Good practices and Cases of Success in the establishment and Accreditation of Accessibility and Quality Virtual Education

Application Experiences of the ESVI-AL Model and Accreditation Guide

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Good practices and Cases of Success in the establishment and Accreditation of Accessibility and Quality in Virtual Education.

Application Experiences the ESVI-AL Model and Accreditation Guide

Roberto Argueta Quan
(Editor)

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Prologue

The growth experienced in virtual education, in its formal versions inside the higher level educational institutions, as well as in its informal versions in the learning in companies, or by the educational contents that many teachers share on the internet, has been accompanied by the proliferation of tools for the administration of virtual courses and for the production of educational materials in diverse media as texts, videos, audio and animation. This phenomenon permits all the persons interested in an education to be able to obtain all the materials and the follow-up to their learning without the limitations of having to be physically present in the place where they study and of the temporary coincidence of tutor and student.

The digital educative platforms and the new virtual spaces, nowadays exist in many higher education institutions in Ibero-America. Nonetheless, as the physical limitations that may be in the campus, the platforms and the virtual curriculum development have limitations for people with disability. In general, this obstacle is presented to any person who has a temporary or permanent limitation, physical or sensory, depending of the way in which he uses the virtual platforms.

Additionally, the cultural transformations that are being produced by the irruption of information and communications technologies, conform the so-called Digital Society or Knowledge Society, whose change speed presents a challenge for the higher education institutions of researching their characteristics to adapt to the needs that come up in this new society.

In the framework of that social transformation and with the end of analyzing, understanding its nature in a better way and increasing the level of conscience of the population in general and of the scholars in the Universities in Latin America, about the characteristics of virtual education and about aspects in its accessibility for vulnerable populations, by reasons of physical or sensory disabilities, a consortium of 7 Latin American Universities, 3 European Universities, and with the participation of 3 International Organisms that dedicate to Persons with Disability, presented a project titled "Virtual Inclusive Higher Education -- Latin America" (ESVI-AL), by consideration of the ALFA program of the European Union, who approved it and supported it financially.

The consortium for the development of the ESVI-AL Project was integrated by the following institutions:

- Universidad de Alcalá (Spain, Administrative Coordination)
- Universidade de Lisboa (Portugal)
- Helsinki Metropolia University of Applied Sciences (Finland)
- Universidad Galileo (Guatemala, Technical coordination)
- Universidad Politécnica de El Salvador (UPES), El Salvador
- Fundación Universitaria Católica del Norte (UCN), Colombia
- Universidad de Loja (Ecuador)
- Universidad Continental de Ciencias e Ingeniería (UCCI), Peru

- Universidad Nacional de Asunción (UNA), Paraguay
- Universidad de la República (Uruguay)
- Disabled People's International
- International Social Security Association (ISSA)
- Virtual Educa (VE)

ESVI-AL Project was developed from the years 2012 to 2014 and it focused its activities towards the achievement of the following objectives:

General Objective

- Improvement in Accessibility in Virtual Higher Education in Latin America.

Specific Objectives:

- To help the Higher Education Institutions (HEI) in Latin America (LA) in the definition of systematic and duplicable methodological processes for the design and establishment of virtual accessible curriculum development
- To create or update virtual programs adapted to accessibility standards oriented to the improvement in employability of the population with physical disabilities in Latin America
- To improve the quality and accessibility in the virtual education in Latin America, through the establishment of an accessibility accreditation model in virtual education.
- To support the Higher Education Institutions in Latin America to progress in the creation of a virtual inclusive higher education space.
- To establish a cooperation network between Higher Education Institutions, organizations of persons with disability and other institutions and companies from Latin America and the European Union (EU), related with virtual accessible education and disability, to promote investigation on accessibility and in that way, improve the inclusion of persons with disability in higher education and it other ambits of society.

All the institutions that participated in the development of the activities of the ESVI-AL Project had the opportunity of knowing or increasing their knowledge on the subject matter of accessibility and its characteristics. They also had the opportunity of reflecting on and researching about the conditions the population with disability faces in the learning process. This allowed them to be aware of the phenomenon of exclusion many educational institutions participate in.

The accompaniment of organisms that attend populations with disability facilitated the identification of the most important subject matters to orient the elaboration of the products the ESVIAL Project developed during their period of work.

Roberto Argueta Quan (Universidad Politécnica de El Salvador) (Editor)

Chapter 1 – Introduction

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When a product or service is developed it is important to follow methodologies and procedures that permit to assure its quality, and in this way, to achieve the complete satisfaction of the persons who use it. The models and procedures for the development of products and services are complemented by guidelines or principles that are recommended to follow in the different phases of the development, which can be denominated as good practices that identify by experiences of the previous applications of the procedures or methodologies.

Good practices in the management and implantation of educational courses or programs are those combinations of principles, actions and experiences that have produced benefits of distinct nature for the institutions and thereby, they can be identified as recommendations or benchmarks for other organizations can get those benefits with its application.

The educational institutions revise and update their academic programs on a regular basis. They also put together new educational programs according to the needs detected by population groups that have particular educational requirements.

The ESVI-AL Project produced, during its execution, many instruments that look for the improvement of the design and implantation of virtual curriculum developments, to achieve that the educational materials and virtual platforms that have them satisfy the standards of accessibility for people with disability and it also developed a model for the accreditation of quality and accessibility of those virtual educational programs.

Among the products that the ESVIAL Project developed during its execution, stand out:

- Methodological Guide for the Creation of Virtual Accessible Curriculum Development (ESVIAL Guide). Methodological proposal the ESVIAL Project makes, which establishes a working model for the educational institutions that want to establish accessible virtual courses to do, taking into account the accomplishment of accessibility standards and requirements. When the processes proposed by the ESVIAL Guide are followed, it eases the elaboration of audits that permit the diagnosis of fulfilment of accessibility norms, and the improvement in the capacity of maturity of the educational institutions, as well as to facilitate the diverse tools that permit the establishment of curriculum programs and the correction of possible abnormalities that could come up with respect to accessibility.
- Accessible virtual courses: Within the ESVIAL Project, the partner Universities began to establish virtual courses following the proposed methodology in the ESVIAL Guide. The educational contents and nature of these courses were

oriented to the satisfaction of the educational needs of groups of persons with disability in Latin America and, in that manner, to facilitate their employability.

- Model of accreditation of quality and accessibility of virtual courses: This model was developed with the participation of the Latin American and Caribbean Institute for the Quality in Distance Higher Education (CALED, for its acronym in Spanish) and it constitutes in a normative that permits the granting of accreditation to virtual courses in terms of quality and accessibility.

The Methodological Guide for the Creation of Virtual Curriculum Developments (ESVIAL Guide) proposes a model constituted by seven processes that coincide with the categories established by ISO/IEC 19796/1 standard, as it is shown in picture 1.1.

Picture 1.1. Model of processes of the life cycle of a virtual accessible educational project

This methodology was put into practice by the ESVIAL Project for the implantation of accessible virtual courses that had the end of offering training to people with or without a disability with the interest of improving their employability. The 6 implanted courses were:

- Computer science/Office automation training - ECDL/ICDL
- Entrepreneurial Initiative
- Social networks administrator (Community Manager)
- Coaching for employee performance
- Introduction to Customer Service Centers
- Written Communication Skills

The model of accreditation implemented within the framework of activities of the ESVIAL Project is a model based in the quality accreditation model from the Latin American and Caribbean Institute for the Quality in Distance Higher Education (CALED, for its acronym in Spanish), which includes indicators, in aspects about quality of the contents and the backup institutional resources, as well as aspects about the accessibility thereof.

The book gathers information about the actions made during the implantation of two accessible virtual courses that were used as practical cases in the educational workshops the ESVI-AL Project make for the teachers of the member Latin American universities. The processes that were followed for the accreditation of quality and

accessibility of two of the implanted courses for the project are also included. Each one of the mentioned practical cases, both the established courses as well as the courses subject to the accreditation process, constitute a chapter of this book and the good practices that are identified are added in its development.

These Good practices and cases of success in the establishment and accreditation of the accessibility and quality in virtual education book has the intention of serving as a reference for guiding those teachers and functionaries of higher education institutions, who are interested in establishing courses in virtual surroundings applying the methodology proposed by the ESVI-AL Project.

The contribution of good practices in the establishment of virtual courses included in this book are proposals that be beneficial at the moment of implanting some educational course or program and its effective application is subject to the dependence of the nature of the course, of the context in which it is implemented, of the institutional policies in the administration and of many other aspects and circumstances of each course and the institution which establishes it.

We hope this contribution from the ESVI-AL Project benefits all those educational institutions that want to establish accessible virtual curriculum developments and, therefore, contribute to the progress of the task of bringing the possibilities of education closer to all persons that for reasons of disability have been impeded from accessing education at a higher level.

All the teachers and administrators of educational institutions must assume the compromise of assuring that the educational programs are accessible. We, the participants in the ESVI-AL project, understand it that way, and we hope and wish this humble contribution of the project, the good practices book, contributes with the progress towards the objective of getting an inclusive education.

Organization of the Book

The book has six chapters in which it displays the processes followed during the establishment of two accessible virtual courses, the accreditation model of virtual courses, developed by the Latin American and Caribbean Institute for the Quality in Distance Education (CALED Model - ESVI-AL), and the accreditation experiences of two virtual courses with the CALED-ESVI-AL model.

Chapter 2 presents the practical case of establishment of an accessible virtual curriculum program, following the ESVI-AL methodology. The curriculum development under discussion is the "E-learning certification" degree, held by Universidad Galileo in Guatemala. The considered processes in the ESVI-AL methodological guide are described, in terms of the information each one of them has. For each one of the processes, there is a template that organizes all the information the methodological guide proposes to collect, all of which is available at the Web page. http://www.esvial.org/guia in the description of each one of the processes, the recommendations as good practices are included, they can be useful for the ones in charge of establishing virtual accessible courses.

Chapter 3 presents a second practical case of establishment of a virtual accessible course. In this case is the blended learning course "Attention to diversity in the Pre-school Education class", which is part of the Teacher Degree in Early Childhood Education, given in the Faculty of Educational Sciences of *Universidad de Granada*, Spain. As in chapter 2, some good practices identified in each process of the establishment of this course are included.

Chapter 4 "Analysis of the CALED-ESVI-AL accreditation model for the application of good practices", has an exposition of the components of the accreditation model, it is an extension of the model of quality in virtual education, to which indicators about accessibility aspects have been added. The indicators of each component and the basic criteria that are applied in the evaluation of each indicator are also displayed. General recommendations that the persons in charge of administrating the accreditation project of a course in the CALED-ESVI-AL model should take into account for the assurance of the accreditation are also displayed, they have a special emphasis in the accessibility aspects.

Chapters 5 and 6 are dedicated to the analysis of two practical cases of the accreditation process of accessible virtual courses under the ESVI-AL, CALED model. In each one of them, the comments the evaluators make to the auto evaluation reports in each one of the areas of the accreditation model are presented, and some good practices are displayed, which are recommended to be followed to improve the possibilities of accreditation of an accessible virtual course.

At the end of each chapter, a bibliography of the documents that have been consulted or that have been used as reference in the elaboration of each one of them is included.

Chapter 2 - Good Practices of the Program Establishment: E-learning Certification

Nowadays, in our society, training is one of the most valuable resources for people. Therefore, a growing interest can be seen in order to access to a flexible and adjusting training to the needs of people, in any moment and place. Such need can be satisfied through virtual education. Hence, the necessity to count with professional personnel able to perform within the E-learning field. The observation of such phenomenon has driven to the consideration of establishing an E-learning Certification. It has as purpose to provide training to educators and professionals interested in the educational field. This way, they can design contents and develop virtual courses, through a system that eases the organization, design, development, setting up, and teaching process of those courses.

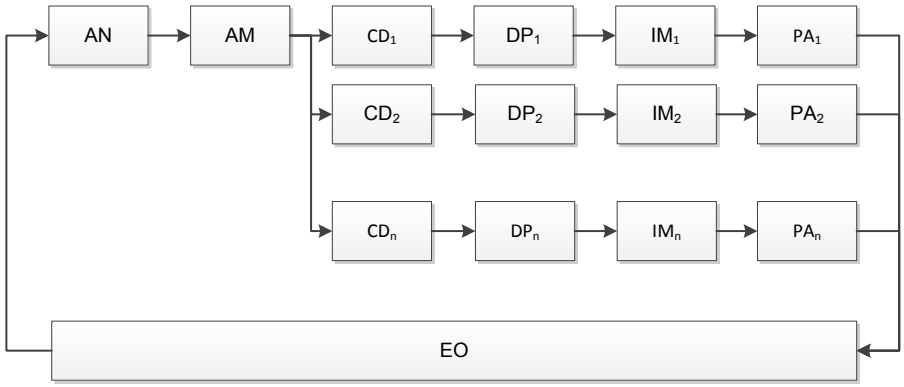
For the development of this educational project: “E-learning Certification” - The methodology proposed by the Project ESVI-AL was taken into account. It was taken through the Methodological Guide for the Establishment of Accessible Virtual Curricular Developments (Guide ESVI-AL), in order to enhance the education program that allows inclusion of diverse participants of the universities in Iberoamerica (Spain and Latin America). This chapter introduces the analysis of the proposed processed by such methodology and therefore, start with the accessible virtual curricular development process, proposed by the Galileo University in Guatemala. This chapter attempts to present recommendations of good practices to be applied within an accessible curricular development. A recommended approximation about using the ESVI-AL Guide is proposed, in order to be taken as reference when establishing the accessible curricular development.

Application of ESVI-AL Guide to the Educational Program

The first step to be taken, according to the ESVI-AL Guide, is the definition of the life cycle of the project. Thus, using the progressive life cycle was decided. This allows a Needs Analysis and Framework Analysis for all the courses included within the E-Learning Certification program, such as it is shown in the Picture 1. In the case of E-learning Certification, a program that is compiled by five courses is identified. Such courses make part of the training action.

The picture 1 shows the processes of needs analysis and framework analysis, jointly with the assessment process that will be carried once. The rest of the processes will be carried out the time may be necessary, according to the number of modules or courses may be taken into account for the project. This life cycle is suitable for the

structure of the E-learning Certification. Therefore, as follows the manner of developing each of the processes established by the ESVI-AL Guide is explained.



Picture 1 Incremental life cycle with gradual teaching

It was very important to review the activities of each one of the proposed processes in the Guide, for the creation of this curricular proposal. The relevant information collected during the activities of each process is gathered in a template to be able to carry out a deliverable of the products and present them in an orderly and coherent manner. Therefore, the manner of developing each of the processes for the curricular implementation of the E-learning Certification is as follows. It exposes the recommended good practices for each process and the template that gathers the output information of each process. The complete templates and their details can be checked at the web site http://www.esvial.org/guia. This is a complement of this book of good practices.

In order to highlight the good practices proposed in this book, the following template will be used. Its purpose is the reader can make an easy identification of it. The first good practices that can be proposed on the implementation of accessible virtual educational projects are:

GP1: It is important to know the methods proposed in the ESVIAL Guide, to begin any educational virtual accessible project, to clarify its development through each of their processes.

GP2: After having studied and analyzed the ESVIAL Guide, it is important to make a revision of the proposed life cycles as a manner that the most appropriate one is chosen for the development of the curricular plan of the educational project.

Good Practices conducted through the Needs Analysis Process (AN)

The process of the Needs Analysis (hereinafter called, AN Process), is highly important for the establishment of an accessible virtual curricular development process, since, as first procedure considered in the methodology established in the ESVI-AL Guide, it is the collection of evidences to sustain the establishment of the instructive action proposal to the authorities of the implementing educational institutions.

As it is established in the ESVI-AL Methodical Guide, the objective of the AN process is to identify and describe the requirements, needs and restrictions of the instructive action. In this case, of the E-learning Certification.

During the Process AN, are analyzed the needs on education of the target population group characteristics, which is addressed the E-learning Certification, reason why it is identified and defined the context, the needs, requirements and demands for the development of the project. As a result, the goals will be recorded, as well as the objectives, the necessities, and the requirements of the educational project that is to be implemented. Summing up, this process is divided in three activities:

- AN.1 Analysis of demand
- AN.2 Identification of actors
- AN.3 Definition of objectives

It is important to include members of the leadership team of the implementing educational institutions, in the integration of the work team, commissioned of these activities of the Process AN. This ensures the incorporation of the institutional vision and to facilitate the institutional support for the development of the proposal.

This reflection allows us to establish the following good practice:

GP1.AN: In the development of the activities Process AN, it is recommendable to incorporate a member of the leading team of the educational institution which would like to implement the learning process.

In the case of E-learning certification, the Director of the Computer Science School and the Director of the Virtual Education Department of the University where incorporated in the drafting team.

Below are described the resultant products of the three activities that conform the Process AN, as an illustration of the usage of the guidelines given in the ESVIAL Guide.

AN1. Demand Analysis

According to the ESVIAL Guide, in this activity, the products that allow the identification of the educational necessities should be defined, the identification of the actors as well as the project objectives that are to be proposed.

As a first step the analysis of the necessities was performed, through an investigation to quantify and qualify the necessities and requirements for the implementation of the E-learning Certification Course. This activity consisted in a market research where the records of the problem to solve with this teaching action were suggested, as well as the necessities of the target population.

In the Guide, it is suggested the usage of various support instruments for the collection of information, as well as directed survey to the target group of people previously identified; or in an activity based in the Focus Group technique, with the presentation of diverse important actors of the institution that teaches the course, as well as the population to whom the educational action is directed.

It is relevant to incorporate actors of organisms which could be important partners, as well as organizations of disabled people, support organisms for the professional induction and members of professional labor-unions. This indication allows to evidence a good practice in the process of Needs Analysis.

GP2.AN: During the performance of a Focus group for the identification of characteristics of the necessities for an accessible virtual educational project have to include actors of the different associated sectors of the educational action.

In the case of E-learning Certification the Focus group was used to determine the necessities, requests and demands of the proposal where an association member of the disabled people was incorporated. This person presented the specific demands from people of this labor-union in virtual education or mediated for technology, which displayed important considerations for the educational content.

In the ESVIAL Guide it is suggested to make the proposal of the investigation of market to establish the objectives of the investigation which allows to clarify the guidance and ranges that the actors of the Project should achieve.

GP3.AN: There should be written clear objectives for the investigation of the market, following a structure that facilitates the establishment of the purposes of the investigation.

In the case of the E-learning Certification, the following objectives for the investigation of the market were established:

- To clarify the process that allows the incorporation of professionals in the design and development of contents of the on line courses, through a system to facilitate the process of organization, design, development, set up and teaching of the courses.
- Determine the level of importance that an E-learning Certification may have to improve the employability of disabled people.
- Define the segment of market, disabled or non-disabled people, for the definition of the profiles of the students to whom the E-learning Certification is conducted to, allowing the inclusion of all the interested people.

The following aspects have to be considered in the Analysis of Demand:

1.1 Definition of the problem or Necessity of the Accessible Educational Project

The services that the population is willing to acquire to satisfy their needs or willingness of education, training or professional update must be defined through a virtual educational program that allows the easy access.

Thus, the antecedents are composed first. These will allow to have a glance into the context and there is where the virtual education problem emerges.

1.2 Definition of the objective of the investigation (2 to 3 objectives)

From 2 to 3 objectives should be established to be reached during the investigation of the market, such as these become measurable and achievable throughout this process. Therefore, it is recommendable to use the following steps for its easy and coherent writing. The following pattern can be used in the sentence:

- Write a verb in infinitive, this will evidence an action that will be involved within the investigation, for that purpose it can be referred to the Bloom's Taxonomy Table, which provides a series of verbs according to the purposes to be reached. For example, at the beginning of the sentence it can be written: Research, Develop, Determine, Establish, Collect, among others.
- After the verb, the intervention area or the measurable indicator that is expected to be explored or investigated with the research should be clear. For example: the number of disabled people, the virtual educational area to be developed, or the difficulties in the virtual education.
- Finally, the investigation intention or the purpose that is to be researched in this indicator. For example: that they are focused in the economy area of superior education, to describe the types of support that a person applies in the usage of the Microsoft Office software, among others.

An example of an objective of investigation could be:

> Determine the number of disabled people who are interested in the design virtual program that will be taught at the University.

1.3. Market Segmentation towards the project is directed to (special focus in disabled people)

The segmentation is the division made from the total market, in smaller and uniform groups. Thus, any or all the variables can be taken for definition:

- Geographic variables
- Demographic variables
- Psychographic variables
- Behavioral variables

1.4 Definition of the Instrument to be used (it is recommended the usage of a survey or focal group)

An instrument should be utilized in order to collect the information of the defined segment of the market. That is the reason the usage of the most suitable one to the investigation process is recommended.

The survey is a study aimed to collect the information through a pre designed questionnaire, with the objective to find out the opinion, characteristics or specific events, and addressed to a representative sample of persons. The researcher should select the most convenient questions, according to the investigation nature. The ended-answer questions are recommended in order to achieve uniform and easy quantification results.

1.5 Presentation and analysis of results

The Results Analysis and Presentation can begin with the graphics and/or interpretation of the obtained answers collected with the instrument, reason why the topic or question, graphic and interpretation of the results should be placed. At the end some brief conclusions as an answer of the objectives suggested in the item 1.2 should be given.

