INCLUSION OF DISABLED STUDENTS INTO HIGHER EDUCATION: THE CASE OF THE COMPUTER SCIENCE SCHOOL OF THE NATIONAL UNIVERSITY OF LA PLATA

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Abstract

Education democracy gains depth when knowledge distribution honors the diversity of the individuals involved, who have a right to receive their formation in the public sphere. Education is a human right non-transferrable by the State, which is responsible for guaranteeing its full application to all citizens.

The public university committed to this unavoidable right must deploy strategies and policies that generate the right conditions and encourage the construction of inclusive institutions where social individuals become integrated and involved and transform their world as they are transformed by it, beyond social, economic, physical and cultural conditions, among others. The process of constructing an inclusive university needs to identify cultural, pedagogical and institutional practices, both implicit and explicit, that will contribute in the construction of a more participative, inclusive and fair society.

This paper will focus on the Computer Science School of the UNLP which, with over fifteen new students presenting difficulties such as blindness, Pervasive Development Disorder (PDD), Asperger Syndrome, deafness and impaired hearing, among others, generated scenario that challenged and tested the Institution itself as a whole, causing it to react in the face of diversity with concrete actions that would favor inclusion. It will be described in detail the series of inclusion policies that have been applied at the Computer Science School since 2010, as well as present the difficulties, tensions and resistances encountered in this transformation process that place obstacles in the path towards the final establishment of a public and inclusive school as devised.

Keywords: Higher education, inclusion, disability, public policies

1 INTRODUCTION

In the last few years, in Latin America and in Argentina in particular there have been a series of economic, political and socio-cultural transformations that encompass all sectors of our society. It is a process of reconstruction and recuperation of public spaces that promotes educational inclusion, institution democratization, quality in training processes and acknowledging individuals as legal persons with their own knowledge, cultural practices and personal subjective constructions [1]. This project is manifested by means of public education policies and strategies that constitute education as a social and personal right, as a human right.

In the specific field of higher education the challenge is to regain the status of public and equal education, its link with social mobility processes and its capacity to drive collective imagination and social integration, strengthening the bridges to knowledge for all citizens beyond their physical, socio-economical and cultural conditions.

These new political and institutional configurations are set within a normative framework that shows the deep democratic and egalitarian transformations consolidating this new reformulation of the legitimacy of the higher education system. As expressed in the Statute of the National University of La Plata (UNLP), the Argentine Higher Education Act 24.521 and Act 25.573, the UNESCO World Conference of Higher Education final report and the Convention on the Rights of Persons with Disabilities, education is a fundamental right and a strategy to extend opportunities and reduce inequity among social groups, close gaps and encourage equality. The convention not only states that States Parties recognize the right of persons with disabilities to education (Article 24) but also emphasizes the need to guarantee their effective exercise [2]. So, a different scenario is configured in the university community, where the spirit of these norms and acts begins to be implemented in a series of state policies and inclusive strategies.

This paper attempts to show the institutional inclusion strategies employed by the Computer Science School of the UNLP during the last few years when over fifteen students with several complex mental

and physical disabilities enrolled in the courses offered. These strategies allow for their integration to university life through concrete actions that favor inclusion and equal opportunities to all students [3].

The processes of transformation of this university institution required acknowledging diversity and building bridges to the inclusion and integration of persons with disability, but also touched on multiple "new" issues that contribute to complexity. The dynamics and direction of changes both in pedagogical practices and in formative and cultural processes necessary for this integration are affected by tensions, resistance and differing approaches to academic scenarios.

Despite the complexity inherent to the process of an inclusive School, it is important to value reflections, institutional aspects and actions that show a changing and reacting School that echoes the new institutional transformation processes and contributes to a more open and fair University that addresses differences and includes diversity in social individuals.

2 HIGHER EDUCATION, A RIGHT FOR EVERYBODY

The National University of La Plata was founded in 1905 by Joaquín V Gonzalez. With over a century worth of trajectory, it is still a pioneer in advanced cultural, artistic and scientific studies and developments. This has placed it among the main universities in the country and the continent. Teaching, research and extension are the three basic pillars of this public and free university.

