journal of Educational Technology , 9 (2), 40-45

Burgstahler. Equal Access: Universal Design of Libraries. http://www.washington.edu/doit/Brochures/Academics/equal_access_lib.html

CILIP (2004). Chartered Institute of Library and Information Professional. http://www.cilip.org.uk

Constitution of the Republic of Croatia, Official Gazette 56/1990

Convention on the Rights of Persons with Disabilities http://www.posi.hr/download/Konvencija%20UN.PDF

Cooper, M. (2003). Communication and Information Technology (C&IT) for Disabled Students. In: Powell, S. (ed.). Special Teaching in Higher Education – Successful Strategies for Access and Inclusion. London: Kogan Page

Declaration on the Rights of Persons with Dsabilities, Official Gazette 47/2005

Deines-Jones, C. (2009) Improving Library Services to People with Disabilities. Belgrade: National Library of Serbia

European Union (2003a). Council Resolution on Equal Opportunities for Pupils and Students with Disabilities in Education and Training. Official Journal of the European Union, 2003, 2003/C, 134/04, 6-7

European Union (2003b). Council Resolution on eAccessibility – Improving Disabled People's Access to the Knowledge Based Society, Official Journal of the European Union, 2003, 5165/03

Government of the Republic of Croatia (2007). Agreement on Incentives for Admission to Higher Education Institutions, 27 March 2007 (http://vlada.hr/hr/naslovnica/priopcenja_za_javnost/2007/ozujak/)

Guidelines – Assistive Technology for Students with Disability. www.dpi.state.nd.us/speced/guide/assist.pdf

Hopkins, J. (2004). Assistive Technology (AT) to Support Students with Special Needs. www.curriculum.org/tcf/teachers/projects/.../AssistiveTechnology.pdf

Irvall, B. and Skat Nielsen, G. (2005). Access to Libraries for Persons with Disabilities – Checklist. The Hague: IFLA Headquarters

iSHEDS - Identification and Support in Higher Education for Dyslexic Students. http://www.isheds.eu

Kiš-Glavaš, L., Ruškan A. and Rudić, D. (2005). Ured za studente s invaliditetom – osiguranje mogućnosti kvalitetnijeg pristupa visokom obrazovanju [Office for Students with Disabilities – Ensuring Opportunities for Quality Access to Higher Education (Paper presented at a conference). Političko obrazovanje Vol.1, No. 4, 229-240, Zagreb

Littlejohn, A., and Higgison, C. (2003). LTNS Generic Centre, e-Learning series No. 3, Guide for Teachers, Learning and Teaching Support Network (LTSN), The Network Centre, 4 York: Innovation Close, www.ltsn.ac.uk/genericcentre

Mesaroš, F. (1985). Tipografski priručnik [Handbook on Typography]. Zagreb: Grafički obrazovni centar.

Muir, A. and Oppenheim, C. (2001). Report on Developments World-Wide on National Information Policy. Library Association, UK. http://www.la-hq.org.uk/directory/prof_issues/nip/menu.html

National Strategy to Create Equal Opportunities for Persons With Disabilities 2007-2015. Official Gazette 63/2007

Owens, J., Leung, P., Lamb, G., Smith, K., Shaw, J., and Hauff, R. (1999). Assistive Technology Issues for Students with Disabilities and University Staff who Work with them. Melbourne: HERDSA Annual International Conference

Pejova, Z., Catts, R., Ticha, L. and Dombrovska M. (ed.) (2006.) Achieving an Information Society and a Knowledge-Based Economy through Information Literacy – Proposal for an Information Literacy Platform and Action Plan for Central and South-East European Countries: Policy Recommendations and Practical Directions. Ljubljana: International Center for Promotion of Enterprises – ICPE

Pristupačnost [Accessibility]. http://www.pristupacnost.net

Research and Higher Education Act. Official Gazette 123/2003

Seale, J., Cooper, M. (2010). E-learning and Accessibility: An Exploration of the Potential Role of Generic Pedagogical Tools. Computers & Education Vol. 54, 1107-1116

Symington, L. (2004). Creating a Vision – Why Do I Need a Plan? (U) Mummery, A. (Ur.). Computer Resources for People with Disabilities. A Guide to Assistive Technologies, Tools and Resources for People of All Ages. 4th Edition. The Alliance for Technology Access. Alameda, Kanada: Hunter House Publishers