1.6 Revision of similar proposals (optional)

There should be placed a similar suggestion or a version of the previous one of the educational project that is to be carried out, with a brief description of the experience obtained then

AN2. Identification of actors

For this activity, it was necessary to identify the principal actors involved in the formulation and establishment of the E-learning Certification. In this section the ESVIAL Guide suggests the definition of the profiles of the educators, technical support and administrative personnel of the project. Likewise, the academic profile should be defined using the collected information in the demand analysis (AN1). For the E-learning Certification the following actors should be defined:

- The education institution that will provide the course, which identification is contained in the brochures and institutional Web sites.
- Technical support and administrative personnel of the academic institution that provides the course, who are appointed for the management of the technology to host the course and the registration, admission and graduation processes of the students.
- The teachers involved in the elaboration of materials and the tutors of the course, whose profile should consider the capability to generate accessible material in educational environments and to know the virtual learning teaching methodology with considerations of accessibility.
- The organizations that gather together the population sector that may be willing to take the course that will be presented.
- The students towards whom the course is addressed, whose profile should include the admission profile of the course and graduation profile.

From the previous information, the following three good practices are given:

GP4.AN: It is important to verify the human resources availability of the institution (technical support and teachers) who are involved in the execution of the accessible virtual course. This allows to take the corresponding actions for the good development of the training action.

GP5.AN: The administrative institutional procedures that are involved in the execution of the teaching action should be verified, in order to have considerations to assist the special necessities of the disabled people.

GP6.AN: It is recommendable to identify and search for the contact with the organisms that gather the segments of population that may be subject of the educational action that will be applied. This allows the identification of specific requirements of the program of education and at the same time this allows the creation of mutual benefit connections.

AN3. Definition of objectives

In the ESVIAL Methodological Guide it is suggested that the objectives of the educational action, to be implanted, should be presented in three categories or levels:

- Strategic objectives (long term)
- Tactical objectives (medium term)
- Operational objectives (short term)

Strategic objectives

The strategic objective that is suggested for the E-learning Certification is related to the observed tendency about the social evolution framed on the denominated Digital Society or Society of the Information which offers the opportunity to remove barriers of access on education. In that way the following strategic objective is suggested: "Create or update virtual programs of the universities of Latin America that participate in the ESVIAL Project, oriented to the improvement of the employability of the disabled or non-disabled population, completely adjusted to accessibility standards applied to education, and given through virtual accessible campus, considering the university level of education, but also possible programs of ongoing training or technical-professional given from universities".

In addition, it is an objective that will be achieved in a long term (3 to 5 years).

GP7.AN: In the approach of the strategic objectives, the refrain to a general areas exercise is necessary, probably circumscribed to the political field or projects in a long term of the institution in which the course will be applied, or maybe policies or in-country projects.

Tactical Objectives

For the accomplishment of the tactical objective, it is important to observe that in the description of the task contained in the ESVIAL Guide, the tactical objective frames a more concrete educational action than the previous one.

The case that is being used as an example is focused in the following tactical objective: "Create an E-learning Certification that allows the inclusion of diverse professionals and educators who look for the update and training in the content and online courses design. A second Tactical objective for this case was: "Suggest an inclusive virtual educational project that complies with the requirements and standards of usage and accessibility, for the education of people with or without disabilities."

As we can see, these are more concrete objectives, which have a medium term perspective (1 to 3 years).

GP8.AN: In the approach of the tactical objectives the specific actions in course implementing educational institutions should be taken in account.

Operational Objectives

The operational objectives, defined by the ESVIAL Guide, are useful to comply the tactical objectives suggested, that is why these are more concrete than the previous ones because these point out the actions that allow the execution of the educational proposal in short periods of time (one year).

The operational objectives that were set up for the course of E-learning Certification where:

- Select experts for the development of contents and definition of the index of each of the courses or modules of the E-learning Certification.
- Design the modules that will be given in the E-learning Certification.
- Create units of learning that expose the content, activities and evaluation of the modules of the E-learning Certification.
- Create and layout the digital material for the implementation of the Web platform.
- Perform the final tests of teaching tools to verify its accessibilities.
- Teach the course to people who are willing to have an update and professional improvement.
- Evaluate the execution of the E-learning Certification to feedback and update their process.

As conclusion of the AN process, there is an invitation to know the example with each of the products that the ESVI-AL Guide suggests, organized in a template proposed that may be found in the Web Site of the ESVIAL Project: http://www.esvial.org/guia. A template can also be created, based on the own needs of the educational project or the implementing institution.

GP9.AN For the execution of the Process AN, it is recommended to collect all the resulting products in a template for its presentation, due to it will allow the plotting of the performed activities in an orderly manner, with their respective results. That will be useful for subsequent processes of the education program implementation. In particular, for the Process of Evaluation and Optimization (EO Process).

Good Practices conducted in the Process of Framework Analysis (AM)

The process of the Framework Analysis, hereinafter AM Process, is the second process which involves the Analysis phase of the implementation of a curricular accessible program as it is suggested in the ESVIAL Methodological Guide.

The Guide describes the objective of this process, which is to identify the framework and the context of the inclusive educational virtual project to implement, being this a sequence of the performed analysis in the previous process, but framed in the real environment where the training will be take place.

In this AM process, should be identified the possible external of the educative institution restrictions (legislative, economic or social), which may influence the development of the project. In addition, the internal requirements, which may be influence the organizational structure of the education institution, and those requirements for the preparation and management of training that is set up, in regards to the personnel as technological means.

The final part of the ESVIAL Guide sets up the planning of the activities of the training program. This has to consider time and necessary resources to carry out the activities related to the institutional design, the production of educative contents, the bringing education, the on-going evaluation of all the process, the collection of the "learned lessons" and feedback to improve the subsequent development cycles.

The AM Process is comprised of the following four activities:

- AM1. Analysis of external context
- AM2. Analysis of the internal context
- AM3. Analysis of the target group
- AM4. Temporal and budget planning

Listed below are described the resultant products of the four activities, as explanation of the implementation of ESVIAL Guide and how the Process AM is developed.

AM1. Analysis of external context

According to the ESVIAL Guide, the Activity AM1 external context Analysis is about the analysis of the possible external restriction of the institution, that may be legislative, economic or social, as well as the aspects of the availability of technological and communication infrastructure, which may influence the development of the educational program.

When applying the task techniques of this activity for the E-learning certification case, the current legislation related to the recognitions is being done, was revised by the State. It was modified to the mode of virtual teaching, finding that there is a recognition and authorization to the educational institution that expects its establishment to carry out training programs in virtual mode.

From the previous information, the following good practices can be proposed:

GP1.AM: In the course of the Analysis of the external context, it is recommendable to review the national legislation in the educational area to determine the level or recognition that the State grants to the virtual education method.

GP2.AM: For the course of Analysis of the external context, it is important to review the applicable law according to the disabled people rights, in relation to the education, and also research about the governmental, private organization and development agencies programs to know and evaluate the current opportunities that may support these vulnerable groups to implement the virtual education activity.

GP3.AM: An important aspect to determine in the Analysis of the external context is to research on the educational availability of existing programs similar to the one is carried out, to determine the points of difference in which we can base its marketing, and determine the economic viability.

AM2. Analysis of the internal context

In the Activity AM2 Analysis of the internal context, the ESVIAL Guide, suggests that the related internal requirements should be established to the organizational structure of the institution, additionally, these should be established to the necessary resources for the preparation, the management and administration of the personal or technological training.

For the case of E-learning Certification, it is established that the implementing educational institution of the educational project has the technical charts required to support its development and establishment. It also was determined that the institution has outstanding agreements and cooperation programs with other entities specialized on the virtual education and with organisms that support disabled people groups.

In addition, it was determined that there is the necessity to review the administrative procedures that facilitate the establishment of virtual programs of education and that should be worked when adapting the virtual platform that will host this E-learning Certification. This will accomplish the accessibility requirements and the established utility on international law, established in the ESVIAL Guide.

To solve the weaknesses revealed, the E-learning Certification commissioned, had developed a work program and submit it to the authorities of the educative institution approval.

In the internal context environment we can establish the following good practice:

GP4.AM: If during the Analysis of the internal context institutional, weaknesses preventing the successful establishment of the educational program under examination are detected, it is recommendable to develop a working program that includes:

- *detail of the activities to be performed,*
- *identification of the responsible of the performance,*
- *breakdown of the resources that demand the execution of activities*
- *working schedule for the performance*

To collect and organize the obtained outcomes during these two first activities (AM1 and AM2), it is recommendable to use the Strengths, Weaknesses, Opportunities and Threats chart (SWOT) which register external and internal aspects where the E-learning Certification is framed.

1.1 Analysis SWOT

For the accomplishment of this analysis it is recommendable to fill a chart with each of the interest points, as the following chart:

Strengths (internal)	Weaknesses (internal)
Opportunities (external)	Threats (external)

Table 1.2 Standard template for the analysis SWOT

After completing this table the conclusions of the analysis can be written (it is recommendable to choose one to three conclusions). These will point out how to address the project, or explain which will be the starting point for its implementation.

AM3. Analysis of the target group

In this activity, the ESVIAL Guide suggests three tasks to obtain the products that identify the characteristics of the population group the inclusive virtual education project is directed to, in this case the E-Learning Certification. Among other facts, the cultural nature and demographic aspects have been considered. These affect the consideration

of contents of education, as well as the way these should be presented. The basic knowledge requested to take the E-learning Certification, where established as well.

GP5.AM: As product of the Activity AM3 Analysis of the objective group, it is convenient to design a form to collect the necessities and preferences of the students at the registration moment. The collected information gathered in those forms will be useful to make adjustments in the forms of the educational content and in the way those will be organized.

AM4. Temporal and budget planning

For this activity an execution plan on the E-learning Certification was developed, in which some teaching resources and assigned technicians were considered. The plan highlights, if it is the case, those necessary aspects to ensure the accessibility of inclusion of the disabled students, and compatibility with the life cycle defined at the beginning.

The SWOT Analysis for the educational E-learning Certification program is presented as an example.

Strengths	**Weaknesses**
Multidisciplinary team: quality and diversity of the working team, which has people specialized in the problem to address (accessibility). Authentic Agreements and Commitments Proper geographical representation Relationships with cooperative entities Appointment and organization of resources and coordination with the working team. Availability of necessary resources for the implementation of the E-learning Certification	There is no culture of openness and transparency to the changes in the teaching processes. Bureaucratization (project and institutional) Poor definition of the proceedings so the project can be Accessible and Inclusive. Non-inclusion of people with special needs. Lack of an accessible platform. That some educators do not know how to make their contents and activities accessible.
Opportunities	**Threats**
Creation of spaces of including professionalism and updating.	Lack of knowledge and sensibility on population about virtual education

Creation (or strengthen) of specific units in the institutions and transference of knowledge. Initiative of inclusive policy Political incidence for the creation of a higher education space. Synergy with other projects, national proposal on each country. Achieve being pioneers in the inclusive proposals on higher education.	and accessibility. It is not a visible problem. Lack of policies, regulations and standards about inclusion. Continuity and sustainability. Credibility of the inclusive processes by the participants, organizations of people with disabilities.

Table 1.3 example of analysis SWOT for the E-learning Certification course.

Good Practices y conducted in the Process of Conception and Design (CD)

After developing the AN and AM processes, the Conception and Design (hereinafter CD) process becomes under development. In order to start with this process, all the activities, tasks and techniques of the process CD should be reviewed. This will allow the guide to the development of an inclusive and accessible proposal, not just for the content but the teaching strategy of the learning teaching process. After this revision, each of the activities starts in order to obtain important products that subsequently will be contained in the Teaching Guide or in the Didactic Units of each course or module.

The Process of Conception and Design has the objective to define the systematic, planned and structured process of the educational and didactic materials that conform an accessible virtual course. In such way, within that process eight activities are determined:

- CD1. Define the model of institutional design that guarantees the usage and accessibility.
- CD2. The definition of the organization and technical requirements that guarantee the accessibility and inclusion.
- CD3. The definition of the techniques, didactic method and inclusive methodology gathered in the Teaching Guide of the accessible virtual course.
- CD4. The definition of the educative objectives and thematic contents gathered in the Teaching Guide and Didactic Units of a project or accessible virtual course.
- CD5. The design of the multimedia accessible resources and communication accessible systems gathered in the Didactic Units of an accessible virtual course.
- CD6. Design of inclusive evaluation tests.
- CD7. Definition of the profile of the team of tutors for the teaching of the inclusive virtual course.

- CD8. Definition of the functions of maintenance of a project or virtual accessible course.

CD1. Define the model of institutional design that guarantees usage and accessibility.

The beginning of this process is one of the most important ones, due to the fact that it is mandatory to define upon which institutional design model will be applied for this proposal. Therefore, in terms of the ESVIAL Guide, it suggests a generic model that allows the revision of each phase, allowing the improvement and continuous update, as well as to ensure the compliance of the regulations of accessibility and usage for the inclusion of a diverse population in a virtual educational proposal. An example of this model that can be applicable is ADDIE (Analysis, Design, Development, Implementation, and Evaluation)

Institutional Design Model	Activities of the CD Process
Needs Analysis	CD2. Definition of the organization and technical requirements that guarantee the accessibility and inclusion.
Design	CD3. Definition of techniques, didactic model and inclusive methodology CD4. Definition of educational objectives and contents from the detected needs.
Development	CD5. Design of accessible multimedia resources and communication systems.
Implementation	CD6. Design of inclusive evaluation tests. CD7. Definition of the team of tutors for the course teaching.
Evaluation	CD8. Definition of the functions of maintenance of an accessible virtual course.

Table 1.4: Comparison of the phases of the ADDIE Model with the activities of the Process CD.

In this first part, we can mention the first good practice:

GP1.CD: It is important to begin the development of the teaching learning process, defining a model of institutional design, concordant to the institutional philosophy and which at the same time fulfil the standards and requirements of accessibility that allow the inclusion as it is regulated in the ESVIAL Guide. Reason why the model ADDIE suggested in the Guide can be selected, for its generic nature or can be chosen other that may be identified with the activities of the process CD.

CD2. The definition of the organization and technical requirements that guarantee the accessibility and inclusion.

The following step is the analysis phase, in which the organizational and technical requirements should be defined to guarantee the accessibility and inclusion, as it is defined in the process included in the ESVIAL Guide. Thus, it was necessary to go back to the previous two processes, AN and AM, in order to obtain the necessary information, and to continue.

CD3. Definition of techniques, didactic model and inclusive methodology and CD4 Definition of educational objectives and contents from the detected needs

After developing the first activities, the design phase begins. Here, the General Teaching Guide for the inclusive virtual educative project is developed. Its purpose is to present to the educators and possible participants, the training mode is proposed for the E-learning Certification. This guide was developed following the guidelines suggested in the Manual for the Elaboration of a Teaching Guide for an Accessible Virtual Course, as principal product of the Process CD of the ESVIAL Guide. As a result the following good practice is suggested:

GP2.CD: When developing the General Teaching guide of a course which will be applied, it is recommendable to follow the guidelines contained in the Manual for the Development of a Teaching Guide for an Accessible Virtual Course.

The manual for the Development of an Accessible Virtual Course, contains a detailed explanation of the methodology and didactic elements which have to take into account for the achievement of the most important products of this process. The aforementioned manual is compound of two main blocks:

1. Academic Structuring
2. Didactic and Educational elements of the process of Teaching-Learning

Structuring of the course

The first step consists on the determination of the global organization of the course. The logic and functional sequence of the different elements which conform depend upon such step. Among these elements the teaching materials are found. The structure should be flexible enough to allow the combination of models, to the point that any suggested designed given by the course teacher could be captured.

Objectives of the unit:

Content Topics/Subtopics	Web resources/Activities	Activities	Curriculum load	% Eval.

Week 1 Introductory Unit Week 2 Unit 1 1. Topic 1	Which web 2.0 or digital resources will be used (remember that these should be accessible or give options for accessibility/usage) ?	Define the kind of activities: 1. Individual or group activities 2. Forums, practice projects, essays, etc.	Prepare weekly plants, and if necessary, daily plans.	Define the % granted to each unit, activity or process

Table 1.6 Example of the elements to be considered in the units of the proposed courses

CD5. Design of accessible multimedia resources and communication systems.

Likewise, from here, it goes to the fifth activity of the CD process. Here, the accessible multimedia resources and the accessible communication systems were designed. These are the developing phase of the model of training design. Within each of the didactic units of the proposed module for the E-learning Certification contain them.

Thus, it was important to consult the guidelines of the ESVIAL Guide and the Manual for the Elaboration of an Accessible Virtual Course Teaching Guide, since there is the explanation of the template that will be used for the Didactic Units and to continue with the homogeneous structure and to unify the proposal.

CD6. Design of inclusive evaluation tests Definition of the tutors' team for the curse teaching and CD8. Definition of the functions of maintenance of an accessible virtual course

Listed below are the last three activities, in addition to the subsequent processes of the ESVIAL Guide, the Implementation Process, Learning Process and Evaluation Process. Therefore, it is recommendable the application of the following good practice:

GP3.CD: *During the implementation of the Development and Production, Implementation and Evaluation of the ADDIE model processes, involving the last four activities of the CD process, it is important to take into account that these will be improved with the processes of the mentioned ESVIAL Guide. The Development and Production process would assure the fulfilment of accessibility and usage of the proposal. During the process of Implementation and during the process of Learning, the proper methodology for the inclusion of all the participants, with or without disabilities, will be verified. Finally, the Evaluation process will support the development of the review of all the proposal and improve it from one publication to another.*

GP4.CD: For the effective development of the activities of the Process and Conception and Design, it is recommendable to integrate a group of professionals who have the requested expertise. Each of them will be granted with specific functions for the

structuring of the design of the course that will be implemented, taking into account the guidelines and quality standards that the ESVIAL Guide establishes.

GP5.CD: In the case that an educational institution that expects to establish an accessible virtual course has a virtual educational project management, or any other similar function office, it is recommendable that its principal or person in charge, participates jointly with the training designer. Thus, the CD process activities will be adjusted to the philosophy and institutional strategic plan.

GP6.CD: For the creation of an Accessible and inclusive educational virtual program, it is recommendable to count with the analysis developed by a marketing expert who could define the admission profile of the students. According to this, the technician of the accessibility part, will carry out some observations and suggestions that should be taken into account for the methodological definition and the educational strategy for course learning. In the same way, the graduation profile will be useful to establish the didactic objectives of each one of the topics treated on the Certification modules.

GP7.CD: When establishing the methodology of an accessible virtual course, it is important to take into consideration the educational necessities and the students' profiles. The most important is to fulfil with the standards of usage and accessibility of the users.

GP8.CD: During the establishment of new virtual accessible courses, it is important to maintain the educational philosophy of the institution as a transversal axis within the curricular plan of courses.

GP9.CD: A good practice is that during the implementation of the course, the coordinator and the technician on accessible virtual educational project can constantly solve the possible problems that any participant may face, in order to improve the learning process. This continuous evaluation and improvement of the course will allow the adjustment of some functions and instructions of the activities of the courses or modules; in consequence, it is going to be a continuous improvement.

Unlike the previous, in this case there are 2 important documents to develop as final products: the Teaching Guide and the Didactic Unit of each of the courses or modules, thus, it is important to create the templates. This structuring and its respective explanation is in the complementary documents in this book in the web site www.esvial.org/guia.

Good Practices conducted in the Process of Development and Production (DP)

During the Process DP, the activities that allow obtaining the materials and contents for the placement in the learning platform are developed. Therefore, it is relevant to

clarify the definitions of usage, accessibility and inclusion, because these are the most important three aspects of an accessible and inclusive virtual learning environment creation.

The usability according to the ISO standards, is the level of efficiency, effectiveness and satisfaction with which the users can reach the specific objectives in context of the specific uses. When using any of the technological products, it will be able to obtain easiness and satisfaction.

Accessibility is defined as the easy access that a user may have to the offered contents and materials, that may be useful for most of the users, without exclusion of those with different capacities.

When developing any course or educational project, it is also important to take into account the technological diversity with which the digital content can be used. Therefore, the universal templates creation will be taken into account. These templates are in function of the target group that was defined in the AM process, as it is described in the ESVIAL Guide.

As a result, the main objective of this process is to produce and/or adjust the contents and/or didactic tools that the accessible virtual educative project requires, according to the design developed. It was carried out during the Conception/Design process (CD), respecting the guidelines WCAG 2.0, using the support of the techniques that the ESVIAL Guide provides in the activities of this process, in order to reach a quality product.

Thus, for the development of this process, and according to the ESVIAL Guide, the following activities should be performed:

- DP1. Planning of the production
- DP2. Detailed accessible design
- DP3. Elaboration/Modification of the accessible multimedia resources
- DP4. Elaboration/Modification of the accessible teaching software
- DP5. Reuse/adaptation of pre-existing material
- DP6. Integration and tests

DP1. Planning of the production

To fulfil the objectives of this process, the necessary resources where established for the breakdown of the production work of the accessible contents and the development of the production plan of them.

DP1.1 Division of the production work of accessible contents

GP1.DP: A good practice for the development of videos, is to carry out a detailed planning for its production and post-production, which begins with a calendar of activities and resources, it also has a technical script for the planning of the shots to be taken, assign to the responsible person of each stage and finally, to carry out the post-production, validation of accessibility and its publication.

GP2.DP: It is important to draw the work line that will be carried out for the documentation of the accessible virtual course that allows the validation of its usage and access, according to the students' profile. Such profile has been defined with the performed research in the AN process and at the same time, to suggest a quality inclusive virtual education proposal.