The UNLP has over 100 thousand students, 10 thousand teachers and over 40 thousand graduates. It is constituted by a university system comprising 17 faculties, 5 pre-university schools and 9 museums, with over 100 degree courses and over 100 postgraduate courses. All dependencies are scattered geographically in different sectors of the city [4].

This entity offers multiple scholarships for single mothers, for students with disabilities, for students with low incomes, and transport scholarships, as well as services such as healthcare, housing and canteens. As well as undergraduate and graduate programs, the university offers short courses that do not require a high school diploma and are open to all members of the community.

Since its foundation, the UNLP has defended public and free education, equal opportunities and student integration and identity, promoting superior quality education that transforms and improves the quality of life of the individual, their context and the community as a whole.

The preamble of the UNLP Statute itself expresses that “the UNLP as a public, free higher education institution is offered openly and inclusively to all of society and establishes as its main goals favoring access to its classes to the entire Argentine population and making every corner of the Country aware of the fruits of its labor. Likewise, to ensure its goals, policies will be established to facilitate enrollment, permanence and graduation of persons in the most vulnerable sectors of our society " [5].

Article 109º refers the university’s commitment to design and execute policies for University Welfare and Student Affairs with the goal to constantly improve the quality of life of the university community, while guaranteeing effective equal opportunities in access to higher education. In particular and without excluding others that may arise logically from the general goals previously mentioned, specific objectives of these policies will be to make opportunities equal for people with disabilities (teachers, students, administrative staff, and graduates) in higher education.

The following sections will mention other national and international legal frameworks supporting the inclusion of persons with disabilities in the context of higher education. As indicated by the Integral Program for Accessibility in Public Universities of Argentina (Programa Integral de Accesibilidad en las Universidades Públicas de la Argentina), devised during the Extraordinary Meeting of the Interuniversity Comission: Disabilities and Human Rights which took place in September 2011 at the National University of Tucuman, where a university for everybody without distiction was promoted, considering education as a right and a social public asset for every citizen [6].

2.1 Convention on the Rights of Persons with Disabilities and its Enforcing Protocol

In 2008, Argentina supported both the Convention on the Rights of Persons with Disabilities and the Enforcing Protocol through Act 26378.

The Convention on the Rights of Persons with Disabilities states that both the Universal Declaration of Human Right and the International Covenants on Human Rights have proclaimed these rights for all

persons; emphasizing however the need for guarantees for their exercise. The Convention was ellaborated with the participation of 70% persons with disabilities. Argentina incorporates the treaty with Act 26378 with supralegal status, and it comes into force on May 3, 2008, after being approved by 20 countries. The purpose of this act is to “promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities, and to promote respect for their inherent dignity” [7].

Regarding the concept of disability, the States Parties to this Convention recognize that “disability is an evolving concept and that disability results from the interaction between persons with impairments and attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others”.

In Article 9 on Accessibility, the Convention establishes that States Parties will adopt appropriate measures to enable persons with disabilities to live independently and participate fully in all aspects of life, 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.

In Article 24 on Education, the Convention establishes that States Parties recognize the right of persons with disabilities to general tertiary education, vocational training, adult education and lifelong learning without discrimination and on an equal basis with others.

2.2 World Conference on Higher Education

In order to guarantee the exercise of the rights of persons with disabilities, it is necessary to design policies that enable their insertion, training and full involvement in university life in conditions of high quality and equality [2].

The UNESCO, in its Final Declaration for the 2009 World Conference of Higher Education, establishes that “Member States, working in collaboration with all stakeholders, should develop policies and strategies at system and institutional levels to guarantee equal access to underrepresented groups such as workers, the poor, minorities, the differently abled, migrants, refugees and other vulnerable populations".

2.3 National Education Act 26.206/06

The new Argentine National Education Act No 26.206/06 establishes in Article 11 of Chapter 2 on Goals of the National Educational Policy the duty of the State to ensure quality education with equal opportunities and possibilities, without regional disbalance or social inequities, while guaranteeing educational inclusion through universal policies and pedagogical and resource allocation strategies that prioritize the least favored sectors of society. In a different point, the Act emphasizes the necessity to ensure equality, while respecting differences among persons without allowing for discrimination of gender or of any other type [8]. It also guarantees equal opportunities for access, permanence and graduation in all levels of the educational system, ensuring free state management services for all levels and modalities.