TechDis Staff Packs Accessible e-Learning for Teachers and Lecturers. http://www.jisctechdis.ac.uk/staffpacks

UNESCO (1994). UNESCO Manifesto for Public Libraries. Vjesnik bibliotekara Hrvatske 37 (3-4), Zagreb: HKD

UNESCO (2005). UNESCO World Report Toward Knowledge Societies. http://unesdoc.unesco.org/images/0014/001418/141843e.pdf

UNICA (2008). Minimum Standards for Disabled Persons for UNICA Universities http://www.unizg.hr/uredssi/images/datoteke/unica_minimalni_standardi.pdf

Universidad de Jaén. Funciones de la Oficina de Unidad de Atención al Estudiantes con Discapacidad, http://www.ujaen.es/serv/sae/discapacidad/

University of Gothenburg (2010). Rights and Responsibilities. Rules and Regulations for Studies at the University of Gothenburg

University of Washington. What is Assistive Technology? http://www.washington.edu/accessit/articles?109

University of Zagreb (2007). Ordinance Regulating the Organization and Activities of the Office for Students with Disabilities of the University of Zagreb

Vučić, V. (2009).). Inicijative za promicanje pristupačnosti elektroničkih informacija osobama s invaliditetom [Initiatives for the Promotion of Accessibility of Electronic Information for Persons with Disabilities]. Hrvatska revija za rehabilitacijska istraživanja, Vol. 45, No. 2, 105-112. Zagreb: Faculty of Education and Rehabilitation Sciences, University of Zagreb

Williams, R. (1998). Business Success by Design. The Non-Designers Guerilla Marketing Guide. Berkley, USA: PeachPit Press

World Wide Web Consortium - W3C, http://www.w3.org

WSIS (2003). Declaration of Principles Building the Information Society: A Global Challenge in the New Millennium. http://www.itu.int/wsis/docs/geneva/official/dop.html

8. GLOSSARY

E-accessibility refers to ensuring equal opportunities and access to e-content for everyone, including persons with disabilities (Seale and Cooper, 2010). There are three kinds of accessibility: situational, social-cultural and functional accessibility. It is important to meet the accessibility criteria with regard to all three kinds of accessibility so that everyone, including people with disabilities, can have full access that is not limited by the specificities of a particular disability (Vučić, 2009).

iCommunicator is a device for independent communication for people with hearing impairment that has several features and functions. It translates speech to text, speech/text to video sign language or speech/text to computer generated voice (http://www.icommunicator.com/).

Computer literacy: Knowing when and why you need information, where to find it and how to evaluate, use and communicate it in an ethical manner (CILIP, 2004). This knowledge includes the skills of finding, evaluating, storing, integrating and applying new and old knowledge with the aim of personal, social and economic development (Pejova et al., 2006).

Assistive technology: Technology that helps people with disabilities perform functions that would otherwise be difficult or even impossible. Assistive technology encompasses various devices, hardware and software, as well as different peripheral devices that assist people with disabilities in accessing computers or other information technologies (University of Washington, http://www.washington.edu/accessit/articles?109). It also encompasses any piece of equipment or product system used to increase, maintain, or improve functional capabilities of people with disabilities, whether it is a very common and simple device such as a wheelchair or a modern, complex and sophisticated device associated with the use of information and communications technologies (Symington, 2004).

Accessible technology: Technology that can be used by a wide range of people with different abilities, as well as those with different types of disability. Such technology incorporates the principles of universal design, which means that every user can use it in a way that is the best for them. It is either directly accessible and can be used without assistive technology or it is compatible with it. In other words, technology based on principles of universal design is that whose designer has taken into account various styles of learning and different needs of potential users during its production. Such technology is not only a tool for people with disabilities but also a tool that works better for everyone, including people with disabilities (Symington, 2004).

Free software or freeware: Terms referring to computer programs that can be downloaded for free. These programs can be customized to meet the users' needs, their interfaces can be translated into users' languages, and they can be improved and distributed without restrictions (Vučić, 2009).

[i] http://www.w3.org/TR/1999/WAI-WEBCONTENT-19990505/

[ii] Taken from http://www.washington.edu/accessit/articles?110

[iii] Taken from http://www.washington.edu/accessit/articles?109

[iv] Taken from http://www.dpi.state.nd.us/speced/guide/assist.pdf