DP1.2 Planning the production

Some recommendations to divide the production work are:

DP1.1 Dividing the production work of accessible contents

- HTML contents: these are carried out in book format, (e.g. using eXelearning for a MOODLE platform), for an easy surfing all over the contents of the course.
- Videos: these contain the summary or presentation of each unit content, duly subtitled with audio-description and publication of the script in text format.
- Documentation:
  - It is the document (DOC and PDF) with the extended content of each of the units, where all the unit is placed: welcome, objectives, competencies, content, activities, bibliography and glossary.
  - Instructions for the programmed discussion forums.
  - Practical exercises of each unit, containing the instructions and supporting material, if necessary.
  - Questionnaire of multiple-choice questions to strengthen knowledge, if it is necessary due to the kind of methodology is used.
- Graphic line of the course:
  - Creation of tags or identifications for each of the sections of the units.
  - Design of the identification of each didactic unit.
  - Design of the templates for the audiovisual presentation, slides presentations and videos.
  - Graphics or images contained in the material, emphasizing its corresponding alternative text.

The theoretical and practical contents will be adapted to other versions of office automation programs. The forms containing the theoretical, practical exercises and multiple-choice questions documents will be in PDF or DOC. These contents will also be created in HTML format. Finally, the explanatory videos of the contents of each unit will be saved in AVI format, or uploaded in YouTube, duly subtitled, with audio-description.

GP3.DP: A good practice is to count with a structured plan for the contents management and its validation. Such considers three important moments: creation and revision of the contents, modification and adaptation of the formats that allow the

access and usage. Finally, the third is the verification and validation according to the guidelines and requirements of accessibility.

DP2. Detailed accessible design

DP2.1 Carry out the detailed accessible design of the multimedia resources

To fulfil the accessibility guidelines that are established in the methodology of the Guide, it is necessary to take into account the design of the web that will host the HTML format contents. This should be in a simple format, with adjustable font size, containing a lateral menu, without a large range of colors. The colors that may confuse people with visual difficulties will be avoided.

Regarding to the videos, a presentation with an audio and written description of the same can be considered. Otherwise, having a person who performs the explanation of the contents. Another good option is to have sing language translation if it is going to be a course for a specific context or place. For those who are visually handicapped or hearing difficulties, the presentation should be presented with large font size, accessible colors and optional subtitles.

GP4.DP: A good practice in the detailed accessible Design activity is to obtain an integral team group, where the necessary support can be given to fulfil with the quality requirements that an inclusive educative virtual project must have. It is viable to have a working team with a few expert participants in one of the needed functions for the curricular development of the educational proposal. Otherwise, there can be a team of several expert professionals who develop each of the roles.

GP5.DP: In the creation and configuration of the contents contained in the platform the established preferences in the target market study must be taken into account. Such study was carried out in the AN process. The preferences were defined in the students' profile of the AM process, taking into account that this will allow a greater usability from the registered students in the educational proposal.

DP2.2 Design of the interactions

In the design of the platform, the controls to go forward and backward inside each of the Certification modules were considered. The access to the offered versions of the contents, supporting material and activities were also considered. This was taken, so the student could choose one, according to his preferences.

DP3. Elaboration/Modification of the accessible multimedia resources

For this activity all the previously produced resources where taken in order to be modified and adapted according to the validations that were made with the accessibility and usability tools.

DP3.1 Production of accessible multimedia resources

According to the profile defined in the processes AN and AM, the usage preferences of the potential students who join the educational program should be analyzed. In the

case of the E-learning Certification it was preferred the PDF format, due to the programs offered by the office suite, and the accessible web pages through internet.

Detailed scripts were created for the development of welcome videos, and those that could be part of the supporting material for the comprehension of the course contents. Then, the technical team and tutors where organized to carry out the corresponding videotaping and editions. After the recording process of each video was completed, the post-production followed, where the E-learning Certification graphic line was added. Finally, the accessibility validation was obtained, where the corresponding subtitles where placed, uploading it through YouTube. The YouTube link was inserted in the learning platform for the visualization of the videos.

DP3.2 Testing the accessible multimedia resources

In this part the technical team carried out the necessary accessibility tests of the slide presentations of the videos and during the course will be validated the weekly video conferences that will be performed.

GP6.DP: Carrying out a pilot course to be used as test of functionality of each of the materials that will be implemented within the learning platform is a good practice. This may be performed with focal groups or with a determined group of people, who have different abilities for the verification of functioning, usability and accessibility in the learning environment.

DP4. Elaboration/Modification of the accessible didactic software

In the introduction of each module video tutorials were created as a guide for the platform and content usage. When carrying out those video tutorials, the same procedure employed in the other videos was followed. These started with a script, the planning of the resources, then production and post-production. When those were concluded, the technician was in charge of the development of the subtitle and the verification of accessibility, so then could be uploaded to YouTube and in the learning platform.

GP7.DP: A good practice in the development of a didactic software is the evaluation of the kind of resources that is going to be needed for the performance of the suggested skills for each didactic unit. This will have to take into account the characteristics, preferences of the student group that is joining the virtual educational program.

DP5. Reuse/adaptation of pre-existing material

For the E-learning Certification, some already existing materials, as well as videos and presentations, where taken from the web. Such were taken as complementary or supporting material for each one of the modules.

DP5.1 Revision of the existing material and determining if it can be used or redesigned

The process of selection for the pre-existing material from the web was performed according to three requirements: relevance of the content for the topic of the module enrichment, which maintain the used formats within the course (Microsoft Word, PDF, Power Point and YouTube videos).

GP8.DP: A good practice for the utilization of pre-existing materials is to use a reliable repertory that contains valid material for the quality of content. Afterwards, to carry out the corresponding validation for the accessibility and usability. When it is not accessible and there is enough time and proper equipment, the material shall be restructured to fulfil with the established regulations of accessibility and usability suggested by ESVIAL Guide.

DP5.2 Conduction of actions for the reuse, re-purpose and adaptation of pre-existing materials

GP9.DP: It is important that the copyright regulations have been taken into account for the usage of pre-existing materials, complying with the kind of license the document or material to be used has. If the material is restructured to be published as document or accessible material, the author should be asked about its usage, and additionally the corresponding references of the original document should be made according to the APA rules.

DP6. Integration and tests

For each of the modules that comprise the curricular plan of the E-learning Certification, files were created. These identified the contents, supporting materials, graphic resources of the graphic line for the course, didactic software, activities and multi-choice questionnaires. Likewise, the platform structure was planned to create hierarchies of each of the contents; for example, placing of tags (identifiers) of the learning track, contents, supporting material, didactic activities, and technical forum. After these, the corresponding materials for each of these areas were uploaded.

DP6.1 Integration of multimedia resources, software and reused material

The integration of the contents, multimedia resources, didactic software and material were gathered in files in order to place them in a logic manner inside the learning platform.

GP10.DP: The organization of the documents, materials and resources in files is a good practice in the integration of multimedia resources. These should be divided according to the organization of the learning platform, as this will allow that the technician performs the set up in an efficient and organized manner.

DP6.2 Integration and functional tests

After the setup of a unit has been completed, its functioning was verified. Thus, it was required a new test with people with or without disabilities, in order to verify the correct functioning of all the materials. Under the same process, each of the materials uploaded in the platform was verified, with some validators as well as: WAVE, WGAC

2.0, ARIA, among others In addition, manual validators were used as well, some of them are: color, font, magnifying validators were used, among others.

GP11.DP: A good practice in the integration testing is the automatic and manual validation of all the contents, materials and uploaded resources in the learning platform. Such validation used WAVE, WGAC 2.0, ARIA, color, font validators, among others, following the guidelines established in the ESVIAL Guide.

GP12.DP: The application of a pilot test is suggested in the integration tests. This aids to verify the functioning and implementation of the contents, materials and used resources, as well as to ensure the functioning and usage by the students, with or without disabilities, in the learning environment.

Good Practices conducted in the Process of Implementation (IM)

This process pursues the development and installation of an accessible virtual learning platform. The learning environment should allow the automatic adaptability preference of the educational resources in order these could be adapted to the needs that could allow the efficient process of learning-teaching of any educational project.

IM1. Installation and activation

After the platform was prepared, the educational resources were displayed and integrated to the training design.

IM1.1 Preparation of the learning platform (LMS)

GP1.IM: The virtual platform where the courses will be launched shall comply with the guidelines of Web Content Accessibility Guidelines -WCAG- established by the consortium Web Accessibility Initiative -WAI. This guidelines compliance ensures the accessibility of the platform to disabled people.

GP2.IM: When organizing the materials in the resources module of the platform that hosts the course, the documents posted available to the students must be in different formats, so the students may have easy access to these, according to their preferences. For example, each document that is originally created in a word processor (.doc), should also be placed in other formats (PDF, among others)

GP3.IM: A good practice is carried out also, when organizing the platform with the amount of modules that allow a learning environment. This organization shall ease the attention to diversity and meaningful learning of the entire student population that register in the educational program.

IM1.2 Integrating educational resources and didactic design

- Resource module: It will host theoretical contents, files with practical exercises, multi-choice questionnaires for the self-assessment and video-summaries of each unit.
- Tasks section: This module will host tasks corresponding to the evaluation tests that will be incorporated throughout the course, to the practical exercises or example cases for the course.

IM1.3 Carrying out tests in the learning setting

After the data loading in the server of the MOODLE virtual classroom, a series of tests took place, in order to prove that all the material was uploaded correctly and that it was visible for the students. Some of the tests that may be performed are: web accessibility validators, contrast color validators, font type validators, among others.

GP4.IM: When the accessibility tests and material visualization tests are performed in the resources of the platform where the virtual classroom is supported, it is recommendable to verify the tests using different browsers (for example Firefox, Chrome and Explorer). If some difficulties on visualization are observed in any of these browsers, and if it is not possible to solve them, a warning shall be placed at the home page of the virtual course so the user takes the corresponding preventive actions. Likewise, there should be performed several tests of access in different mobile devices, such as smart phones and tablets. This will verify possible difficulties and solve them as it is possible.

IM2. Organization of technical and user support

It is important, since the beginning, to organize the technical support that may guarantee the system and the users' data security. Moreover, these shall secure the procedures of the maintenance of the software.

In addition, it is necessary to organize the support of user service of the virtual course (teachers and students), preventing support services.

IM2.1 Organization of technical support

The technical resources were: upload of information, solution of incidents, risks management, maintenance, licenses registry, etc.

GP5.IM: A good practice is the distribution of the technical support within different levels. This allows solutions in an organized way of the difficulties that may be presented in each one. Therefore, it is recommendable to provide technical support in: the site management level, then, the tutor level, and finally, student level.

IM2.2 Organization of user support

Business hours for the problems solution in the usage of the contents, tools or downloading within the platform. This service hours may be synchronous by using: chat or video conference. Otherwise, these can be asynchronous by using: technical forum and messaging.

GP6.IM When the institution which implements an accessible virtual course in a management virtual platform of the accessible course does not have technical support department specialized in the implementation of courses of this nature, it could hire external support services. However, it is a must to organize the training of its own technical charts, so the institution does not depend upon external support for implementing new accessible virtual courses.

Good Practices conduced in the Learning Process (LP)

The Learning Process (LP), incorporates the Implementation Phase of the educational project. The proposal and establishment of the accessible curricular program was carried out upon such process, according the ESVIAL Methodological Guide suggests.

The Process LP is comprised in the following four activities:

- LP1. Admission management
- LP2. Registry of preferences, adaptation of the learning platform and initial instruction
- LP3. Execution of the inclusive virtual education and the accessibility treatment
- LP4. Inclusive evaluation

Listed below are described the resultant products of the four activities, as explanation of the implementation of ESVIAL Guide and how the Process LP is developed.

LP1. Admission management

This activity contains the procedures with the academic, administrative and financial requirements, so that any student can make the admission and registration process in the accessible virtual educational program.

LP1.1 Obtaining information about the student and the needs of interaction

In order to meet the personal profile of the student a form can be designed, so the students can fill it out at the registration moment, similar to the following example in the table 1.7

Each student should fill out the form of interaction preferences (section AM3.3 of the document Framework Analysis).

Finally, for the cases of disabled students, it shall be necessary an accreditation of the disability, as well as an agreement to be signed by the tutors of the disabled person.

GP1.LP: In the activity of Admission Management, a good practice to perform is a social visit to the home of the disabled people who register in the course. This will give the

opportunity to interview the applicant and verity the given information in the form. This interview will be carried out with the objective of deepen in the needs and usage of the tools for the applicant education.

Basic Information			
	Names:		
	Last names:		
	Type of document:		
	Number of document:		
	Gender:	☐ Male	☐ Female
Birth Information			
	Date:		
	Country:		
	Town:		
	Township:		
	Nationality:		
Domicile:			
	Country:		
	Town:		
	Township:		
	Zip Code:		
	Address:		
Other information			
	Email:		
	Telephone or Cellphone:		
Academic Degree:			
	Studies Performed:	(level)	(Place)
		(date)	(type of certificate)
Interaction preferences			
	Hardware:		
	Software:		
Supporting Tools (tiflotechnological):			
Disabled Persons:			
	Kind of disability:		
	Certification:		

Table 1.7 Suggested collection basic data for students.

LP1.2 Invoicing/accounting management

The course registration of the students is formalized by delivering the forms duly filled out and the required extra paperwork.

The previous days to the beginning of the course, the student will be provided with a user name, password and web address of the virtual classroom. These data is where the contents of the course are, welcoming to the course that is going to start.

GP2.LP: A good practice is to delivering the institutional documents, regulating the community relationship and the training exercise of the students who register in the virtual educational program. Those documents should be accessible and sent, at least

in two downloadable formats, in order these would be used by the students according to their reading preferences.

LP1.3 Providing the student with the organizational components that ease the learning

A series of basic services to the students during the course period should be provided. These will include the specific services of data accessibility, knowledge of the teachers in this area. These services can be:

- On-line and on-site tutoring (if the students live in the same country)
- E-mail, chat or video conferences questions.
- Questions to teachers and classmates, through forums.
- Technical support in a virtual classroom level.
- Online technical or personal support concerning the certifications.

GP3.LP: It is recommendable to establish, along with the tutor, synchronous or asynchronous hours to follow up and e-moderation of the process of teaching-learning within the course. This will provide necessary accompaniment within the course, generating a learning environment, accessible to the students, and at the same time, flexible for the tutors' organization.

LP2. Registry of preferences, adaptation to the learning platform and initial training

From the registry of the preferences and necessities of interaction, the manual or automatic adaptation to the learning platform and educational resources is performed.

LP2.1 Communicating the institutional services that the University provides to the student community

The Educational Institution should list the services provided to the student through digital or printed documents, where such could be established. Some of those services could be:

- Student service: Psycho-pedagogical orientation, support to the disabled students, work support, etc.
- Technology science classrooms: Location, information about the computer equipment and tools, booking process, etc.

LP2.2 Registering the needs and preferences of the student and to adapt the learning platform

In the moment of the registration of the students in the course, the student fills out a form with the preferences about using the PC's, as well as how the presentation of the

information is preferred. Thus, the learning platform should be adapted, as it is possible, to fulfil with the indicated preferences through the collected information.

GP4.LP: A good practice is to organize training workshops for tutors with the objective they can provide the necessary training to all the participants in the course, according to the content, management and development of the students within the learning environment.

LP2.3 Training the users in virtual environments of accessible learning and in using the supporting technologies

Such as the educators, as the administrative personnel involved in the course, are trained through courses, seminars and extra documentation. Such training is about using accessible environments and accessible supporting technology.

GP5.LP: Each scheduled course should have an introductory section that allows the student feeling the sense of a learning environment. As a result, the student can perform the educational task in a more efficient manner. Therefore, a good practice is taking into consideration the introductory unit in the 1st course that the students receive, within the educational plan in which the student is enrolled. Or, if it is only one course, this introductory section should be part of the learning process.

LP3. Execution of the inclusive virtual education and the accessibility treatment

This activity concretes the teaching and learning process from the inclusive institutional design, making and using the available and produced educational resources.

LP3.1 Implementing the pedagogic, didactic, methodological and technical support

To access into the accessible virtual platform only need to direct the URL of the course, enter the user name and password given from the administrators of the course and access to the content.

LP3.2 Executing the teaching profession according to the pedagogical model and preferences

Professors should carry out methodological and teaching strategies of the universal design learning principles to execute the teaching course in an inclusive way in specific environments. This will allow that they educate to the student with or without disabilities.

GP6.LP: A good Practice on the execution of training is that the professors study the teachers' guide and the e-moderation guide to be prepared about the orientation and

inclusion of the students in each one of the educative activities. They also will be able to support and orientate during the learning teaching process.

LP4. Inclusive evaluation

This activity is parallel to the execution of education because it makes an evaluation of learning and transference of knowledge according to the criteria that have been defined for the approval of the course; or, in the educational program in which the student is registered.

LP4.1 Evaluating learning and transference of knowledge

To be able to evaluate the learning process several standards, percentages, and rubrics of evaluation were established in the process CD. The tutor will use these resources in this stage.

GP7.LP: A good practice in the evaluation of the learning is that the tutors review the teachers' guide and the scheduled activities of each unit. This will allow to have a clear track of learning that should be guided during each unit, giving the guidelines that drive the student into the acquisition of competencies and established learning objectives.

LP4.2 Managing the results of the students

When performing the programming of the platform, the evaluations, self-assessments, and multi-choice tests shall be considered in an automatic way. They have to be accessible to the users. In addition, when performing the programming the rubrics of evaluation should be considered in each unit in order that the tutor can carry out the evaluation in the system and this to generate registry for each student joining the program of the course.

GP8.LP: It is a good practice to allow that the evaluation and self-assessment tests could be accessible and to be taken through the platform of learning, with the objective to strengthen the project in the same learning environment and also, to provide automatic feedback.

GP9.LP: It is recommendable the implementation of rubrics of evaluations with standards that could be measured and quantified, so their programming could be simpler in the platforms.

Good Practices conducted in the Process of Evaluation (PE)

The Process of Evaluation (PE), incorporates the Evaluation Phase of the educational project model under which the methodological proposal of the ESVIAL Guide is performed for the implementation of the accessible curricular program.

This collects information that supports the taking-decision process to improve the accessible virtual training and the inclusion actions that are taken into account in the proposal. The collection of data and its analysis should be previously planned in order each process could be analyzed for the accessible virtual educational proposal that is suggested in the ESVIAL Guide

The results of this analysis will allow the realization of an improvement plan to correct the proposal for future implementation of the educational process. Therefore, this process is comprised by the following activities:

- PE 1. Planning of the evaluation and optimization
- PE 2. Information Collection
- PE 3. Analysis of the obtained information
- PE 4. Optimization

PE1. Planning of the evaluation and optimization

PE1.1 Defining the objectives of the evaluation (What for?)

The objectives to fulfil should be defined with the evaluation process and optimization to include improvements in future revisions of the course regarding contents, material, accessibility, evaluation methods, etc.

PE1.2 Identifying the aspects to be evaluated (What?)

To guarantee the achievement of the defined objectives, the aspects to evaluate should be identified. Below, the aspects are listed in priority order:

- Accessibility of the contents and suggested material.
- Revision of the contents in order to adapt the materials to a new version.
- Revision of the lists of doubts for the creation of a space of frequently asked questions.
- Revision of the estimated time for the development of each unit according to the contents and proposed activities.
- Evaluation of the participation of the students in the virtual platform.
- Revision of the obtained answers in the survey of satisfaction that the student fills out.

GP1.PE: To start the Evaluation Process it is important to take into account what for and what to evaluate, therefore, a good practice is the definition of the objectives and the aspects to evaluate. These will be useful to orientate about searching of the indicators to improve the development of a new version of the course.

PE1.3 Establishing the temporary framework (When?)

The evaluation phase is carried out in two times:

- The first is carried out during the education of the course, performing the adaptations and temporary improvements that allow a better access to the

educational contents. Here, the tutor looks after the necessities that are emerging along the course.
- The second, shall be carried out after ending the course to review the indicated aspects in the previous section.

PE1.4 Identifying the evaluators (Who?)

GP2.PE: A good practice on Evaluation/Optimization of the course is to perform a calendar to plan the different stages of the evaluation that should be carried out for the course. In this moment it is recommendable appoint a responsible person for each stage, pointing out the tasks that will be developed as evaluator of the process.

PE1.5 Building instruments and defining internal and external evaluation criteria (How?)

GP3.PE: The good practice of this case is the performance of a SWOT analysis to be able to visualize both contexts (internal and external), where the information of the processes AN and AM can be considered in the search of the best conditions where the educational project was developed, due to the fact that new necessities could be detected or there can also be found some resources that can support the new edition.

PE2. Information Collection

In this activity, once the plan to carry out the information collection is organized, such collection starts on each of the implied processes in the inclusive virtual education.

PE2.1 Collecting the information of the Needs Analysis (AN) processes

For the collection of the information in this process, the reasons why people gets enrolled to the course have to be analyzed, in other words, their necessities. The collection of this information will be through a survey (or questionnaire that will contain that question).

PE2.2 Collecting the information of the Framework Analysis (AM) process

The information could be collected for this process by interviewing to the organizing institution personnel to describe the motivations of the institutions in the creation of this course, as well as to analyze the external restrictions that have been imposed.

GP3.PE: A good practice is to perform a SWOT analysis where the obtained results on the processes AN and AM could be evaluated to establish the improvements in regard to the educational necessities that may be covered for the educational institution. Therefore, these can be taken into account for a new planning and budget execution of the new edition.