2.4 Higher Education Act 25.573

The Higher Education Act 24.521 and its Amendment 25.573, specific to persons with disabilities, establishes that the State must guarantee accessibility to physical means, interpreting services and other technical support necessary and sufficient for persons with disabilities [9].

More precisely, article 13 indicates that students in state higher education institutions have a right to enter the system without discrimination of any kind, to obtain scholarships, credits and other forms of social and economic support that guarantee equal opportunities and possibilities, particularly for access and permanence in undergraduate programs, and especially persons with disabilities have a right to interpreting services and technical support that are necessary and sufficient.

3 STUDENTS WITH DISABILITIES AT THE COMPUTER SCIENCE SCHOOL

The Computer Science School, created in 1999, is one of the newest academic units of the UNLP and welcomes an average of 700 new students a year. It offers four undergraduate programs: three-year

University Programming Analyst, three five-year courses: Computer Engineering, B.S. in Computer Science and B.S. in Computing, and numerous specialization, M.S. and PhD programs.

The undergraduate programs include a mandatory leveling introductory course that is given during the summer in 6-hour daily classes and a first year where most of the mandatory courses are the same for all programs. There is a Mathematics area with Mathematics I during the first semester and Mathematics II in the second, a Programming area with the Algorithms, Data and Programs course, and an Engineering area with Computer Organization in the first semester and Computer Architecture during the second one. When students first face these three distinct areas they generate great impact, not only due to the complexity of each disciplinary area but also because the professors come from other Schools, such as from the Exact Sciences School in the case of Mathematics, and from the Engineering School in the case of the Engineering courses. This makes every course a distinct learning experience, with its own rules and regulations.

Regarding the students, the last few years have seen an increase in the enrollment of students with a disability. Table 1 shows the amount of students found in the school by the type of disability they have.

Table 1: Amount of students by type of disability

	Type of disability	Amount of students at the Computer Science School
Visual impairments	Blindness	1
	Severe visual impairments (albinism)	2
Hearing impairments and speech impediments	Hearing Impairments	2
	Deafness	5
	Speech Impediments	1
Cognitive or intellectual problems	Asperger Syndrome	1
	Other Pervasive Developmental Disorders	3
Motor disabilities	Lower Extremities	1

Each student with a disability is a special subject with particular characteristics and needs beyond the limitations inherent to their disability. For example, Maximiliano, blind from birth, is a shy student who has trouble participating in class. In the mathematics courses, where the teacher writes entire proofs, equations or graphs for different functions on the board, he has difficulties following the class. Braille notes are not required, he only listens or records. However, these are 3-hour lessons with a heavy visual component; therefore he has issues understanding the recordings.

Fausto, a student with PDD capable of putting together a computer in 40 minutes, rejects the traditional scheme of master classes. In the mathematics courses he refuses to take notes and he dislikes the Algorithms, Data and Programs (ADP) course where problem solution is done on paper.

Regarding students with deafness, they encounter frequent difficulties with terminology in Mathematics, ADP and Computer Organization, as there are no signs in the Argentine Sign Language (LSA) for all the technical scientific terms used in these disciplines, nor is there a direct translation of this language into Spanish. Most of them report problems understanding the passive voice, therefore in a statement such as “Dados dos polígonos A y B...” (“Given two polygons A and B...”), “dados” is automatically interpreted to mean “dice” instead of a passive form of the verb “dar”, to give.

These cases and others require very close attention to the special characteristics of each individual, which is difficult to achieve given the massive amounts of students.

4 ACTIONS FOR THE INCLUSION OF STUDENTS WITH DISABILITIES

Particular attention for students with disabilities in a university context and inclusion of diversity in this environment challenges and puts a strain on daily academic and pedagogical tasks. On the one hand, it encourages seeking paths that acknowledge the differences in individuals, and on the other, it questions those involved in the School as well as its social function.

For four years, several strategies have been developmed to promote educational inclusion, institution democratization, training process quality improvement, progressive attention to recovering teaching

conditions and training, and more recognition for children and teenagers as legal persons, with their own knowledge and cultural practices and their particular way of constructing subjectivity.

The following sections describe actions taken in the process of integration and inclusion of students with disabilities at the Computer Science School, putting into practice discourse and the policies that hold a democratizing view of Higher Education as a personal and social right.

4.1 Institutional Approach to Disability

One of the first measures used for the inclusion and integration process was the creation of an institutional space to address matters related to Disability within the School. For this purpose, May 2010 saw the creation of the Direction of Accessibility within the Secretary of Extension of the Computer Science School. With this initiative, the School was one of the first within the National University of La Plata and at a national level in institutionalizing the topic of Disability and working towards an Inclusive School.

This Direction of Accessibility has a double goal: on the one hand and towards the interior of the School, working in lines of action that allow for containing, tracking and including students with disabilities; and toward the community, disseminating and training on Web Accessibility, its development, laws and international standards.

The process of inclusion and integration was formalized through a specific institutional area with the Direction for Student Guidance, generating and articulating specific actions for this purpose.

4.2 Circuit for Student Containment and Tracking

From the moment in which the student with a disability is enrolled in one of the programs offered by the School, there are interviews with the student and other people necessary for these encounters such as family members, therapists, interpreters or doctors. This initial approach allows for the staff to become familiar with the student and understanding their disability and context, detect their needs and locate human, technological and material resources to address them.

Meetings are organized with the teaching and non-teaching staff to comment on the characteristics of the disability presented by each student in order for everybody to be aware of the potential situations and to take the actions needed to achieve the inclusion of the student in the different environments.

Communication is maintained through the academic year, monthly meetings are organized with the students with disabilities in order to keep tracking the issues that may arise and intervene in time.

This is a process of permanent adaptation and evaluation on the impact of the solving strategies that are applied on the problems found with disabled students. Inclusion and integration are mutual learning experiences, and permanent two-way adaptation processes: they are new students adapting to the community, the jargon and the idiosincracy of the University, and the institution must work to adapt to their needs and the conditions required by their disability, enabling and guaranteeing an adequate and autonomous training process.

4.3 Specific Disability Tutors

The PACENI program, sponsored by the Secretary of University Policies of the National Ministry of Education took place between 2009 and 2011. Its main goal was to “promote National Universities strengthening institutional and pedagogical conditions to improve the academic experience of students of the first year of Natural and Exact Sciences, Economy and Computer Science programs”. This program featured the development of a tutoring system and teacher training experiences as well as activities, equipment, software and bibliography for practical use [10].

The PACENI program was implemented at the Computer Science School in 2010 and was financed with School funds as of 2012 in order to continue the experience. Once installed in the School, its main characteristics were the dynamics of update and adjustment to specific needs and demands of the students. The program consists of early detection of issues among students, class observation, tracking, orientation and containment during the first stages of the training process in the first and second year of the Computer Science courses. All this information is gathered and sent to the teaching staff for processing.

As of mid 2012, specific tutors started addressing students with disabilities. Out of 40 general tutors, 18 were allocated to the first year, 16 to the second year and 7 to accessibility for over 10 Computer

Science students with disabilities. The work of the last group was adapted to these situations where reports, observations and containment and tracking were more specific to each individual student.

Accessibility tutoring began to be personalized, and the intervention of tutors became more academic, as traditional classes were not enough for students with disabilities to assimilate all the concepts – more time was needed to understand the jargon and the reasoning and logical structures needed to face the solution of problems, be they mathematical, engineering or programming problems.

Due to this situation and without enough teaching staff to address each situation, tutors were prepared and guided to fulfill an academic tutor role in their field and aimed at a specific disability. Thus, the tutoring program provided specialized academic support that brought disabled students closer to concepts and contents at the right pace and in the correct manner for them to acquire them fully.

4.4 Adapting the Material

Besides offering disabled students academic support, the team of tutors for accessibility, also worked on the production of audiovisual support didactic material and the adaptation of study materials.