PE2.3 Collecting information of the Conception and Design (CD) process

Collecting as much information as possible, about the new versions contents for the adaptation of the contents that this certification orders will be very important.

GP4.PE: It is recommendable in this process to perform the investigation on the new contents or educational resources that can be updated in the new version of the course. Therefore, the educational institution shall establish the time that should pass in order to perform a new version of the contents and graphic materials for the course, with the objective to be renewed.

GP5.PE: Other good practice to evaluate in this process is the validation of the methodology used in the course. That is why it is important to include within the satisfaction survey of the course, questions related to this topic and at the same time, compare it with the obtained answers in the surveys performed to the tutors. The results should be compared in order to improve the techniques and processes that allow the process of teaching-learning, to be inclusive and accessible.

PE2.4 Collecting information of the Development/Production (DP) process

At this point the information about the difficulties presented in the time of adaptation of contents could be collected, as well as the time of their creation. The objective is that future development and production process keep in mind several factors that will assist to the future modification of the contents, as well as new creations. In the same way, the accessibility and usability should be evaluated, taking into account the kind of versions used for the course.

PE2.5 Collecting information of the Implementation Process (IM)

It will be important to collect information about the manners of implementing and the upload of materials to the virtual platform, as well as the problems that have appeared and the way to solve them. With this information, the solution of similar future errors that may appear in the next processes of implementation will be easier. This process is where most of the frequently asked question can be compiled.

GP6.PE: A good practice is the verification of the accessibility and usability of each of the materials and didactic resources produced for the educational program. Therefore, the tools and programs suggested in the ESVIAL Guide have to be reviewed. Additionally, the students who took the courses or the course should be interviewed. This will improve the suggested formats from the materials and at the same time, ensures that the access was permitted to the programmed content. At the same way it should be performed in the platform, asking and ensuring that the user, with or without disabilities, was able to develop with no difficulty.

PE2.6 Collecting information of the Learning Process (LP)

In this case the information should be collected during the months that the educational action lasts to be able to answer some necessities and differences of future students of the suggested modules. The satisfaction instrument will be useful to evaluate the development of the course by the student, visualizing the different necessities that could be presented during the course. In this stage the frequently asked questions can also be collected to be added to the list.

GP7.PE: It is recommendable to perform an instrument, as a kind of satisfaction enquiry to measure the perception of the course, in function of the utility of the learning, acquired from other resources and given tools. In this instrument, the inclusion of a measurement of development of a tutor is suggested. This will be a guide of the teaching process of this course.

PE2.7 Validating the collected information

All this information will be obtained directly from the forms filled out, given by the participants of the course. In the case of information collection from the participants in the development of the course some reports will be collected. These are designed on the particular criterion with useful information for the objectives that have been defined in each of the previous items.

PE3. Analysis of the gathered information

The objective of this activity is to standardize the information to be able to deduct and suggest the improvement tracks.

PE3.1 Analyzing and elaboration of reports per process

Professors and participants in the development and implementation of the course shall perform the analysis of the processes where they were involved. Both must perform statistical and quantitative analysis of the obtained information in PE2 and to process the useful information to define tasks and to carry out in the moment to adapt the current contents to the future.

PE3.2 To analyze and elaborate a global report

Once the information is collected and duly processed, a global report should be created with the integration of the information of the reports for each process. The information of this last shall be analyzed and verified again to see if the objectives have been achieved and to obtain some conclusions of all the process.

In this report the areas of excellence should be pointed out to strengthen them, as well as the sensitive areas to improve.

GP8.PE: In the activity of analysis of information, a good practice is the performance of a report that describes the carried out process for the evaluation of the course and

the obtained results through the different instruments used. At the end, there should be the necessary observations, conclusions and suggestions for future editions or versions of the educational program. This will allow updating the content and teaching material and at the same time, to improve the accessibility, usability and inclusion in the virtual education proposed.

PE4. Optimization

PE4.1 Elaborating final conclusions and an improvement plan

In the ESVIAL Guide suggests the realization of the analysis and the total information process generation, as well as it was planned in the previous section where an improvement plan should list the necessary actions that should execute for the new proposed version.

GP9.PE: A good practice is to perform the list of the improvement plan where the points to improve should be indicated in the proposal in the moment that should be performed, as well as the necessary resources to execute and finally the appointed person responsible of each one of them.

PE4.3 Communicating the results and recommendations

It is suggested to create a broadcasting strategy of the new improved proposal, directed to the society and the educational institution with the objective that there could be new applicant students, interested in getting the new edition.

GP10.PE: The creation of an effective communication strategy is recommended. Here, the training and update of the tutors and academic personnel involved in the process of learning-teaching can be taken into account, as well as the distribution of the good educational virtual inclusive proposal to the target audience that is interested.

References

Anderson, L.W., Krathwolh, D. (eds) (2001). A Taxonomy for learning, teaching and assessing: a revision of Blooms Taxonomy of educational objectives. Logman. New York.

Barberà, E., & Badia, A. (2005). El uso educativo de las aulas virtuales emergentes en la educación superior. Revista de Universidad y Sociedad del Conocimiento, 2(2), 1-12.
Disponible en: http://www.uoc.edu/rusc/2/2/dt/esp/barbera.pdf

Cabero Almenara, J., & Llorente Cejudo, M. C. (2012). La interacción en el aprendizaje en red: uso de herramientas, elementos de análisis y posibilidades educativas. RIED. Revista iberoamericana de educación a distancia,10(2). Disponible en:
http://e-spacio.uned.es/revistasuned/index.php/ried/article/view/995

Dunn, J. (2013) How to teach critical thinking using Bloom`s Taxonomy en:
http://www.edudemic.com/blooms-taxonomy-critical-thinking/

Equipo de Elaboración de guías docentes y planificaciones adaptadas al EEES (2010), Manual de elaboración de guías docentes adaptadas al EEES. Equipos docentes del Vicerrectorado de Ordenación Académica de la Universidad Politécnica de Cartagena.

ESVIAL (2013). Guía metodológica para la implantación de desarrollos curriculares virtuales accesibles. Proyecto ESVI-AL. Universidad de Alcalá. Recuperado el día 1 de noviembre de 2013, en http://www.esvial.org/guia.

García, A. (Coord). (2010). Manual de elaboración de guías docentes adaptadas al EEES. Cartagena: UPCT.

Instituto de Ciencias de la Educación (2006). Guía Docentes de la UPV: Criterios para su elaboración. Vicerrectorado de Estudios y Convergencia Europea. Universidad Politécnica de Valencia.

ISO (2005). ITLET Quality management, assurance and metrics (ISO/IEC 19796-1:2005). Part 1: General approach. International Organization for Standardization.

ISO (2005) ISO/IEC 19796-1:2005, ITLET Quality management, assurance and metrics, Part 1: General approach. International Organization for Standarization.

Morales, M., Inicio» IVN» Noticias» características-de-un-modelo-efectivo-de-elearning, disponible en: Universidad Galileo (Instituto Von Neumman)/Noticias

Nadal, V. (2013). MATRIZ DAFO: EL COMIENZO DE LA AVENTURA
Disponible en: Blog de Vicente Nadal Marketing y Estrategia

Quan, L. (2013). Manual para la Elaboración de una Guía Docente de un Curso Virtual Accesible. Guatemala: Entregable interno proyecto ESVI-AL (www.esvial.org)

Rivera, M. D. C. G. (2004). Modelo de diseño instruccional para programas educativos a distancia. Perfiles Educativos, 26(104), 93-114. Disponible en: Descargar documento en PDF sobre "Modelo de diseño instruccional para programas educativos a distancia"

Roig Vi, R. Diseño de materiales curriculares electrónicos a través de Objetos de Aprendizaje. Disponible en: http://www.um.es/ead/red/M4/roig42.pdf

Schrum, L. (1999). Technology professional development for teachers.Educational Technology Research and Development, 47(4), 83-90. Disponible en: página web tema "Tecnología de desarrollo profesional para los maestros" (información en inglés)

Schrum, L., & Hong, S. (2002). Dimensions and strategies for online success: Voices from experienced educators. Journal of Asynchronous Learning Networks, 6(1), 57-67. Disponible en: Descargar el documento con el tema "Dimensiones y estrategias para el éxito en línea: voces de los educadores con experiencia" (información en inglés)

Un sistema para el diseño instruccional de Cursos en Línea Revista Enseñanza e Investigación en Psicología (CNEIP), 8(2), 217-229. Disponible en: Página web Universidad Veracruzana. Tema: "Un Modelo de Diseño Instruccional para la Elaboración de Cursos en Línea"

Villar, M. (2009) Diseño Instruccional: Introducción, Disponible en: Blog Mayra Villar "Diseño Instruccional"

Wilson, B. G. (1997). Reflections on constructivism and instructional design. Disponible en: página web en ingles

Yukavetsky, G. (2003). Elaboración de un Módulo Instruccional. Disponible en:
documento en pdf con el tema "Elaboración de un Módulo Instruccional"

Zabalza, M.A., (2004). GUÍA PARA LA PLANIFICACIÓN DIDÁCTICA DE LA DOCENCIA UNIVERSITARIA en el marco del EEES. Documento de Trabajo. Universidad de Santiago de Compostela.

Chapter 3 - Good Practices in the establishment of a blended learning course with the subject: Attention to Diversity in the Classroom related with Children's Education

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In this chapter we introduce the transformation process of a blended learning subject to an accessible blended learning subject, applying each of the processes of the Methodological Guide for the Establishment of Accessible Virtual Curricular Development (ESVIAL Guide).

It is about a subject that is being taught in the University of Granada, within the Teaching Degree in Children's Education. It is developed within the Faculty of Education Science. The subject is called: Attention to Diversity within the Children's Education Classroom This subject is very important in the teacher's education because it teaches concepts, principles and strategies of classroom management. This subject provides a possibility of a plenty inclusion and a global development of each child of the Children's Education. This subject comprises an accredited diploma granted by ANECA (National Quality Assessment and Accreditation Agency). As a result, it follows the standards of the European Higher Education Area.

Thus, in our project we formulated to take in account the following strong issues for each teaching method:

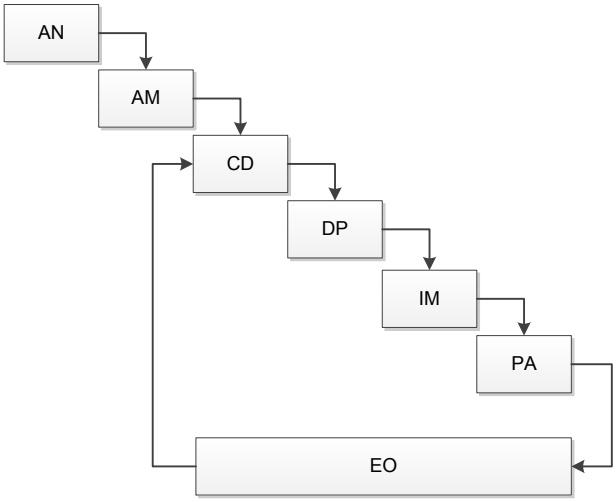
STRENGTHS OF THE FACE-TO-FACE TEACHING (NON-TRADITIONAL)	STRENGTHS OF THE ON-LINE TEACHING

It enables comprehension and approach between educators and students.	It resolves communication problems preventing commuting to the facilities.
It eases the direct cooperative learning (face-to-face interaction).	It eases the on-line cooperative learning (on-line interaction).
It teaches independent working.	It demands independent working.
Knowledge conveyance through on-line	Knowledge management by students themselves (web 2.0)
Learning is produced within the classroom.	Learning is produced outside the classroom.
Teaching is stricter, requires discipline and punctuality.	Teaching is more flexible. It allows progress, respecting own pacing.
It allows a more direct teaching, providing a closer training when using TIC.	It demands learning TIC usage.
Networking is encouraged.	Networking is achieved with other students, in other places.
The educator enhances good face-to-face teaching through an innovative process, both pedagogically as technologically.	The educator learns new functions that allow him being adjusted to the knowledge society through updates when using TIC tools.
It eases the basic knowledge acquisition through positive qualities of the master lesson.	The face-to-face classes may be recorded to be reviewed in any other time.
It allows teaching innovation through using new active methods and audiovisual resources within the classroom.	It allows teaching innovation through using new active methods and web resources like hypermedia, 3D, among others.

Table 3.1 Comparison between the strengths of face-to-face and on-line methods.

In the Table 3.1 we refer the face-to-face teaching (non-traditional) to denote that it is important to use an active and innovative teaching at the University nowadays. However, it is important to keep in mind that in both cases, both face-to-face as on-line learning, the objective must be acquiring meaningful and sustained learning.

As follows, the development of the processes to establish a blended subject: Attention to Diversity in the Children's Education Classroom, recommended good practices in each process and the template that collects the output information of each process are presented.



Picture 3.1: Iterative cycle life with shared analysis (taken from the ESVI-AL Guide)

Good Practices conducted through the Needs Analysis Process (AN)

The objective of the Need Analysis Process, as it is established in the ESVIAL Methodological Guide, it is identify and describe the requirements, demands, and restrictions of an accessible on-line educational project. In this case, it is about the blended subject of Attention to Diversity within Children's Education Classroom

GP1.AN: When developing the activities of the AN Process, and generally in each of the processes, it is necessary to have a professional or a team of professionals with a profile that fulfills these four axis: Pedagogy, Inclusive Education, E-learning, and Accessibility

The products of each of the three activities comprising the AN Process are the following:

AN1. Demand Analysis

AN1.1 Identify demands and requirements

The first product to obtain is the market target segment. Who this accessible on-line educational proposal is addressed to, having in account the possible disabled people.

In our case we define the target segment through the following variables:

Geographic variables: Among the geographic variables, we highlight the region where the students come from, for our certification, as well as the estimation of the population with disabled people that may have access to such certification.

- Region: The region is determined by the place where the teaching facilities are. In this case, it is about the University of Granada, a public university of Spain with more than 60,000 students.

GP2.AN: When confirming an accessible virtual course, it is necessary to think in students from different countries too. The purpose is to simplify the linguistic structures, enhance further explanations, and translate several materials into different languages.

- Population of disabled people: We esteem that every year, we use to have two or three people with mild disabilities in the classroom. The disabilities may be motor, emotional, among others.

GP3.AN: It is difficult to create an accurate calculation about disabled people with access to the university and to our classrooms. However, we must prepare our materials and our strategies for inclusion and accessibility. These will prepare the university as a place that receives disabled people, because they have this right.

Demographic variables:

- Age: 18-23, although some older people get enrolled.
- Gender: Female and male. With massive female presence.
- Social economic level: Any social class.
- Educational level: high school degree as minimum.

Psychographic variables:

- Improvement and professionalization interest: Sometimes they already count with a professional education diploma, and they look for improving their university degree.
- Should having disabled people, the following information may be inquired into:
    a. Type of disability: visual, hearing, or motor
    b. Type of support or tools are being used
    c. Web resources that are frequently used
    d. Limiting issues to the virtual accessibility

GP4.AN: It is necessary to think about accessibility and inclusion, not only on creation resources and promoting our courses as accessible, thinking in disabled people. On the contrary, we must think about pedagogic aids and strategies our students need in the face-to-face and on-line courses in regard to the rest of students. It is necessary to focus on the attention, written and oral expression, etc.

Behavioral variables:

- Frequency of education, updating: Most of them have high school degree and university entrance examination. However, there are some courses of access to the university for more than 25 and some other considerations.
- Conception in regard to the position of the educational institution: The University of Granada is considered as a high-profile university, not only for its seniority,

but for the excellence in the academic ranking and the large number of students from Europe.

- Should having disabled people, the following information may be inquired into:
  a. Perception of the accessibility is granted by the educational institution: in its physical and virtual structure
  b. Experiences in virtual environments

The second product to obtain is the definition of needs. These can be defined as follows: Children's education, as well as the other educational phases, has a great demand of educators' education. The reason is to assist the education of different types of disabilities, high academic capacities, risk conditions of social exclusion, etc.

The third product to obtain is the identification of the requirements that must be complied to satisfy the needs. Since these are referred to education within a specific environment, the requirements to comply the satisfaction of such educational need are related to the profile of the designed Teaching education, as well as the one that teaches the subject.

Summing up, we can see the task AN1.1 in the following chart:

PRODUCT	DEFINITION OF THE PRODUCT IN THIS PRACTICAL CASE
Target segments of the market	Young people between 18-23 years of age, with high school education, most of them with calling for Children's Education Teaching, specifically from Granada, some from the rest of Spain and other places in Europe (partially). Disabled people, with the interest of their professionalization, can be among them. Some of them have completed other related studies.
Needs definition	Training in Attention to Diversity in Children's Education
Requirements to meet needs	- Teaching with specialization in ADEI - Technicians Existence - Administrative personnel Existence

Table AN1.1: Identify demands and requirements

GP5.AN: When identifying the target segments of the market related with a subject within a certification, it is recommendable to think in the part of the population that will be enrolled in the first course. The objective is to properly identify the geographic, demographic, psychographic, and behavioral variables.

AN1.2. To define the class of demand of the qualification

The product to obtain from the analysis of this task is referred to identifying the qualification and its recognition. In this case, the qualification is recognized by the Ministry of Spanish Education in coherence with EEES. In this case, it is about the degree of Children's Education Teaching.

Summing up, we can see the task AN1.2 in the following chart:

PRODUCT	DEFINITION OF THE PRODUCT IN THIS PRACTICAL CASE
Qualification	Official diploma of Children's Education Teaching

Table AN1.2: To define the class of demand of the Qualification

AN2. Identification of actors

AN2.1. To identify the profiles of the academic, technical and administrative staff

As during the good practice 1, the educator's profile must complete four axis: Pedagogy, Inclusive Education, E-learning, and Accessibility As a matter of fact for this case, the professor of the subject is a specialist in all these areas.

GP6.AN: For the virtual tutoring, a good aid would be having intern students who are supporting the teachers, especially as the case with high number of students to look after.

Finally, it is essential to highlight the administrative personnel as important actors of the educational process.

Summing up, we can see the task AN2.1 in the following chart:

PRODUCT	DEFINITION OF THE PRODUCT IN THIS PRACTICAL CASE
Profile of the educator	- Pedagogy. - Inclusive education. - E-learning. - Accessibility.
Profile of the technical personnel	- Technical crew of CEVUG (Center of Virtual Learning of the University of Granada) with own profiles of teaching design, graphic design, computer technician, etc. - Coordinator of the certification: Professor of the certification, professional experience and capacity of direction and coordination. - Supporting intern to the certification teaching: computing knowledge, handling of platforms and proper university studies level.

Profile of the administrative personnel	- Enrollment. - Troubleshooting on enrollment.

Table AN2.1: To identify the profiles of the academic, technical and administrative staff

AN2.2. To identify the interested parties

Firstly, the profile of the University of Granada, which is the main and most interested institution in the benefit of subjects, as the ones introduced herein, can be summed up, addressing the following issues.

- It is a public university.
- It serves more than 60,000 students, with almost 6,000 professors.
- Its target is quality and innovation in teaching.
- Investigation is the core portion of its activity.
- Cooperation to development is constituted as an interest issue for the university.
- TIC teaching and investigation are core portions for the university.

Secondly, the interested organization in this subject are specifically schools of Children's Education. Their interest is due to the students must do an internship in a school during the time the subject lasts. The profiles of these schools and professionals are related to the commitment with tutoring the university students, and being able to provide assistance to them when they carry out the internship report.

Summing up, we can see the task AN2.2 in the following chart:

PRODUCT	DEFINITION OF THE PRODUCT IN THIS PRACTICAL CASE
Profile of the institution where the project is carried out	University of Granada: Public university with teaching and investigation based upon excellence.
Profile of institutions to carry out an internship based on the subject	Public and private schools in Children's Education, Special Education Centers and Associations with disables people: Good willingness, commitment on tutoring.

Table AN2.2: To identify the interested parties

GP7.AN: With the purpose to guarantee the internship of the subject by the students, it is convenient to establish collaboration agreements between the cooperation entities and the University.

AN2.3. To identify profiles of the students

The students of this blended subject are students of second course of the degree of Children's Education Teaching. There is possible to have students with some kind of

disability, which has to be taken into account. The previous demanded requirements to these students are:

- Handling basic computing software: office, platform handling, e-mail, etc.
- Psycho-pedagogic bases of learning.
- Knowledge over General Didactic.

Summing up, we can see the task AN2.3 in the following chart:

PRODUCT	DEFINITION OF THE PRODUCT
Profiles of the students, mentioned in the foregoing requirements.	Handling of software and basic psycho-pedagogic knowledge.

Table AN2.3: To identify profiles of the students

AN3 Definition of objectives

The ESVIAL Guide sets up three types of objectives:

AN3.1. Formulation of strategic objectives (long term)

In our case, the strategic objectives are able to be identified are:

- Achieve a repository of materials to be enriched every year. It will be highly important in education.
- Achieve incorporation of accessibility progress around the experience obtained each year.
- Establish collaboration agreements with the educational institutions where the students can do their internship of the subject.

GP8.AN: The preparation of the strategic objectives allow considering the subject in a long term, as well as to set up the annual strategies in an innovation process.

AN3.2. Formulation of strategic objectives (medium term)

Having in account the overview framed by the strategic objective, in this practical case, we propose to achieve the following objectives under medium term:

- Promote the quality improvement in the pedagogical and technical areas, especially in the production of audiovisual resources.
- Update and apply the improvements in the didactic materials, and incorporate new ones.
-

GP9.AN: It is not convenient to set up too many tactical objectives. Education is an improvement process year by year.

AN3.3. Formulation of operational objectives (short term)

- Build high-quality educational materials.
- Start the application of principles and techniques of accessibility to didactic materials.
- Achieve that all students have a center where they can do their internships.
- Create learning units that expose the content, activities and evaluation of the subject.
- Create and layout the digital material for their implementation in the Web platform.
- Carry out tests of the didactic materials that are being built, in order to verify their quality and accessibility.
- Teach the subject to the enrolled students.
- Evaluate the entire process.

GP10.AN: In order to ease the attainment of the operational objectives, it is convenient to have a registration with a list of the most urgent objectives that must be implemented immediately, and another with those are observed as necessary. The time for that would be scheduled, as well as the incorporation method to the course.

Good Practices conducted in the Process of Framework Analysis (AM)

The objective of this process is to identify the framework and context of a virtual accessible educational project, as well as its planning. In regard to this subject and this certification, it is about to analyze the aspects such as the internal and external context is taking place, the training of the professors, infrastructures, barriers, etc.

AM1 Analysis of the external context

AM1.1. To analyze the conditions according to the ruling framework at the political-educational environment.

From the politic perspective, Spain is in a transformation process toward the European Higher Education Area. Even though, such area was established since 2010, we still can define the current moment as a progressive, learning, or transformation one of many educational and administrative practices. http://www.eees.es.

From the legislative perspective, there is also the necessity to have in account the legislation in matter of University Education, which properly leads all the processes and which is soundness enough. http://www.boe.es/diario_boe/txt.php?id=BOE-A-2001-24515.

On the other hand, it is also necessary to highlight the broad legislation and regulations over the regular accessibility and the web accessibility. (Hilera and Hernández, 2013). At the same time, there are external favorable conditions of the political-education area, which are given by the mobility programs of the European Higher Education Area and the necessity the students feel in benefit of the blended learning.

Summing up, we can see the task AM1.1 in the following chart:

PRODUCT	DEFINITION OF THE PRODUCT IN THIS PRACTICAL CASE
Catalog of legal requirements, applicable to the educational and training environment, including those related to e-accessibility, disability, and inclusion.	- EEES http://www.eees.es. - Spanish University Legislation http://www.boe.es/diario_boe/txt.php?id=BOE-A-2001-24515. - Regulation on accessibility in the virtual education: Hilera and Hernández, 2013)

Table AM1.1: To analyze the conditions according to the regulatory benchmark in the politic-educative ambit

GP1.AM: In the course of the Analysis of the external context, it is recommendable to review the national legislation in the university education, the definition of the university educational policy, and the regulation over accessibility of the virtual education.

AM1.2. To analyze the economic and social conditions

In this practical case, we can identify as external economic restriction, the possibilities to access to computers and internet, properly adjusted to the necessities of the users. Many students have to live beyond their domicile. Some of them have difficulties of internet access. Therefore, it is convenient to have the resources of the Faculty, available to those who may need them.

Summing up, we can see the task AM1.2 in the following chart:

PRODUCT	DEFINITION OF THE PRODUCT IN THIS PRACTICAL CASE
External economic restrictions that may affect	Difficulties on the computer and internet access duly adjusted.
Physical and technological barriers that may affect an inclusive education.	None. There are good conditions, also, there are mechanisms that resolve those that may appear.
Catalogue of calls for support in the accessible virtual education (government, associations of entrepreneurs, etc.), including those for disabled students.	There is plenty information circulating by collective mail, and there are centers within the university and the faculty, in charge of supporting the students who may need it.
Catalogue of kind of social aid for students (including those for disabled students).	Idem.

Table AM1.2: To analyze the economic and social conditions

GP2.AM: It is convenient to have supporting centers available for people with Special Educational Needs. These groups may be formed over aids, doubt and problem resolution.

GP3.AM: It is convenient to secure the equipment availability at the computer classrooms the centers may have.

AM2 Analysis of the internal context

AM2.1. To analyze the business model and the organizational and institutional structure

This subject teaching and certification should be integrated to the structure of public university, uppermost in Spain. It is the first blended subject of the degree of Children's Education Teaching. Therefore, it provides innovation to such degree.

The involved departments are: Department of Didactic and Educational Organization that is responsible of the knowledge area of teaching by the professors; the Virtual Teaching Center of the University of Granada that provides training and support in the Moodle platform handling; and the Center of Assistance to Disabled People, both at the center as at the university, at core level.

The accessibility policy in the institution does exist and it is favorable to provide assistance to disabled people at the institution. Such assistance is translated in plans, centers and actions.

Summing up, we can see the products of the task AM2.1 in the following chart:

PRODUCT	DEFINITION OF THE PRODUCT IN THIS PRACTICAL CASE
• Description of how the accessible virtual education action is integrated within the model of institution business, highlighting the added value and benefit for the institution.	- Structure of the Public University. - Provides, as specific benefit, innovation to the Degree because it is the first blended subject.
• List of units or departments that are involved in the accessible virtual education action.	- Department of Didactic and Educational Organization - Center of Virtual Education in the University of Granada - Centers of assistance to disabled people
• Organizational proceeding to advance an accessible virtual education action at the institution.	- The subjects and curricular load of the teachers by departments. - The departments are in charge of the tailoring of teaching guides. - Specialists commission are integrated.

	- These are revised by the certification coordinators and then, are integrated within the education project of the certification. - ANECA (National Quality Assessment and Accreditation Agency) evaluates them for their accreditation. - CEVUG calls for blended subjects. - A training course is carried out. - The blended subject starts functioning in Moodle.
• List of actions to advance an accessible and inclusive virtual educational experience at the institution that have been successful.	- Calls for meetings. - Prepare templates for the teaching Guides. - Prepare documents to send and receive. - Design, develop, and evaluate a training course. - The subject starts functioning in the platform. - Provides support and maintenance.

Table AM2.1: To analyze the business model and the organizational and institutional structure

GP4.AM: The accreditation on the certification given by a national agency provides quality level to the entire process. It is convenient to consider that the accessibility will be assessed and accredited.

GP5.AM: It is very important that the accessibility policy in the institution does exist and be favorable to provide assistance to disabled people at the institution. Such assistance would be translated in plans, centers and actions. This policy assists to all certifications and subjects.

AM2.2. To analyze the competences/qualifications and availability of the template resources

Education and competencies of the professor of this subject is the proper one. Especially, he/she needs to have competencies in the four mentioned axis: Pedagogy, Inclusive Education, E-learning, and Accessibility

Likewise, any template and services, both administrative and technical, have the needed training. There are communication ways to provide services of maintenance and troubleshooting.

Summing up, we can see the task AM2.2 in the following chart:

PRODUCT	DEFINITION OF THE PRODUCT IN THIS PRACTICAL CASE

• Catalogue of needed functions that must be found in the template	- Didactic planning - Curricular development (face-to-face and on-line tutoring) - Curricular evaluation - Instructional Design - Computer Technician
• Catalogue of profiles duly detailed (according to competencies and qualifications) of the teaching, administrative and technical personnel that is necessary to carry out the accessible virtual educational action.	Educator with competencies in the four axis: Pedagogy, Inclusive Education, E-learning, and Accessibility Technical: (proper competencies) - Technical crew of CEVUG (Center of Virtual Learning of the University of Granada) with own profiles of teaching design, graphic design, computer technician, etc. - Coordinator of the certification: Professor of the certification, professional experience and capacity of direction and coordination. - Supporting intern to the certification teaching: computing knowledge, handling of platforms and proper university studies level. Administrative: (duly qualified, with quality controls) - Enrollment. - Troubleshooting on enrollment.
• List with the availability of the teaching, administrative and technical personnel that may be necessary.	- 1 Senior Professor (subject of 6 biannual credits, 6 hours of tutoring). - Technical crew of CEVUG - Service of Secretary

Table AM2.2: To analyze the competences/qualifications and availability of the template resources

GP6.AM: It is important to get the qualified template ready for the success of a virtual educational project.

AM2.3. To analyze the technical resources available and the infrastructure conditions and existing obstacles.

The Virtual Educational Center arranges the necessary technical resources to carry out this project and many other projects of the University of Granada.

Summing up, we can see the task AM2.3 in the following chart:

PRODUCT	DEFINITION OF THE PRODUCT IN THIS PRACTICAL CASE

• Catalogued of the technical resources duly detailed (hardware and software) needed to teach the accessible virtual educational action	- Computer - Server - Moodle Platform - Free acquisition software - Software granted by CSIRC (Center of Computing Services and Communication Networks)
• List of available technical resources	- All of them are available.
• Physical and technological barriers of the institution that may affect an inclusive education. *Example: Limits of accessibility of the LMS platform of the virtual campus*	- Non-accessible platform

Table AM2.3: To analyze the technical resources available and the infrastructure conditions and existing obstacles.

GP7.AM: It is important to get the necessary technical resources ready for the success of our virtual educational project.

To obtain the necessary information in the external and internal context analysis SWOT technique can be an important aid. In our case, this analysis remains in the following manner:

Strengths (Internal)	**Weaknesses (Internal)**
- There are no physical, nor technological barriers. There are good conditions, also, there are mechanisms that resolve those that may appear. - There is plenty information circulating by collective mail, and there are centers within the university and the faculty, in charge of supporting the disabled students. - Public prestigious university. - Teaching career with specialization in Pedagogy and Accessibility. - Support of a Virtual Teaching Center - There is supporting culture to the teaching innovation - Some templates have been prepared for the adjusted teaching Guides to the EEES. - There is high-qualified teaching, technical, and administrative personnel. - All the necessary technological resources are available.	- Difficulties for some of the students on the computer and internet access duly adjusted. - The Virtual Educational Center is distant; it is a center for all the university. - Group working is a non-promoted culture. - It is the first blended subject.
Opportunities (External)	**Threats (External)**
- Belongs to EEES - Proper university legislation - Proper regulation on accessibility in the virtual education: - Support of the ESVIAL partners - Synergies with other projects.	- Lack of knowledge and sensibility toward inclusion and virtual education.

Table. SWOT analysis, carried out in relation to the blended subject

Conclusions:

- It is the first blended subject in this degree; however, the institutional supporting culture to the innovation encourages it to dear in innovation of other subjects in the degree.
- It is convenient to set up improvements gradually, thus some objectives can be achieved every year.
- Receive support from internal services and external collaboration to improve the subject.

GP8.AM: Within the SWOT analysis it is important to plan actions of the taken conclusions that allow the reduction of weaknesses and to take advantage of the strengths.

AM3 Analysis of the target group

AM3.1. To analyze the socio-cultural and demographic factors of the target group of students

The geographical profile is Spin and Europe.

The demographic profile can be synthetized as follows: Age: 18 - 23 years of age, although, there are some older. Gender: male, and most of them is female. Social-economic level: any class. Educational level: High school and other certification of Professional Education in some cases Description of the type of disability: visual, hearing, and motor: Motor and affective.

Summing up, we can see the task AM3.1 in the following chart:

PRODUCT	DEFINITION OF THE PRODUCT IN THIS PRACTICAL CASE
List of factors of the students (learning culture, motivation, gender, age, preferences, frequently used technology, frequency and type of websites 2.0 that are used, social networking, etc.), especially those related to the disabled students, if they have some incidence when learning.	- Young people between 18-23 years of age, most of them are women - In general, they have calling and motivation due to the content of the subject. - Good handling of technologies. - Most of them have high school studies, but some of them have professional education.

Table AM3.1: To analyze the socio-cultural and demographic factors of the target group of students

GP9.AM: It is convenient that the identified factors over the target group be contrasted through interview in tutoring to individualize the needs of each person, and in our case, of the class group.

AM3.2. To analyze the skills, qualifications and previous competences required from the students

Just as it was stated in AN2.3, the demanding previous requirements to the students are related with the basic software handling: office, platform handling, e-mail, etc. Psychological-pedagogical bases of learning and knowledge over General Didactic. Definitive, own competencies and knowledge about the certification, according how previous courses were addressed.

Summing up, we can see the task AM3.2 in the following chart:

PRODUCT	DEFINITION OF THE PRODUCT IN THIS PRACTICAL CASE

Catalogue of the students' groups profiles, including pre-requirements of access, more detailed in AN2.3. Example: competencies and technical previous knowledge.	Handling of software and basic psycho-pedagogic knowledge.

Table AM3.2: To analyze the skills, qualifications and previous competences required from the students

GP10.AM: Although most people handles computing systems, sometimes, it is convenient to find out in an individual and deeper way, which is the real situation in order to help them.

AM3.3. To define an information model to express the needs and preferences of the student

This model will be carried out through surveys and interviews with the students. Some of the dimensions that may be taken into account are: Preference by text type, preferences by activity types, needed adaptations in evaluation tests, etc. With this information, typologies of students would be attempted in order to offer more effective attention.

Summing up, we can see the task AM3.3 in the following chart:

PRODUCT	DEFINITION OF THE PRODUCT IN THIS PRACTICAL CASE
Useful information model when a student signs in in a course, in order to obtain information about his needs and preferences in regard the presentation and structure of information, control mode of the devices and types of accessible content. (More detailed than AN2.3).	Survey to find out dimensions about preferences. Interview to know with more details, those preferences and needs.
Examples of information records according to target students' profiles (type of students).	Typologies of students with approximation: Students with preferences of type PDF, preferences of schemas of Power Point type, needs of subtitles with videos, etc.

Table AM3.3: To define an information model to express the needs and preferences of the student

GP11.AM: Additionally to the preferences, the most important issue are the needs of disabled people with the purpose to carry out the pertinent curricular adaptations, both for face-to-face as on-line courses.

AM4 Temporal and budget planning

AM4.1. To elaborate the temporary planning with the evaluation and adaptation cycles that are required

The life cycle will be used, which was stated in the introduction of this chapter. The purpose is to use it to carry out evaluations and accurate adjustments to the subject. The courses 2012-13 and 2013-14 have been taught already.

The planning to follow for the following courses, approximately, will be:

- January-February: Carrying out those detected changes in the previous course.
- March-May: Development of the course, taking notes of the improvements are seen focused student-centered.
- June-July: Final evaluation. Conclusions. Improvement plan.

GP12.AM: It is important to carry out a planning for the registration and incorporation of the improvements to the subject.

AM4.2. To elaborate the budget planning: It is not accurate.

AM4.3. To establish the contractual restrictions: It is not accurate.

Good Practices y conducted in the Process of Conception and Design (CD)

With this process it is tried to define and design the didactic and technical elements of a virtual accessible educational project. In this case, the Teaching Guide elaboration has special importance, especially on the subject that will collect all the elements of the curricular design and the list of Didactic Units. It highlights the proper development of the units, as well as the accurate activities that have to be carried out by the students in order to achieve a meaningful learning. This process is divided in 6 activities that will be developed in this blended subject, which will be developed as follows:

CD1. Definition of educational objectives and contents from the detected needs

CD1.1. To define the accessible teaching guides

A complete Teaching Guide has been carried out following the ESVIAL and the institution directions, this is exposed as follows:

Teaching Guide of the Course, following the ESVIAL Guide

Data of the Subject

Name of the Subject	Attention to Diversity in Children's Education
Code	258 11 26
Certification	Degree in Children's Education
Study Plan	2007
Center	Faculty of Education Sciences
Type	Obligatory
Academic Year	4th. Semester
Language	Spanish
Academic Credit/ECTS Credits	6 ECTS Credits
Hours/ECTS Credits	150 working hours of the student/6 ECTS Credits
Total working load (hours)	150 hours lasting (6 ECTS Credits) in 16 weeks (4 months). Academic load of each Unit: 1 credit = 25 hours. The course will have the following characteristics: Phase on-line (40% and 60 hours): Face-to-face phase (60 % and 90 hours): Final work (% and hours): It is included

Data of the Professor/Tutor

Responsible Professor	Antonio Miñán Espigares
Department	Didactic and Educational Organization
Area of Knowledge	Didactic and Educational Organization
Telephone/Cellphone:	0034958249627
E-mail	aminan@ugr.es
URL/WEB	http://www.ugr.es (with identified access)
Profile of the educator	Senior Professor of the University

3. Description of the Subject

Fundamentals or Educational Intention

The subject of Attention to Diversity in Children's Education address strategies that must be used for a response to all needs and interests that may appear in the classroom. Any professional in Education must know methods to provide attention to

diversity. It will prevail in any circumstance. Homogeneity is impossible, everybody is different one to another. In the cases with specific needs or with disabilities, it is prominent to highlight the way to organize the classroom, which methodological strategies will be used to provide attention to the diversity, and how to solve punctual problems that may arise.

Curricular Location of the Course

This subject comprises the module: LEARNING DIFFICULTIES AND DEVELOPMENT DISRUPTION within the certification of the degree in Children's Education. It is placed in the fourth semester, 2nd course. 6 credits correspond to it. It is an obligatory subject.

Who is it intended for?

Even though pre-requisites are not needed, this subject is intended for students who study second course of Children's Education Teaching. They tend having basic knowledge related with the contents of the matter and basic computing knowledge that become necessary. As of course, what they have learned from basic subjects in previous semesters.

Technical Requirements

- Education: First course of Teaching
- Hardware: Computer PC
- Software: Office, video player, etc.

Structuring of the course

Objectives:

- Introduce the students in nature and terminology of attention to diversity.
- Know the organism of basic knowledge about concept, fundamentals and conceptions of inclusive education.
- Acquire a type of knowledge, critical and reflexive, about different conceptions that have been setting up and evolving the attention to diversity throughout History.
- Know the manner how the different possibilities of the current Educational System will be fixed when proper educational responses are offered to the different needs of the students.
- Know which are the current performing and investigation lines related to the educational movement in the diversity.
- Know different performing models of teaching, guided to provide proper responses to diversity within the students.
- Go in depth and fund the general knowledge of planning and didactic programming to enable the processes of curricular adaptation.
- Know types and level of curricular adaptation.
- Understand the adaptation processes of the didactic units in its different elements and aspects.

- Design processes of adaptation of teaching for specific situations, applying different models, principles, and intervention focus.
- Select and apply designs, techniques and instruments of proper education attention to the diversity of the students.
- Use documentary and information sources related to attention to diversity.
- Establish personal, functional and material organizational strategies that provide response to educational attention to the diversity.
- Being aware of the own beliefs, feelings and values in regard to education and diversity situations.
- Acquire an attitude of positive opening and value on diversity and human differences.
- Foster a critical and engaged position in regard to education in and for the diversity of students, enabling the dialogue, the opinion exchange and discussion about different proposed cases.
- Value education as an additional resource of the democratic participation, civic education, human development, and social emancipation.

- Develop its work as ethical commitment toward itself and toward others.

GP1.CD: When elaborating the Teaching Guide, it is recommendable to incorporate the structure of the subject or blended course, relating contents, web resources, activities, academic load, and evaluation percentage.

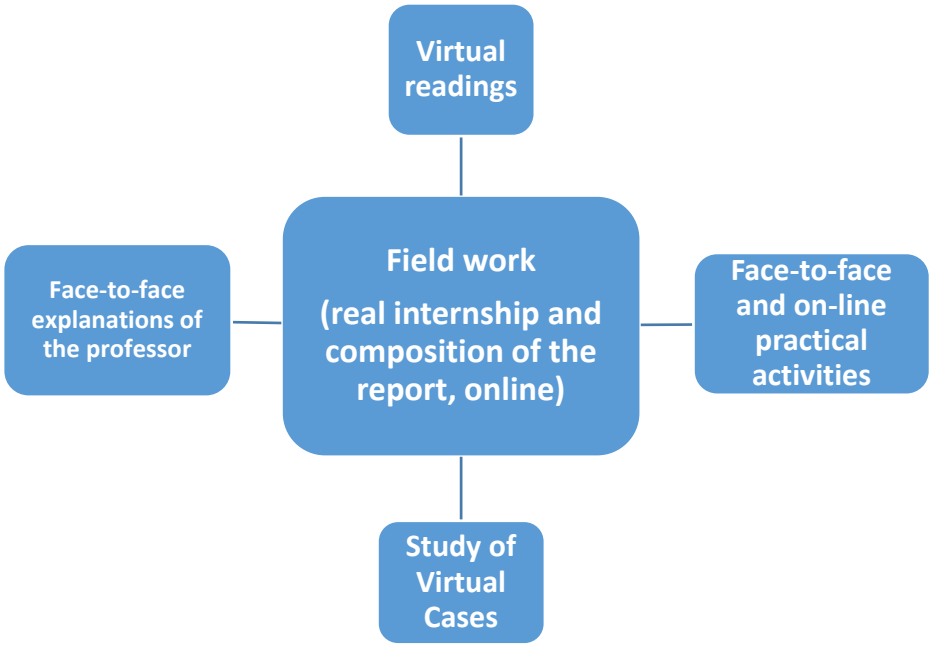
Obviously, this process must be considered by the professor, offering the corresponding individual consultancy. It is like the field work interacts with each of the rest of methodological elements. Graphically, we can see that in the picture 3.3:

If the ultimate purpose of learning is generalization and meaningful learning, then, it is about creation of structures between new information and previous ideas. It is a continuous readjustment and rebuilding process of both sources. This methodological, on-line and face-to-face process empowers the purpose.