For example, for the case of Maximiliano, the ADP tutors made didactic material in EVA and tracing paper for embossing effects, and recorded accessible videos as audios, text and images with explanations on specific topics and how to solve problems including tactics, reasoning processes, solution alternatives and other such tools. Tutors helped Maximiliano use the Visual Da Vinci programming language used as an educational resource to introduce students to programming as there were accessibility problems and the screen reader could not gain access to all its features [11]. The same problem arose with the simulators used as educational material in the Engineering courses.

Regarding the Mathematics courses, the staff provides the students a digital book with all the topics treated in the subject, but graphics and formulas are skipped by the screen reader, therefore the teachers and tutors had to add verbal interventions that explained in voice and text all the graphics and formulas illustrating fundamental concepts.

In the case of PDD students, who have a pressing need to be in permanent contact with their cellular phone, tablet and computer, tutors had to find audiovisual material and educational games to help them understand complex concepts treated in class. These students were also aided in social integration matters in order to incorporate them to extracurricular activities such as extension work, PC repair courses, and robot programming, among others.

In the case of deaf students, the tutors collaborated with the interpreters to define certain concepts that lack direct signs in the Argentine Sign Language [12]. Another task for the tutors was HTML pages with mathematics topics that allowed students to relate contents with hyperlinks to definitions, theorems, formulas, solutions and other related contents useful for understanding the topics involved.

4.5 Physical Space Adaptations

The Computer Science School building opened in 2007, before which facilities were shared with the Exact Sciences School. The building has ramps, elevators and restrooms fit for disabled persons.

Before the first visually impaired student arrived, Braille signs were placed throughout the School including the stairs. As the student used the bus service and the nearest stop was around six blocks away from the School, the Municipalty of La Plata was required to modify or add a stop at the School.

Visually impaired members of the Braille Library of the city took a tour around the canteen, library, classrooms and administrative offices and tested the signalling systems of the School, providing feedback on pending needs. The process was repeated with people on wheelchairs to guarantee no issues moving throughout the facilities.

4.6 Dissemination, Training and Awareness on Disability

In a transformation process such as the one the Computer Science School is undergoing, no inclusion action or strategy can be effective if change is not accepted and the disability is not understood by the stakeholders involved in the university community. Autorities, teachers, assistants, classmates, and administrative staff: all must agree that a disabled person has the same rights to access Higher Education as every other student, and it is the duty of the institution to adapt and provide all the necessary resources to guarantee equal opportunities. One of the strategic lines of this inclusion process must be awareness.

Upon enrollment, disabilities and limitations requiring special resources from the institution are recorded. Information on the programs and administrative matters are available in paper, in braille, in digital format and with subtitled videos including sign language interpreters.

The introductory course to the Computer Science programs, where basic Mathematics, Computer Organization and Programming contents are presented, began featuring classes on university life that included topics such as disability, human rights and inclusion and integration processes.

The teaching staff is encouraged to touch on the topics of disabilities, web accessibility and hardware and software that aid disabilities whenever possible, either in practical application classes or as special student projects. Incentive is given to participate in university extension projects, and perform research for Masters' theses and undergraduate final papers on social topics such as accessibility.

Dissemination sessions and scientific events at the School always include a stand or conference on the topic of disability. As of 2011, the School has been organizing specific sessions on Inclusion, Acts and Norms on Disability and Web Accessibility, such as "Por una Facultad Inclusiva", and "Maratón de 24 hs por la Discapacidad" where participants stay at the School for an entire day to generate ideas and projects that improve the quality of life of persons with disabilities.

Training courses on disabilities and web accessibility have taken place as well, such as the 2011 Distance Course on Web Accessibility, aimed at the entire community and free of charge. Due to great demand and a long waiting list, the course was repeated multiple times and this year, in its sixth edition, it was offered to over 400 people from Argentina and abroad [13].

5 ISSUES DETECTED IN THE INTEGRATION AND INCLUSION PROCESS

Once university transformation processes are implemented they show signs of improvement, but also reflect "new" issues that reveal a complex fabric where resistance to change, both in pedagogical practices and in the reactions of the stakeholders is made evident. The individuals that integrate the academic space and their unique perspectives straddle multiple training scenarios and produce tension between them in showing their diversity. In order to address these changes and the ways in which the process of construction of an inclusive university is presented, it needs to identify cultural, pedagogical and institutional practices, both implicit and explicit, that contribute to the construction of educational organizations commited to a more inclusive, participative and fair society.