GP2.CD: An important key in blended learning is coordination between face-to-face and on-line areas, in a manner the student relates in his/her learning process what he has carried out in one part, in combination with the other.

CD1.2. To formulate the objectives: There are twenty didactic objectives hosted in the teaching Guide.

CD1.3. To define the competences to be obtained by the student: The general, specific and transversal competencies also appear in the Teaching Guide. As follows these can be found, at the same time that these comprise the fourth portion of the Teaching Guide:



Picture 3.3: Interaction between different methodological elements.

4. Qualifications: competencies, skills, and content

Competencies

GENERAL COMPETENCIES

- CG1. To know the objectives, curricular contents and evaluation criteria of Children's Education.
- CG3. To design and regulate learning spaces in diversity context that obey specific educational needs of the students, as well needs of gender, equity and respect to the human rights.

SPECIFIC COMPETENCIES OF THE CERTIFICATE

- CDMB 7 To identify learning difficulties, cognitive dysfunction, and those related to attention.
- CDMB 8 To know how to inform other special professionals to address the collaboration of the center and the teacher when assisting special educational needs that arise.
- CDMB 9 To acquire resources to favor the educational integration of students with difficulties.

TRANSVERSAL COMPETENCIES

Instrumental competencies:

- Capacity of abstraction, analysis, and synthesis.
- Capacity to organize and schedule time.
- Capacity of verbal and written communication.

- Ability when using information technology and communication.
- Ability to search, process, and analyze information from different sources.
- Capacity to identify, set up, and resolve problems
- Capacity to apply knowledge in the practice.

Interpersonal competencies.

- Ability to work in an autonomous way.
- Value and respect of diversity and multi-culturalism.
- Social responsibility and citizen engagement.
- Ethical engagement.
- Critic and self-critic capacity
- Investigation capacity
- Creative capacity

CD1.4. To identify the topics/subjects

GP3.CD: The competencies are selected from the title, which selected the white book of Children's Education Teaching. It is convenient having a reduced number, only those that will be useful directly within the subject.

CD2. Definition of techniques, teaching model and inclusive methodology

CD2.1. To define teaching models that guarantee the accessibility and inclusion

Case studies will be provided, as well as internship and studies of the text topics and audiovisual material. In the future, record of classes will be added. It is important to progress in the accessibility of materials.

GP4.CD: Methodology, such as face-to-face and on-line model, have to be varied and active, keeping coherence within.

GP5.CD: It is convenient to incorporate audiovisual recordings of the face-to-face classes, so the student may review it. Also, these will be useful for those who cannot attend to class.

5. Methodology

Learning platform

LMS MOODLE. CEVUG

General mechanic of the course

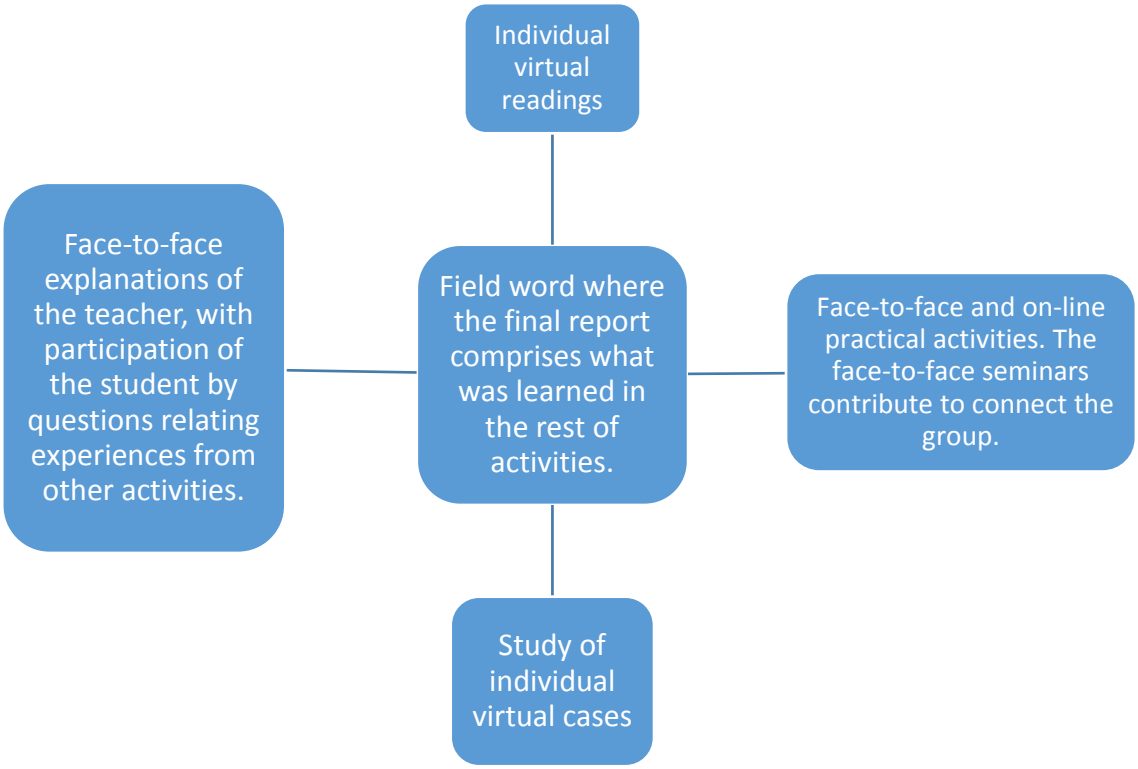
The course is organized in 6 units or topic, corresponding weeks to each. Each term of 3 weeks, the theoretical content of a topic will be developed, as well as practice per topic and a case study. The total of case studies will be 4.

Along the subject, the student shall carry out a field work. It is within weeks 13 - 15. The journal and report from students about their case study will be uploaded in the platform.

CD2.2. To establish the settings for inclusive learning

We consider a learning environment as "the group of activities, resources, and methods that reflect a learning unit or lesson" (Koper and Olivier, 2004). Moreover, within these, the roles, activities, resources, and tools are defined. The proposed activities in our Teaching Guide are articulated from the Moodle platform. It happens through organization of relationships and roles that the students must comply.

In our case, we can identify the learning scenarios through the following schema in picture 3.4. These can be considered as learning scenarios:



Picture 3.4 Learning scenarios schema

Concretizing each of the prior activities, the learning scenario can be achieved. It is necessary to include forums, e-mails, and face-to-face tutoring.

CD2.3. To identify the activities to be made

In this task is where the didactic units and the accessible materials to be used are carried out. In our case, we expose general ideas we have used in the didactic units.

Didactic resources and materials

The main materials to be used within the course will be:

On-line content: The on-line material study will be offered in different formats: Word, PDF, video and PowerPoint.

Resources for practical works, whether face-to-face or on-line ones. The statements of the practical work will be offered (internship of case study), as well as supporting reading to carry out the practice, providing the technical requirements the student needs.

GP6.CD: It is convenient to incorporate short videos with concrete working purposes. These tend to be well-accepted for the students, especially in a subject with a blend of cognitive and affective areas.

Catalogue of activities

The subject will have individual activities. Additionally to the three referred ones: study of the topics and exam, practices and case study, as well as field work, the student shall have to participate in the forum to debate about the videos or arose topics throughout the development of the classes. The communication tools are in the own platform and are carried out with office.

CD3. Definition of the organization and technical requirements that guarantee the accessibility and inclusion

CD3.1. To define the role, tasks, responsibilities and rights of the actors in the inclusive educational setting

Each of the activities of the subject will be explained plenty of clarity. Possible role, tasks, responsibilities and rights of the actions at the inclusive learning scenario will be defined for each activity. Per instance in the working field. It represents a very important activity to acquire competencies to attend diversity properly in the Children's Education classroom.

They are explained that this is a high-assessed activity in the subject because it cooperates with learning of the future teacher of children. It is about an activity within a subject that attempts to enrich the student education through examples in the practice and what he studied in the theoretical part. It is explained through a tutorial. Its objectives are:

- Have contact with the class.
- Identify strategies to assist to diversity.
- Begin investigation through case study.

- Share and contrast strategies that were found in seminars.

GP7.CD: It is convenient to plan explanations of each of the activities and learning scenarios by adding conceptual maps or processes.

CD3.2. To define the place and time for learning

A calendar is organized. It is filled with face-to-face sessions and the dates of delivery of practical activities and forum participation. Likewise, the work field will be included, following a similar model:

PROGRAM OF ACTIVITIES							
First four-month period	Topics	**Face-to-face activities** (NOTE: Modify according to teaching methodology that is proposed for the subject)					
		Theoretical sessions (hours)	Practical sessions (hours)	Expositions and seminars (hours)	Collective tutoring (hours)	Examinations (hours)	Etc.
Week 1							
Week 2							
…							
Total hours							

Table CD3a. Criteria of evaluation of face-to-face activities

PROGRAM OF ACTIVITIES					
First four-month period	Topics	**Activities on-line** (NOTE: Modify according to teaching methodology that is proposed for the subject)			
		Individual tutoring (hours)	Individual study and work by the student (hours)	Group work (hours)	Etc.

Week 1					
Week 2					
…					
Total hours					

Table CD3b. Criteria of evaluation of activities on-line

No doubt the learning place is at the classroom, such as exposition class as in the seminars, face-to-face, and in the platform of virtual mode.

CD3.3. To identify the mandatory and optional technical requirements

Previously the needed technical requirements were explained, both hardware and software, with assistance of CSIRC and CEVUG.

GP8.CD: The success of our teaching and quality teacher's consideration have to be found when improving the education of the student. We have to fulfill requirements such as good tutoring, high-quality didactic materials, which may be innovative and accessible.

CD4. Design of accessible multimedia resources and communication systems

CD4.1. To select and to describe the aspects of the multimedia resources (web, video, audio...) and accessible communication systems to be used in the inclusive educational process

There are plenty resources to use in the subject: videos, electronic links, web references, bibliography, etc. There is continuous work to make them accessible. As an example: the student receives a series of electronic links related to the subject:

http://centros5.pntic.mec.es/ies.valentin.turienzo/htm/acns.htm	Non-meaningful curricular adaptations
http://perso.wanadoo.es/e/jcpintoes/	Web about childhood and family
http://organizaciondecentros.wikispaces.com/PLAN+DE+TRABAJO+INDIVID	Individualized working plan
http://www.mercadis.com	Computing system addressed to the
http://www.redined.mec.es/	Educational data base

CD4.2. To select and to describe the tutors, moderators and instructors of the student

The work is fully carried out by the teacher of the subject, expect when the technical team supports it. See Teacher's Guide.

CD5. Design of inclusive evaluation tests

CD5.1. To specify the evaluation tests to be made

The platform offers step by step, a detailed description of the practices according to model, and the questions for the written test are being prepared. Since the beginning, the evaluation criteria to be used shall be explained.

The Teaching Guide has the following references about evaluation:

6. Evaluation system

Evaluation of the course

The proportion in regard to the topics was expressed in the previous content table, stating that each of the 6 topics of the syllabus will have 16.66%, including the practices that are indicated in such chart.

The percentage by type of activity will be the following:

25% Field work
50% Exam of all units
25% Practice and Case study

100% Total

Evaluation per unit

Percentages exposed in the previous point (25, 50, 25)

Evaluation of Projects (Practical work)

Rubric for activities

- Presentation
- Deepening
- Coherence (theory-practice relation)
- Quality

Rubric for forums

The final grade will receive a global contribution according to participation in forums.

CD5.2. To validate the evaluation tests that were designed

It is not needed in our case.

CD6. Definition of maintenance functions

CD6.1. Define the process to carry out the didactic and methodological performing that secure the stability of accessibility and inclusion.

Previously described.

CD6.2. Define the process to carry out the content performing that secure the stability of accessibility and inclusion.

Previously described.

CD6.3. Define the procedure for the technical maintenance that secures the stability of the accessibility

Previously described.

Finally, it is necessary to add an activity in the conception and design process. It is referred in the Bibliography that must appear in the Teaching Guide.

CD 7. Bibliography

- Basic Bibliography
- Complementary Bibliography
- Web resources

As an example, in our case appear the following:

AINSCOW, M. (2002) Development of the inclusive schools Ideas, proposals and experiences to improve the educational institutions. Madrid: Narcea.

ALDÁMIZ-ECHEVARRÍA, M.M. ET. SEQ. (2000). ¿Cómo hacerlo? (*How can it be done?*) Propuestas para educar en la diversidad. (*Proposals to educate in the diversity*). Barcelona: Graó.

ARDANAZ, L. (2004) La escuela inclusiva: prácticas y reflexiones. (*Inclusive school: practices and reflections*) Barcelona: Graó.

ARNAIZ, P (2005) Atención a la diversidad (*Attention to diversity*) Curricular program. San José, Costa Rica: Universidad Estatal a Distancia (UNED).

Good Practices conducted in the Process of Development and Production (DP)

The objective of the process of Development/Production is to produce the teaching elements of a virtual accessible educational project according to the design produced. In this process, the teacher, aided by the technical team, shall, basically, organize all the resources, plan by a diagram the production and update, carry out a guide for the production, and test everything he has done.

In this process we use the requirements to make accessible those programs that are commonly used when teaching: Word, PowerPoint, PDF, etc.

Techniques used in CD
- Design techniques of accessible materials.

GP1.DC.: It is recommendable to apply design techniques of accessible material to use with students.

Good Practices conducted in the Process of Implementation (IM)

The fundamental objective of the implementation process is to install and activate the educational resources in a virtual accessible education platform. When implementing the blended subject of this case, we highlight the personalized pedagogic and technical basic support that we define and use with the students.

GP1.IM: Establish a specific centralized center with purpose to support e-learning and teachers of the entire university is a guarantee of quality.

Good Practices conduced in the Learning Process (LP)

During this process the teaching-learning is carried out using the established educational resources. In this section we remark only some of the techniques used in the subject:

- The resources useful to work are introduced and explained face-to-face to the students: theoretical topics in different formats, practices, case studies, guides.
- They also receive clarifications that may be needed in a virtual manner.
- The platform is used, and they are taught to use the elements continuously, such as: calendars, news forums, participation forum.
- They revise the forum and participate, they note the interventions for the final qualification.
- Face-to-face tutoring is also used.
- They receive orientation, face-to-face and on-line mode, in the assignment execution.
- It provides sequence and flexibility to the learning processes.

GP1.PA: During the learning process, tutoring provided to the student is essential. The teacher listens to the student, both face-to-face and virtually, assisting him in his needs.

Good Practices conducted in the Process of EVALUATION / OPTIMIZATION (EO)

Lastly, the process of Evaluation/Optimization is a transversal process, in which all the necessary activities are included to make the evaluation and quality assurance of each one of the previous processes involved in a virtual accessible educational project.

Within the evaluation plan, all the involved elements about accessibility of each of the previous points shall be collected.

GP1.EO: The most important of the evaluation process is to find ways to improve.

References

Bain, K. (2011). *Lo que hacen los mejores profesores universitarios*. Universidad de Valencia.

Europa Press | ELMUNDO.es (2011). España se mantiene como el destino favorito para los estudiantes Erasmus. Actualizado lunes 06/06/2011 15:47 horas. Recuperado de:

Hilera, J.R. y Hernández, R., (2013). Hacia la creación de campus virtuales accesibles. RED. Revista de Educación a Distancia. Número 35.

Hilera, J.R. y otros (Coords.) (2013). *Guía metodológica para la implantación de desarrollos curriculares virtuales accesibles. Proyecto ESVI-AL*. Madrid: Servicio de Publicaciones de la Universidad de Alcalá. Recuperado de http://www.esvial.org/guia/?page_id=73 el 6 de octubre de 2014. http://www.elmundo.es/elmundo/2011/06/06/union_europea/1307367500.html http://www.um.es/ead/red/35

Khan, B. (2001). *Web-Based Training*. Nueva Jersey: Educational Technology Publications.

Koper, R., & B. Olivier (2004). Representing the Learning Design of Units of Learning. Educational Technology & Society. 7(3): p. 97-111.

Llorente, M.C. (2009). *Formación semipresencial apoyada en la Red (Blended learning)*. Alcalá de Guadaira (Sevilla): MAD.

Pallisé, J.S., González, C. B. y Vergés, C.B. (2013). *La semipresencialidad como respuesta a los nuevos retos de la Universidad.* Barcelona: Octaedro.

Varela, C. y Miñán, A. (2013). "Productos de un proyecto educativo virtual accesible". En *V Congreso Internacional sobre aplicación de tecnologías de la información y comunicaciones avanzadas.* ATICA 2013.

Chapter 4 Accreditation analysis of a virtual course – Case study II with application of good practices

In this chapter, an auto evaluation report and its annexes are presented,, which encompasses the accreditation process in the ESVI-AL -- CALED model of an accessible virtual course established as one of the activities of the ESVI-AL Project. Comments, input and assessment will be made on it, with the end of guiding future institutions in the auto evaluation and certification of its courses.

For it these comments will be added in blue and with the GP, Good Practices, initials, as the rest of the chapters of this book.

Auto evaluation Report

1. General introduction.

The instruments to collect information are auto evaluation tools taken from the Auto evaluation Guide of Virtual Accessible Courses, which favor the collection of data and information of the specifically context for the sake of reinforcing the continuous improvement process in the Test Course and in the quality processes of the ESVI-AL Project, which guarantee the preservation of quality and the path to accreditation from CALED.

In the development of this report the systematization of the perceptions surveys will be found, pulled out from the results obtained in the inquiries with the students, teachers, administrative staff and technology.

It is pertinent to note down that the actions for improvement will be projected from the results that come up from the systematization of data of the application of those measuring instruments; (Digital Portfolio) specifically in those topics that do not obtain the realistic aspiration, even so, it is understandable that the remaining factors and their categories must continue being approached, held and strengthened.

A reading is established, which for the most part has a qualitative appreciations of the response of the educational community participating in the course, in some cases consolidating quantitative readings, without unknowing the level of subjectivity that can

be presented in the search for real and coherent readings, on the historical moment of the course and its first version.

2. Brief conclusions of the evaluation

With the aim of introducing the context of the trial course, it is important to know some relevant information about this first edition.

2.1. Origin and amount of students:

Analysis of the origin of the students: Argentina, Bolivia, Chile, Colombia, Ecuador, El Salvador, Spain, Guatemala, Mexico, Nicaragua, Paraguay, Peru, Dominican Republic, Uruguay, and Venezuela.

Students with disability that have taken the course: 80% of the students have a disability.

2.2 Teachers and administrative staff:

- Amount of teachers and tutors.
- Person responsible for the course.
- Platform administrator.
- Instructional Designer
- Persons responsible for quality.

2.3 Analyzed Areas, Sub-areas and Standards

Next, the reflective processes are related to each one of the areas and sub-areas of the auto evaluation, as some contributions according to the collection instruments applied to the educational community that has been involved in the trial Course.

Area 1. Technology

From area 1 regarding the technology that can be diagnosed:

It evaluates the technological availability, performance, capability, certitude, privacy, accessibility, usability/navigability and maintenance, in such a way that the right performance and development of the courses is guaranteed.

The indicators considered in the standards of the sub-areas of accessibility, usability and navigability have been developed taking into account the Web Accessibility Initiative guidelines (WAI) del World Wide Web Consortium (W3C).

In this area, the auto evaluation report and all the documents presented as evidence in the platform were evaluated.

BP1.1. In every process where there is an auto evaluation and an evaluation evenly, there can be variances. These can be bigger in terms of the rigorousness level the analysis of evidences will have. On this account, it is recommended that the required evidences in the accreditation model are provided. For that, examination documents can be used, which will facilitate the correct control previous to the revision of the standards with the purpose of developing examination documents that in the future will be the instruments that evidence the quality process.

BP1.2. For those institutions that have quality management certificates like the ISO 9001 and the EFQM, the analysis of the processes that are common for both standards is recommended, and then attach it to the report, so a generalized synergy can be demonstrated in the standards of institutional quality, in line with the accessible course.

BP1.3. It is recommended to the institution that wants to accredit a virtual course, to make an analysis pointing out the strengths and weaknesses of the institution.

BP1.4. Likewise, in the cases in which they are contributed to the final report made as evidence of the proposals for improvement, it is recommended to have action plans and planning chronograms.

Sub-area 1a. Technological Infrastructure. Standards: 1.a.1.The technological profile of the students is known. 1a.2 the development and the technological resources that are necessary for the establishment of the virtual course are identified, according to the accessible instructional design. 1a.3 the accessible resources in which interaction is carried out in the virtual course are identified.

In the collection instruments it is established that an average knowledge of the technological profile of the students exist, together with the resources they have, making evident that their progress in the course can be limited for not having the right tools or not having the required competences. This implies the possibility of constructing a characterization instrument that does NOT exclude, which will allow to know clearly the profile of the student.

BP1a.1 If the institution that wants to accredit a virtual course does not have handbooks, nor guides for the platform for the service of the student with disability, and has some tools that are not accessible, it is recommended that they elaborate them. But if the institution has handbooks, protocols or induction courses in other areas (Graduate or postgraduate formal education), it is recommended to adapt it to the students in the virtual course to the accredited, and in that way comply with the measuring index.

BP1a.2 If the educative institution does not have emerging policies and assistance standards, it is recommended to organize the inclusive policies for the linkage to the courses. If it has the policies and the standards it is important to adapt it to the accessible virtual informal courses. To have the policy and not adapting it is a synonym of not having it, to adapt it is a synonym of fulfilment.

Sub-area 1.b Availability, performance and capacity. Standards: 1.b.1 the availability of the accessible virtual learning surroundings is guaranteed. 1.b.2 the performance

and functioning of the equipment's and computer systems is guaranteed. 1.b.3 Enough storage capacity is guaranteed.

From the perspective of this sub-area, we can find all the standards included, to the extent of the understanding that the technological infrastructure is designed for an efficient attention to the population that participates in the course, demonstrating with it an adequate technological support. With an added value in the support and accompaniment to teachers and administrators were the equipment and computer systems have a permanent support.

BP1b.1 Even if an institution has included the technological standards, it is recommendable to have the documents that evidence the technological infrastructure of the institution prepared, or the compilation of the protocols, standards or policies the institution has in its computer and support departments.

Sub-area 1.c Security and Privacy. Standards: 1.c.1. The security, integrity and privacy of the guarded documents is guaranteed. 1.c.2 A plan for disaster recovery is included. 1.c.3 The regulations in use with regard of the privacy and custody of personal data is taken into account.

BP1c.1. The institution must guarantee that the regulations in use is complied with according to the security and privacy, thereby it is recommended that the organization established procedures that facilitate its accomplishment.

BP1c.2. The institution can evidence the accomplishment by enclosing the privacy policy to the consent document that is sent to the students, adapting the accessible virtual course that wants to be accredited.

Sub-area 1.d Accessibility. Standard: 1.2.1 The access to every person to the virtual course is guaranteed.

From the technological concept and under the reading of the instruments, if the access to every person to the course is guaranteed, based on the remission of e-mails, permanent support and accompaniment of students.

BP1d.1 The educative institution must guarantee that the platform and the course comply with the standards and indicators of accessibility, as well as the associated pages. That is why, it is urgent and important to give attention to its indicators.

BP1d.2 It is recommended to emphasize to the students the need of having the technological resources indicated in the pre-requisites of the course, as if the condition is not complied with, the student will have problems accessing the course.

BP1d.3 It is recommended to enclose the registration document, were the summoning to students with technological competences, computer tools and guarantee of accessibility to the LMS used must be evidenced.

Sub-area 1.e Usability and Navigability: Standard: 1.e.1 The usability and navigability of the virtual course is guaranteed.

The Trial course is adjusted to the standards of usability and navigability, as they are inside the accessible platform and respect the criteria of construction of ESVI-AL; it is suggested to re-define some tools in its usability and accessibility. Be aware that this is the first version.

BP1e.1 In the cases in which the institution does not have the information at a general level to be accessible, it is recommended to review the criteria of accessibility and inclusive design, not only in the platforms, but also in the advertising banners, a list of databases from libraries, web pages of associated institutions, as for example esvial.org.

BP1e.2 It is valued positively that the institution provides as evidence a favorable external report about the fulfillment of accessibility, usability and navigability of the course. If it does not have one, it can evidence it with an auto evaluation and auto-analysis document made by the information technology area, based on these topics and guaranteed by the centers for inclusion for disabled persons of the institutions.

Sub-area 1.f Maintenance. Standards 1.f.1 The scalability of the equipment and computer programs is guaranteed. 1.f.2 The technical maintenance of the computer systems is guaranteed. 1.f.3 A certain level of technological independence is guaranteed.

Through the collection of instruments, it can be inferred that the equipment and computer programs are only guaranteed for the administrative and academic staff, with the result that the maintenance is efficient and there is technological independence, thanks to the administration of the virtual accessible campus and the support area. The need to characterize the student so he can be benefited appears again.

BP1.f The institution that submits a virtual course for accreditation and does not have scalability, maintenance and technological independence procedures, must elaborate and establish them.

The institution that wants to improve and reach an increased value in the peer evaluation, must take into account the comments proposed by the person Responsible for the course in its report. Thereby, we consider necessary to develop the suggestions,

as well as provide the evidences of the executed actions. This will allow the institution to improve in a future.

BP1.5. Taking into account the comments made previously, it is recommended that the institution improves the points indicated hereafter:

- *To define the technological profile of the students with disability, as it is important for the right development of the course.*
- *It should identify the accessible means by which the interaction will take place in the virtual course, and provide tools to facilitate the learning process.*
- *Analyzing security needs and assure according to the current legislation on privacy and safekeeping of personal data.*
- *Provide sufficient and significant evidence of the points raised.*
- *Implementation of the auto evaluation annex, as element as an improvement element of the points to evaluate.*
- *Develop procedures to guarantee usability and navigability of the course from the first edition.*
- *Develop scalability procedures, maintenance and technological independence, both administrative, teachers and students.*
- *Submit or develop protocols or standards of support to ensure technological support to students and teachers.*

Area 2. Training

From area 2 Regarding training, it can be diagnosed:

Evaluates the availability and implementation of pedagogical training and technical plans which, teachers and students must have to address their role.

Sub area 2.a Teaching staff Standards: 2.a.1 The profile and academic background and skills of teachers teaching the accessible virtual are identified. 2.a.2 The teaching equipment is formed, for the accessible virtual teaching (teachers and mentors). 2.a.2 The profile and academic background of the teacher is established.

From the collection instruments it is established that the standers of Sub area 2, are displayed and met. It is recommended to establish a space in the virtual campus to accommodate the syllabus, or resume the information of the teacher, so the forum is not used to perform this important visibility task.

BP2a.1 The institution that submits a virtual course to an accreditation process, needs to send data and documents relating to teachers. In the event that after reviewed, the accuracy of the information is confirmed, and it is considered that there is a significant lack of evidence, a poor punctuation will be caused.

BP2a.2 The institution must provide evidence of training received by instructors who teach the course, profiles of teachers, as well as performance data and use of teaching tasks.

Sub area 2.b Students Standards: 2.b.2 an admissions process is available for applicants to accessible online course. The training of students with disabilities is guaranteed for use of technological means.

It can be inferred by reading the data collection instruments, that while there are technological resources for enrollment, admissions process are not visible and there are no instruments to ensure training in technological means. As a recommendation from the interaction and accompaniment of students, this invites us to make an assessment of the adequacy of resources and communication strategies that the platform provides and the teacher that guides the course. Part of the planning and selection of didactic and methodological strategies to provide effective and relevant response to individual and collective needs of students, involves description and preliminary analysis of this, because not everyone need help and those who require it, require personalized support.

BP2b. It is recommended to the training institution to be performed an analytical and statistical treatment to the questionnaires answered by the students, since these results allow to develop improvement actions, identifying characteristics and mechanisms of pedagogical intervention, then register and evidence them in the quality process. So, not only worth collecting questionnaires from students, but it is also necessary that they be treated and conclusions are collected; providing evidence of its performance.

BP2. With the comments made in the development of this area, it is suggested how to make improvements as follow:

- *The definition of a teaching plan that allows training to mentors.*
- *The analysis of students collected data, to serve as an element of improvement for future editions, which will facilitate the correction of errors that may have occurred.*
- *Train to teachers in the use of technological means for people with disabilities.*
- *Develop a procedure for admission and selection of students.*
- *Develop a procedure and manual that facilitates training in technical means to students with disabilities as well as a review of materials and tools to make it accessible to students with disabilities, it is recommended to develop reference materials, as manuals or guides.*

Area 3. Instructional Design

From area 3. Concerning to the design process, here is the resume:

The structure, design, content, and methodology used to develop the course is assessed.

Sub area 3.a Relevance of the course Standard: 3.a.1 The relevance of the course in terms of training needs is guaranteed.

The relevance of the course is achieved by infer of collection instruments, however it is recommended to search for the possibility that external tools are also accessible, so it is important to assess the synchronous meeting tools and applications that help in the process of social networks.

This section develops a standard that search to ensure the relevance of the course in terms of training needs.

BP3a.1 The institution that submits a virtual course accreditation and, does not have a market study of the target audience to ensure a lawsuit and a profile of training their preparation, is recommended to elaborate one.

In the event that the course fits into the training plan of a project as ESVI-AL, there would be no need to perform such study.

BP3a.2 It is recommended to the institution that the courses offered for the first time and, does not have a training material review report, its realization is proposed to improve and in successive editions to contribute as evidence. Still, it should be evident that has a standard manual of handling the platform, and a document for the use of technological tools.

BP3a.3 If the training institution does not have a protocol for the implementation of the proposed mentoring plan that includes attention to students with disabilities; preparation is recommended.

BP3a.4 It is important to complement the evidence of the relevance of the course, minutes of meetings that led to the choice of subject, since there lies the claims for which are opt for it.

Sub area 3.b General Guidelines of the course Standard: 3.b.1 Clear, precise and accessible guidelines are issued.

General orientations of the course are able to be visualized, from the training guide, therefore the course is fully accomplished.

BP3b.1 The institution must ensure that the orientation have information concerning the general aspects of the course; in those cases were is not produced, then, it should be develop.

BP3b.2 In cases where lack of information regarding the management of the platform becomes apparent, if is not considered the appropriate disposal guidance manuals or guides or other forms of assistance, it is recommended to the institution to produce such materials.

BP3b.3 It is considered good practice in addition to teaching protocols guide service promise, where the guidelines are evident, as well as newspapers models reported as accessible and permanent communication element.

Sub area 3.c Objectives and powers Standards: 3.c.1 Training objectives of the course are formulated from accessibility and inclusion. 3.c.2 Competences to be obtained by the student are defined

General orientations of the course are able to be visualized, from the training guide, therefore the course is fully accomplished.

BP3c.1 it is recommended to the institution, in regards to the objectives and powers, to provide evidence of the same in both the self-assessment report, and through the portfolio.

BP3c.2 It is recommended to the institution that even if the objectives and powers are clearly defined to achieve a graduate profile, it is important to keep a visible diagnose as evidenced object and is important for the community training. In these cases, it is noteworthy that the assessment given by the participants of the course is decisive.

BP3c.3 It is advisable to include the topics of objectives and powers data collection instruments applied to students in order to deepen the real impact beyond the teaching guide.

Sub area 3.d Contents Standards: 3.d.1 The contents in accordance with the objectives and competencies raised and accessibility principles are established. 3.d.2 The contents of clear, consistent, flexible and adequate accessibility principles are organized. 3.d.3 There are relevant teaching materials available, appropriate to the content and usability guidelines and accessibility.

It is able to detect that the contents are relevant, the instruments also reflect that they are organized in a clear and coherent manner, adjusted to the accessibility standers,

however, some activities and learning process are not accessible from the same used tools and the materials to be developed. Examples as Twitter, Youtube videos without audio or presentations without a description.

BP3d.1 The training institution should review the scores given by the participants, as can be the case that the content count on highly score by participants, however, there are opinions that the contents do not meet the principles of access for all, so you should pay prior to that point.

BP3d.2 It is recommended to the training institution to review training materials, to verify that the contents are consistent and adequate to the different profiles in accordance to the needs, and document the realization to show in the portfolio.

Sub area 3.e Interaction Standard: 3.e.1 Communication among actors through various accessible tools taking into account the context and objectives is encouraged.

It is evident that the interaction in communication promotes all academic actors (teachers, administration and students), however when the interaction is promoted outside of the platform in synchronous applications as Skype, the possibility of accessibility is blurred by its creation structure

PB.3d.1 It is recommended to the training institution, establish a strategy that allows the interaction in planning and preparation of these activities, that aim to work in an individual manner, in the development of such activities, according to the evaluation scheme of certification.

PB.3e.2 The institution is advised to analyze the perception that users have about accessible technology tools (such as email, chat, forum) for private communications and by having a manual for the use of technological tools used.

Sub area 3.f Follow up and mentoring Standards: 3.f.1 Tracking and monitoring activities in the learning process of students is guaranteed. 3.f.2 The proposed plan of inclusive mentoring is established and evaluated. 3.f.3 Orientations are performed to the students continuously.

It is evidenced by the applied instruments to all the actors of the course, follow up, monitoring, mentoring plan and guidance to students, however it is recommended that a protocol is made, for monitoring and support to standardize the processes of inclusion and encourage participation despite gratuity.

BP3f.1 If the institution that submits an accessible virtual course to accreditation, must demonstrate that tracking and monitoring of the activities is ensured. On the cases were the course is taught through a platform, it counts with follow up and monitoring of all activities that the students develop, although evidence needs to be shown, for which it is recommended to have a mentoring plan which considers elements of inclusion, where it has the specified maximum response times and, tools that are used to control and monitor the mentoring. For example promise of services, minutes of meetings with teachers and support staff.

BP3f.2 If the training institution detects frailty to provide follow ups and mentoring to the students, it is recommended to develop a follow up procedure with information, follow up file to teachers/mentors and statistical reports, as well as the evaluation plan of the proposed mentoring.

Sub area 3.g Evaluation Standard: 3.g.1 There is a system of continuous assessment that considers the adaptation of tests according to the characteristics of students.

It is inferred from the instruments that the evaluation system in the course is standardized by the tool, but does not have tests according to student characteristics, since it is not characterized from the beginning at admission and still do not have a protocol for this purpose.

BP3g.1 The institution that submits an accessible vital course to accreditation, must provide evidence that continues the evaluation process has been made for students with disabilities.

BP3g.2 It is recommended to the institution to analyze data from participants that have limitations, the achieve score at the surveys, from which it can be inferred that the assessment process is accessible and usable in the terms required by the standards.

BP3g.3 In those cases were the institution counts with a quality system (CALED), but is not the notarized nor systematic, standardized the systems and, the course evaluation results, it is recommended to build security policies and plan improvements, creating and organizing the pending documents.

BP3. From the discussions made, it is proposed as improvement the following:

- *Establish a procedure to improve the communication between the different actors through accessible tools.*
- *Establish a procedure that guarantee the follow-up and monitoring of the activities of students with disabilities.*

- *Develop a procedure that establishes a mentoring plan to students with disabilities.*
- *Implementing a procedure to undertake guidance to students with disabilities, and to establish a system for monitoring and evaluation of results.*
- *Establishment of procedures defining criteria and tools that facilitate the monitoring of ongoing evaluation.*

Area 4. Services and Support

From area 4 In regards to **Services and Support,** it can be diagnosed:

It evaluates the availability of information and student care for their normal activities.

Sub area 4.a Information Services Standard: 4.a.1 It has the necessary information services accessible to all students.

It is inferred in the instruments reading, that although there is an information service, this is available but limited from the ESVI-AL website, emails are designed to be read by readers and advertisements are made with the standards.

BP4a.1 It is recommended to the institution to demonstrate that has an accessible information service to all students, as well as, to develop manuals and guides adopted by all students, with a download option in different devices and platforms.

Sub area 4.b Attention to the Student Standard: 4.b.1 There is a service to the attention to the student.

The instruments ratified if there is a permanent service student by the faculty and staff of the course, with weekly motivational emails.

BP4b.1 It is recommended to systematize emails, meeting minutes or promises of service protocols that demonstrate the preventive process, proactive or reactive care.

Sub area 4.c Connection Standard: 4.c.1 There are mechanisms and inclusive policies for linkage with various sectors of society.

If there is an ongoing relationship with various sectors of society, guidelines and standards for linking are created, but the policies are not yet visible from the inclusive realities that permeate.

BP4c.1 It is recommended to the institution that submits an accessible virtual course to accreditation, availability of politic mechanisms, inclusive of linkage with various sectors of society, through agreements.

BP4c.2 From the above comments, it is suggested to the institution the following items form improvement in this area:

- *Incorporate the necessary changes to the website of the institution to make it accessible to students with disabilities*
- *Develop a frequently ask section or a forum were technical issues can be resolved.*
- *Develop manuals or guides that facilitates the system use.*
- *Develop an action plan to carry out inclusive policies in various sectors of society.*
- *Build an identifiable document to serve as a reference for agreements or strategic alliances.*

3. Global Assessment and Improvement Proposals

The course that is taken as Practical Course I, in its first version, has a high degree of satisfactory elements in the path of inclusive education, to the extent that was conceived in the womb of inclusive standards that ESVI-AL project from the guidance provided. Furthermore, experts in the field have been involved, thus, handling and mastery. At the same time, all actions have been applied in the teaching area.

The challenge is to provide greater accessibility in external tools, accessible online platform, achieving more focused on instructional design accessible materials and, to use strategies that enable both synchronous and social networks, have the accessible character.

It is important to note that there are some politics, protocols, guidelines and inductions that requires formalized and thereby, provide students a contextualization office, LMS and virtual work.

References

AENOR (2012). UNE 66181:2012, Gestión de la calidad. Calidad de la Formación Virtual. Asociación Española de Normalización y Certificación.

Álvarez, F; Cardona P. (s/a). Metodología para el desarrollo de cursos virtuales basado en objetos de aprendizaje. Recuperado de: http://www.willydev.net/descargas/prev/METODOVIRTUAL.pdf

Chávez, F., Rocha, J., Bañuelos, A. (2013). La accesibilidad como una dimensión de la calidad en la Educación a Distancia. XXI encuentro Internacional de Educación a Distancia. Realizado en México del 2 al 6 de diciembre de 2013.

Chisholm, W.; Vanderheiden, G. (1999) Web Content Accessibility Guidelines 1.0. Trace R & D Center, University of Wisconsin – Madison. Recuperado de: http://www.w3.org/TR/1999/WAI-WEBCONTENT-19990505/.

ESVI-AL (2013). Guía Metodológica para la implementación de desarrollos curriculares virtuales accesibles. Recuperado de: http://www.esvial.org/guia/.

CALED-ESVIAL. (2013). Guía de evaluación de cursos virtuales accesibles.

Herrera, M. (2006). Consideraciones para el diseño didáctico de ambientes virtuales de aprendizaje una propuesta basada en las funciones cognitivas del aprendizaje. Recuperado de: http://www.rieoei.org/deloslectores/1326Herrera.pdf

Pavón, P; Pérez, D; Varela L. (2003). La evaluación en los cursos online. Centro Virtual Cervantes. Instituto Cervantes (España), Recuperado de: http://espacio.uned.es/fez/eserv.php?pid=bibliuned:1464&dsID=n03pavonVE00.pdf

Proyecto ESVI-AL. (2013). Guía metodológica para la implantación de desarrollos curriculares virtuales accesibles. España: Universidad de Alcalá

Rubio, M. J. (2003). Enfoques y modelos de evaluación del e-learning. RELIEVE. Revista Electrónica de Investigación y Evaluación Educativa, v. 9, n. 2, pp. 101-120. http://www.uv.es/RELIEVE/v9n2/RELIEVEv9n2_1.htm

Rubio, M.J., Morocho, M., Torres, J. C., Maldonado, J., Alejandro, J., Ramírez, I. (2009). Guía de evaluación para cursos virtuales de formación continua. Instituto latinoamericano y del Caribe de calidad en educación superior a distancia (CALED). Loja-Ecuador: Universidad Técnica Particular de Loja

Rubio, M. J. (2003). Memoria: Centro Virtual para el Desarrollo de Estándares de Calidad para la Educación Superior a Distancia en América Latina y el Caribe. Universidad Técnica Particular de Loja. pp. 142-156.

Rubio, M. J. et al. (2005). Proceso de Autoevaluación de los Programas de Educación a Distancia basa en el Proyecto “Centro Virtual para el Desarrollo de Estándares de Calidad para la Educación Superior a Distancia en América Latina y el Caribe”. Cuadernillos del trabajo del 1 al 9 y documento introductorio. Universidad Técnica Particular de Loja.

Santoveña, S. (2005). Criterios de calidad para la evaluación de los cursos virtuales. Recuperado de: http://www.ocv.org.mx/contenido/articulos/articulo01_sept2005.pdf

Chapter 5 Accreditation analysis of a virtual course – Case study II with application of good practices

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Introduction

Quality in higher education becomes a point of special interest and relevance in the university reality, being the assessment and quality certification programs and online courses a priority for institutions of higher education.

Auto evaluation becomes a permanent practice of reflection, analysis and research of all aspects of a course; with the active and committed participation of actors, be they: Teachers, staff, students, coordinators, responsible and qualified informants. The aim of auto evaluation is to diagnose strengths and weakness that allow to take decisions for continuous improvement of the quality of the given course.

Auto evaluation report

1. General introduction

This report is the result of the auto evaluation to the first edition of a course, taken as example.

The course is part of training activities of the ESVI-AL project in cooperation among American and European universities and, given by an institution. This course allows in a systematic, progressive and flexible manner, gain the necessary knowledge and skills to manage computers, using as a reference standard, which is the international certification that grants the recognition of having a basic training of computers at a user lever.

The course is entirely online and is developed for six weeks with a total of 50 class hours. It is aimed to people with a medium level of training, that have used a computer and, who wish to demonstrate their skills according to international standard.

In the evaluated edition of the course have participated four teachers and 151 students. The 151 students are disabled students, 118 are blind. In the student population 18 Latin American countries are represented. The four initial teachers were joined by a bind person, once the course started, to support teachers in their tutoring tasks to blind students and these students in their technical difficulties with the use of screen readers.

The used methodology to conduct the assessment process involves the following phases:

Organization and structure of the Auto evaluation Team. The team consists of three people, one of them performs the tasks of coordination. The three persons are related to the course to evaluate and have knowledge of it very well: The coordinator is responsible for the course, one of the components is the professor of the course and the other is a student of the course in its pilot edition and is a person with severe physical disability.