As Gentili states: "… the need to aid democratic trasformation processes currently happening in many Latin American countries adds to the political agenda the public debate around the social function of our universities, contrasting educational models with radically opposing goals and where the dispute about the nature of the right to education becomes more complex and, at times, vague" [14].

The following sections analyze inconvenients and issues detected during the inclusion process, which somehow dull these initiatives, and require revision and reacommodation of the strategies developed.

5.1 Lack of Collaboration with Communication Problems

Argentine Sign Language employs a more basic set of words than Spanish, i.e., there are Spanish words that do not have an ASL equivalent. Thus, it is necessary to collaborate with the interpreters regarding technical terminology specific to each discipline, contributing time and staff for support and academic advice [12]. ASL grammar is different from Spanish grammar – verbs are used in their infinitive forms there are no articles, no pronouns or prepositions, and interpretation and comprehension takes longer.

Deaf, autistic and PDD students who have communication and interpretation problems require a process of revision both of practical tasks as well as evaluations, with the aid of interpreters, therapists, students and teachers [15]. For these reasons, the teaching staff was recommended to revise the type of questions used, adapting them to simpler terms without affecting the level of the tasks; adding extra time for evaluations, whenever necessary, or break evaluations into segments based on the communicational limitations of the student.

Most of these requests were unsuccessful. Some of the answers registered follow:

_ "*Giving these students more time during exams is unfair to their peers!*". As stated by a first-year Engineering course teacher.

_ “*The test has to be written on paper. I cannot allow you to use the computer*”. As answered to an autistic student by a first-year Programming teacher.

_ “*What will the other students think? They will complain if the student sits with his therapist. What if she gives him an answer?*”. As expressed by another Programming teacher when the PDD student refused to sit for an exam without his therapist.

5.2 Problems Accepting and InternalizingDisability

Owing to the multiple activities hosted, in these last four years, the topic of disability was addressed and integration was experienced by means of mutual adaptation and coexistence with disabled students. Disability was understood and educational space sharing was accepted.

However, integration and inclusion are sometimes not settled or secured because the issue of disability is not internalized. It seems all stakeholders agree to resolutions and strategies and nobody questions the theoretical treatment of the topic, but the practice within the classroom and in everyday life is porous and resistant to change.

Solutions arise after multiple attempts, meetings and efforts by the authorities and the students. They depend on the good will of the professors that intervene. For example, our visually impaired student was allowed to sit for gradual exams in ADP during his second attempt at the course and after a teacher saw how much effort the student was investing in understanding the assignments with a screen reader. The programming tasks were too long and took the student many pages and many hours to solve, with added costs when going back to the original task to check it, due to the nature of the screen reader’s sequential reading.

Despite good practices and a regulated inclusion process, the internalization of disability at the level of the course and teaching practices is still at an early stage. These are massive courses divided into subclasses, with different staff each year, and with their own modalities and autonomy regarding how the course is given by the teachers and passed by the students.

In this sense, all the School has is the sum of its wills and the disparities in actions between one course and the other. Isolated solutions are achieved for particular situations and on-demand, depending on the participants. Unfortunately, issues arising from disability are being addressed separately and with sporadic and termporary measures.

5.3 Lack of Adaptation of Teaching Process

Disabled students have long reported troubles with the way classes are taught, citing their lenghth, their speed and the information density involved. They have problems keeping up with them and once they reach full comprehension of a topic they are already deep in a different one.

Students report physical and mental exhaustion, inability to pay attention for extended periods of time and taking too long to understand each topic within a single class to pay attention to the connection between one class and the next.

Moreover, Computer Science School classes have a pedagogical didactic structure supported in traditional teaching schemes, with theoretical master classes and mandatory practical application classes where students are minimally involved and at the receiving end. In spite of training being strongly linked to the field of new technologies, they are not used in the pedagogical field or as teaching strategies, which would be a great advantage to disabled students.

The academic work of the tutors with the use of multiple didactic strategies and technological resources helped greatly in content acquisition by disabled students, as they began to pass very difficult evaluations and improve their performance noticeably. However, this personalized attention also threatened integration, as disabled students preferred to meet their tutors alone rather than attend traditional classes with their peers.

5.4 Lack of Accessibility of Computing Resources

The Argentine National Act 26653 on Web Page Content accessibility was passed in November 2010 by the Argentine Senate and regulated in April 2013. This Act stipulates that the National State, as well as State and private companies should respect in the design of their web sites the accessibility norms and requirements that enable content access to all persons with disabilities, with the goal of guaranteeing real equal opportunities and avoid discrimination [16].

Because the Computer Science School and other such UNLP dependencies are national institutions and therefore governed by this act, they have altered their official websites to achieve content accessibility, as has the SIU Guaraní system where university students manage their courses and administrative matters.

There are, however, many products used at the School both in the communication and in the teaching process that are still not accessible. Such is the case of the Visual Da Vinci programming language, and the simulators used in Computer Organization and Computer Architecture.

The School's electronic voting system became accessible in October 2014. Previously, visually impaired students voted with the help of another student, which took away their privacy and autonomy.

Another accessibility problem detected and still pending solution are blogs for the Mathematics courses that communicate important course information, the virtual Web UNLP platform used by the Programming and Engineering courses as a repository for theoretical and practical material, the PDF format of the tasks in the practical applications classes and access to the library that manages a catalog system depending on the University.

5.5 Complexity in Different Training Paces for Each Disabled Student

Each disabled student has their own particular characteristics, background and experiences making problem solution case-specific, even among students with the same disability. Type of disability, the attention and stimulation they have received, their previous academic record and their family context, are all factors contributing to specific situations that affect the content acquisition process.

In the case of deaf students, for example, everybody agrees in the need for interpreters but each one has entirely different neads. Some have reading an writing difficulties, whereas others can read lips and can therefore communicate and understand explanations better [12].

Hearing impairments affect the development of a set of skills and habits related to the acquisition and conservation of language. Therefore, deaf individuals acquire very unique communication skills [12].

Blind students graduated high school but were not required to pass English or French courses during their high school training. However, all Computer Science programs include a mandatory Technical English course, which they must face with no previous understanding of the topic.

In the case of autistic students, who graduated high school, many received adapted disciplinary contents, i.e. the Mathematical content of their courses was simplified and focused on different goals.

One of the most important points is that these students live in an environment of high expectations -- those of family members wishing to equal their performance to that of other students, those of other disabled people taking them as an example, and those of civil associations that keep in touch with them. Even the inclusion process implemented by the School can put pressure on these students.

- "*I don't want to sit for the final yet. You help us so much with tutors and special classes that I can't fail you!*". As stated by Maximiliano, blind student.

These students must be paid special attention, accompanied and given complementary academic assistance that must be fine-tuned and evaluated in order to offer training that matches that of the rest of the students.

6 CONCLUSIONS

Taking disabled students to Higher Education is a great challenge that mobilizes all stakeholders. The effect on the student is of great satisfaction – belonging in the University community leads to potential improvements of their quality of life and personal growth affecting themselves and their surroundings. It represents a battle won to their disability, a way to overcome their fears, denials and difficulties and limitations inherent to their situation. They lead the way for other students with similar problems.

On the other hand, the Institution is reconfigured and adapted. While academic excellence is more associated with difficulty in access to knowledge, sorting obstacles in order to reach it such as excessive class hours, lack of pedagogical strategies fit for the complexity of the contents, massive master classes, and numerous assignments in short deadlines than to knowledge in all the diverse forms the individual needs to perceive and understand it.

In this sense, this paper takes a tour through the experience of the Computer Science School of the National University of La Plata, which attempts to implement strategic inclusion and integration lines for students with disabilities in Higher Education, taking into account all the positive aspects as well as the negative sides involved.

Support, resources and adaptations by the School favored academic and personal growth in disabled students, who were confident they were not alone facing their limitations, accompanied instead by the Institution that contains them even in fighting resistance and tensions that they may encounter in the educational environment itself.

The social function of the University is resignified and transformed from the ethic responsibility entailed in generating inclusion and permanence strategies for students with diverse backgrounds and educational experiences within a framework of justice and equality.

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