Analysis of the Auto evaluation Model. First, the coordinator and second the entire team supervises the documentation brought by CALED (methodological guide, manual for the evaluation and manual for completing the registration). Who discuss and argue about the process and registry items for the Auto evaluation, until fully understanding. In detail, it is analyzed the areas, sub-areas, standards and indicators to understand the importance of the course to evaluate and establish its weighting factors, assuming the values of the proposed weights and modifying only those who we believe individuals to assess the course that will be analyzed.

Organizational Strategy and Implementation Process. The coordinator proposes a work plan and assign tasks and completion dates. That plan is discussed and approved by the entire team.

The implementation process will be held during the month of July 2014, establishing the last week to review the electronic portfolio and the generation of the final report. Next, a personal communication with the already actors is performed: Technicians, course designers, site manager and administrative manager to involve them in the evaluation process explaining his involvement and the aim of the process. Subsequently the cast interviews and surveys teachers are defined (taking into account the proposals of the methodological guide).

Relevant interviews are sent and collect and surveys to teachers of the course. Surveys were sent in the final phase of the course to students, they are collected and analyzed. In a next step all information collected is organized, the data are entered into the electronic portfolio (pending) and additional information is searched. Finally the coordinator prepares the final report, helped by the rest of the team.

2. Brief conclusions of the evaluation.

Next we are going to analyze each area/sub areas, discussing on the specifics of the course evaluated in each of them, their strengths, weaknesses and valuation.

Area 1. Technology

In this area the development and necessary technological resources have been defined, for the implementation of virtual course documents Framework Analysis and Conception/Design, and means available for interaction. Installation requirements have been defined in the document Development/Production Process, management needs in the Learning Process and document evidence in document Process evaluation and optimization. Is considered excellent from the perspective of this area, mainly due to the quality of the technical support, personal and material

Sub area 1.a Technological Framework

It has an internet server hosted by the computer systems of the institution that contains a learning platform Moodle. Both the platform and service are solid and repeatedly used and tested.

Since this is an online course, access to students is through their own technological means so that should give greater emphasis among the students of the need for technological means indicated in course prerequisites, because if this condition is not met, the student will have trouble following the course. A resume is asked to the students and the necessary technological profile indicated in prerequisites. In both cases, trust is given to the students since it is not controlled by test or tests that meet those requirements or what is indicated in the resume.

BP 1a.1 It is recommended to the institutions to ensure greater control to students regarding the provision of technological means indicated in course prerequisites, because if this condition is not met the student will have problems by staying in the course; reason that could produce evidence or test compliance with the technological requirements.

BP 1a.2 It is suggested to the institution to improve and update the guide to use of the platform, including more guidance for blind students.

Sub area 1.b Availability, performance and capacity

Availability, performance, capacity, operation and disaster recovery virtual environment is guaranteed by the standard procedures of the institution as this provides web hosting service, server and associated technical department. The solvency and long experience of the institution in carrying out this task gives guarantee for the development of the course. Scalability is guaranteed by the institution, although it will

be conditioned by the budget. In this sub area standards are all covered, mainly due to quality technological support staff and equipment of the Institution.

Sub area 1.c Security and Privacy

The security, integrity and privacy of guarded data guarantee the standard procedures of the institution and its policy of consistent data protection with current legislation. In this policy, teachers are also committed since all of them are stable professors of the university. In this sub area standards are all covered, and we consider them excellent, mainly due to the quality of technical support, personnel and material, of the institution.

BP. 1c.1 The institution must ensure that the law is fulfilled regarding security and privacy, it is recommended that the organization establish procedures to facilitate compliance.

Sub area 1.d Accessibility

The manager and administrative support staff from the course are responsible of ensure access to all recipients by the following process: Technical requirements for connection to course prerequisites are indicated, information access to email addresses of students and teachers is sent, a follow up to the connected users is made and contact is made with the unconnected users. On the other hand, the student access to the course is conditioned by its own technological means, so that the failure of these, which do not meet the prerequisites may endanger the necessary development of the course.

BP. 1d.1: It is recommended to the institution emphasize in future editions prerequisites for students, specifically in the usual computer use (which involves for blind students the usual use of screen readers).

BP.1d.2: It is recommended the inclusion in the mentoring plan, support from an expert on screen readers if there are blind students to support mentoring tasks.

Sub area 1.e Usability and Navigability

A platform is used and standardized as Moodle, and sufficiently proven and in continuous improvement, ensures usability and navigability. Participants have an accessible guide for the usage of the platform, reviewed by a blind person, since these students are those who have had major problems of using the platform, not by the characteristics of this but to limited knowledge from the student about the usage of screen readers.

Surveys from students indicate that the usage of the platform has a rated between high to very high, both in the pilot course as in the first edition, which can be considered a good result seen as almost all students of the first edition are blind.

BP.1e.1: Although beyond the scope of the course, it would be desirable to have a guide to advanced use screen readers addressed to non-experts blind students in these tools.

BP.1e.2 Is positively evaluated that the institution contributes as evidence, a favorable external report on the implementation of accessibility, usability and navigability of the course.

Sub area 1.f Maintenance

Availability, performance, capacity, operation and disaster recovery virtual environment and maintenance is guaranteed by the standard procedures of the university as this provides web hosting service, server and associated technical department. A free platform like Moodle is used, no license is needed.

Staff is available for the computer systems, University and technical staff associated to the computer department, according to the budget. Updates to the Moodle platform is performed by the technical staff associated, not to the staff of computer system of the University. The availability of technical personnel department to perform these tasks must be requested in advance as this is a shared resource. All standards from this sub area are covered.

BP.1.f The institution that submits a virtual course accreditation and lacks scalability procedures, maintenance and technological independence must develop them and implement them.

Area 2. Training

Professorship needs and recommendations for teaching are defined, and are accessible at Framework Analysis and Conception/Design documents. The management of admission is defined in the Learning process document.

Sub area 2.a Teaching staff

Participant teachers are from the Computer Science department of the Institution, their service sheet and resume is studied, demonstrating high experience and virtual

training. Also, they are certified as teachers of accreditation given by the entity responsible for such certification.

The teachers of the course, as teachers of the institution, are included in the training plan of the university and have received training through the Virtual Classroom of the institution. Within the project ESVI-AL teachers have been trained in the accessibility of online courses. In the first edition of the course, most of the students were blind, a blind person joined to the teaching staff, that is a collaborator of the ESVI-AL project and pilot edition student of the course to support all participants (both students and teachers) in the use of screen readers. The use of screen readers by blind students is essential and constant for the development of the course. During the pilot edition no problem appeared, but during the first edition (open to people with different levels of computer use) insufficient knowledge in the use of these tools was detected in some blind students, and requested support to use them, an area that was outside of the course.

BP.2a.1 The institution that submits a virtual course accreditation must ensure that teachers receive pedagogical and technical training permanently to ensure an inclusive virtual teaching.

BP.2.a.2 Teachers need to acquire an education based on the use of technological means for people with disabilities, which will develop the virtual course correctly.

Sub area 2.b Students

A resume is asked to the students and the technological profile and necessary training in prerequisites are indicated, in the course announcement and the study guide. It offers a selection process based on the sent resumes, disability of the applicant and the date of request. The requests have far exceeded offered places.

Resumes that are sent by the applicants are trusted in their authenticity, since it is not controlled by test or tests that meet with the course requirements or indicated in the resume. One of the requirements was the basic use of technological means. During the pilot course no problems arise. During the first edition, problems are encountered among some visually impaired, since the scope of participants is broader. For its resolution, a guide of inclusive use of the platform is developed, which is reviewed to ensure their usefulness for people with such disabilities, and has the support of a blind person collaborative of the ESVI-AL project and aware of the course, to give advice through forums to people who need help in using technological means, in particular in the use of the platform with screen readers. It would be desirable to have a controlling method in which the student actually meets the prerequisites required and, to emphasize the requirement that the student meets the prerequisites asking necessary knowledge for normal computer use, including the necessary use of screen readers in blind students.

BP.2b1. It is recommended to the institution, established a procedure to verify resumes from the students, to determine the actual compliance with the profile of requested admission.

BP.2b.2 The training institution must ensure and emphasize to students the need to possess the technological means indicated in the course prerequisites; allowing the proper development of it.

BP.2b.3. It is recommended to place greater emphasis on mastering the technological means by disabled students to conduct their training. It is noteworthy the importance of having an expert in the use of technological means for the disabled, becoming additional support for any inconvenience in the course.

Area 3. Instructional Design

The relevance of the course in the Needs Analysis document is guaranteed. The objectives and powers are established in the Conception/Design and Development/Production Process documents. Accessibility principles are established to follow during the development of the course in Conception/Design, Development/Production Process and Implementation Process documents.

In addition, these documents are defined testing during the development life cycle to ensure course content organization. The use of communication tools in Conception / Design and Learning process documents is defined. The principles for monitoring and mentoring are established in the Learning Process document, and the evaluation in the Evaluation/Optimization Process document. The principles of evaluation are established in Conception/Design, Development/Production Process and Implementation Process documents.

Sub area 3.a Relevance of the course

The course is based on an international standard broadly demanded, which ensures its relevance. Relevance to the Needs Analysis phase is studied and, its utility is developed in the study guide. Surveys to the students indicates that the utility of the course has been rated between high to very high, both in the pilot course as in the first edition. Total score of this sub area is 2 over 2

Sub area 3.b General Guidelines of the course

Since it is an inclusive course, no specific guidance is given to people with disabilities. During the pilot course no problems arise. During the first edition problems are encountered among some visually impaired (as the profile from the participants is broader) while using the platform with: Download resources, submitting home works,

etc. To improve this aspect, a guide of the use of the platform is developed, aimed to people with visual impairment and the support of a collaborative person from the ESVI-AL project, aware of the course, to give advice through forums in the use of the platform with screen readers.

Some students complain about not having access to all communication media at the beginning of the course, but they did have access at the end, and with some problems such as overloaded links. Analyzing these problems, it is concluded that due to a lack of use of the platform and the use of screen readers, which has been solved by the above mentioned support.

BP.3a.1 If the institution does not have a LMS test plan , it is recommended a test plan that allows the completion of the course, making changes to the virtual learning environment, checking compliance with the functional requirements, particularly achievement accessibility standards.

BP.3a.2 If the training institution does not have a manual for the use of the virtual learning environment, it is recommended to elaborate one, taking into account that should serve as a guide for people with visual disabilities; in general, are those with major drawback when interacting in such tools.

BP.3a.3 In order to evaluate the accessible features of the proposed means of communication platform, it is recommended that the institution prepare an evaluation report of accessible media, indicating therein the level at which these tools are used by people who have a disability in the course.

Sub area 3.c Objectives and Powers

Surveys to the students indicates that the utility of the available material to aim the objectives has been rated between high to very high, both in the pilot course as in the first edition. During these first editions, edition erratum and errors have been detected and have been corrected, which could be due to some failures on the appropriateness of the objective-contents.

Note that the powers and objectives of the course are defined by the international standard, that besides of define them, sets the agenda to cover them (without developing). The assessed course to be aimed at achieving this certification must adhere to the objectives, powers and proposed agenda.

Sub area 3.d Contents

From the surveys to the students indicates consistency, coherence and clarity of the structure of the course has a very good rating both in the pilot course as in the first edition.

Some students believe that the contents should be able to adapt to the preferences of students and activities could be more varied:

- As to adapt the content to the preferences of the students, some students appreciate to have more audios to explain part of the agenda. Currently a caption and audio is included, that summarized each video units, but creating audio files for each detailed content of the syllabus (very extensive) is beyond the scope of this course.
- As for the variety of activities, content, following the standard and aims certification, by their nature, forces to the design and implementation of similar to those of accreditation activities, since the aim of the course is to prepare for this accreditation.

Ease of downloading content in different formats is guaranteed to facilitate the study of students who do not have permanent internet connection. This guarantee is provided by the Moodle platform.

BP.3d.1 In the event that the training institution offers a course several times, it is suggested that a plan for updating and creating content, establishing at the same time each which must be renewed.

BP.3d.2 It is recommended to the institution is advised perfectly meet the objectives, competencies, activities and contents of the topics in the unit are described in the teaching units of the course, but it is also suggested to add an array of congruence among objectives, powers and contents; as well as add an array of congruence between the proposed activities, learning styles and abilities of the course participants; so that the student knows the relationship among these components and that certainly will help the coordination of the course to assess the level of efficiency of the methodology adopted.

BP.3d.3 In the event that the institution does not have an assessing report of the course content, it is recommended to develop such report, where compliance with the principles of universal design can be observed.

BP.3d.4 It is suggested that virtual learning environment where the course is implemented, has a section on frequently asked questions about technical problems, where students can clear their questions immediately, especially in publishing.

BP.3d.5 If the educational institution does not have a document with guidelines for production of accessible instructional materials in stating an evaluation matrix with parameters of accessibility and usability, it is recommended to develop such guidelines,

so that all materials that are proposed in the course are consistent with the needs and preferences of the students.

BP.3d.6 It is advised to the educational institution to develop a document detailing the strategies of teaching - learning that have been considered according to the situation of students with disabilities.

BP.3d.7 In the event that the training institution does not have a test report accessibility and usability of educational materials proposed in the course, it is recommended to produce such materials.

Sub area 3.e Interaction

The course interaction is the tutor-student and student-student type. Communication tools of the Moodle platform and external tools such as Skype and email address are used. In every forum participation is encouraged and in many of them, the students are responding to other peers. It is noteworthy the high solidarity that has occurred among students during the course offering to help, solving problems and providing their contact details out of the course to those who wanted to deepen the content working together or just to socialize. It is recorded in the detailed records of the course all these interactions.

On the other hand, accreditation is an individual activity because knowledge and personal skills needs to be proven without collaboration or external help. Consequently, in the study or assessment activities takes into account this fact, to ask students to be performed by them always individually, in order to accustom them to the accreditation process, leaving collaborative work to an earlier stage of preparation and planning of the activity, not of itself realization.

Some students indicated that the forum should have greater accessibility for users who uses screen reader and found difficulties in the edit box. This issue has been analyzed, in consultation with a blind person who has completed the course and expert in the use of screen readers and her opinion is that, access is possible using this tool, knowing good and giving the necessary details.

From the surveys to the students indicates that the use of communication tools has a very good rating, both in the pilot course as in the first edition, that is a good rating so it can be deduce that students are satisfied with these tools.

BP.3e.1 It is recommended to the training institution that uses the virtual learning environment of technological tools of the course to develop these activities or to be used as a communication mean, the development of an evaluation report of accessibility and usability of these tools. Also, it is recommended to indicate possible

improvements that could be implemented in them, in the case of finding inconsistencies, especially when used by people with disabilities.

BP.3e.2 In the event that the training institution does not have a document describing the proposed activities to encourage communication and collaboration among those involved in the training process where the accessible features that have indicated, it is recommended to develop such document.

BP.3e.2 While it is clear that the rules of etiquette are only an adaptation of the etiquette of the actual technologies and virtual environment, it is recommended that those who are involved in the virtual course, get to know and follow them at the moment of expressing by any communication means, encouraging respect among the participants Reason why, it is proposed that at the beginning of the course, a document with such guidelines is given.

Sub area 3.f Follow up and Mentoring

The e-learning platform allows to do a detailed follow up by the participant (student-mentor), of all the activities that have developed in the system: Access and uptime, ratings, forum posts, views content, test attempts, exercise submissions, etc.

Assignments and assessments are graded through the platform, so that tracking and monitoring of activities undertaken by students is guaranteed, as it is easily controlled through the platform.

Each topic (from the six topics of the course) is the responsibility of a teacher that gets in charge of a mentoring, during the topic development, also the coordinator performs a continuous mentoring throughout the course transverse to the study topics. It has the support of visual impairment person collaborative of the ES-VIAL project, aware of the course, to give support to mentors in their assistance to students with such disability and, directly to students if necessary. Teachers believe that mentoring plan is pretty good.

In addition to private messages between students and teachers, messages in the forums are 140 in the pilot edition and 535 in the first edition, indicating a continuing demands of students' orientation. Forum questions are answered in less than 24 hours, usually less than 12 hours. The activity of the course is searchable through the activity log of the course in Excel format, making it easy to narrow down by activity, participant, etc.

BP.3f.1 It is suggested that the training institution provides a mentoring plan, so that the mentor who will teach the course, know the best practices that can provide mentoring to students. Also to complement this plan, it is recommended the

development of an e-moderation guide, where the guidelines that the mentor needs to take under consideration are indicated, in order to avoid students from dropping off.

BP.3f.2 In order to assess the degree of compliance with the plan of mentoring, it is recommended to have a periodic report by the coordinators and mentors, where the use of communication tools used in their mentoring is noted, and evaluating as well, the satisfaction level of the same tools by the participants.

BP.3f.3 It is recommended that the training institution provides an evaluation report of the mentoring plan, where weaknesses to overcome and possible strategies that could be adopted are identified.

Sub area 3.g Evaluation

Since it is an inclusive course, evaluation tests are the same to all students, since they are designed and implemented without accessibility barriers. There is no time limit on the tests and they meet all accessible design tests, and besides always include information in different formats. Evaluation tools from the Moodle platform are used, and which are accessible. Results from the evaluation and pilot edition of first edition are available. Results from the evaluation process may be declared as very good being the following results from first edition (151 students):

- Not submitted, 39 (of which 13 of them have never accessed). Not submitted are the students who have not given any evaluation activity:
- Failure, 19;
- Approved, 92.

Considering that the majority of the students (118 over 151) are blind and that the course focuses on technology and requires a constant use of it. The course also responds as syllabus and evaluation in an inclusive international standard (not aimed entirely to blind people) and precisely, these students have greater difficulties associated with their knowledge and expertise in the use of screen readers.

From the surveys to the students, it indicates that usage of evaluation test has a very good score, both in the pilot course as in the first edition.

Teachers and students, in their survey, assess the system of evaluation of accessibility and inclusion of the course (content, interaction, teaching materials, teachers / tutors) with a medium-high score. To improve this aspect, besides including the survey to students given by the evaluation methodology CALED, of virtual courses, it has been designed and performed a specific survey on accessibility and usability.

BP.3g.1 It is recommended to institution to know that the virtual learning platform offers tools for statistical reporting however, it is important to know that the coordinator/mentor

of the course is using the platform as well; therefore it is required to be submitted as evidence a document with the reports where it can be observed the different interactions of participants and course mentors.

BP.3g.2 If the training institution does not have an improvement plan of the course is recommended to perform such plan, establishing therein, possible strategies for improving quality and accessibility criteria and thereby increase pass rates in the course.

Area 4. Services and Support

The mentoring service during the course by teachers is defined in the Learning Process document. Service and support principles are established in the Learning Process and Evaluation/Optimization Process documents.

Sub area 4.a Information Services

Up to date, the course has been released through the ESVI-AL project so accessible and has conveyed the information to disabled associations throughout Latin America.

The course is in the process of entering the extension course catalog of the institution, which involves using the media that has the facility for such courses. Is possible to consult about extended courses at the website of the Institution. The commitment of the institution to Web accessibility is reflected in the adoption of the necessary measures to enable users from all walks access the content provided and, are explained in a specific section of the website of the institution. Besides this, Moodle platform has a section that reports about accessibility and use of keyboard shortcuts.

There are other sources of information about the course content and accreditation in the official websites of accreditation from several countries and the international website of the Foundation.

Since this is an online course, access to students is through their own technological means, so this is informed at the course prerequisites, indicating the technological profile that students should possess and technological environment that they must have.

Like any management carried out in the institution, security, integrity and privacy of data safeguarded, is guaranteed by standard procedures of the institution that in its website reports this to the students.

BP.4.a.1. It is recommended that the institution adopt the necessary and sufficient measures in the web portal of the University, to achieve to users the accessibility to content, taking into account the various special conditions.

Sub area 4.b Attention to the Student

The student has a continuous mentoring service during the course by the teachers, both in their role as mentors as in the role of course leader. It has the support of a visual impairment person, collaborative of the ESVI-AL project, knowledgeable of the course, to give support to mentors in their assistance to students with such disability.

As for administrative information, a website, email address, phone number, fax number and Skype are available. These services are inclusive and accessible to all person with disabilities. Personal, synchronous communication is possible during regular office hours (9:00 am to 6:00 pm Spanish time).

Some students would appreciate having more videos that explain part of the agenda. Currently a caption and audio is included, that summarized each video units, but creating audio files for each detailed content of the syllabus (very extensive) is beyond the scope of this course.

Overall, students believe that the care provided was very good and some of them include congratulations to the mentors and course managers for its existence and development.

BP.4.b.1. The institution that submits an accessible virtual course, has a knowledgeable person, to provide accessibility for people with special needs and, give support to mentors and students who requires of them.

BP.4.b.2. It is recommend to the institution to conduct the creation of audio and Braille text for course content; thus obtaining, accessibility to students with disabilities and ensure adequate training course.

Sub area 4.c Connection

The greater connection of education to society is its use in the employment and social field, on that side of ESVI-AL project and Latin American Blind Union (ULAC for its acronym in Spanish) have employment initiatives to be carried out by a team of students in the course. Moreover, the course is part of the activities of ESVI-AL project with participating members and collaborators from several countries and has established a network of cooperation on Accessibility in Education and Virtual Society.

On the other hand, the institution has a very important social connection in its environment and a specific body called Social Council whose mission is to foster relationships between the university and its cultural, professional, economic and social center for the quality of university activities.

3. Global Assessment and Improvement Proposals

Specially focusing on the most important aspects evaluated:

As for the definition of the life cycle of the course, methodology has been applied to implement the curriculum developments accessible to the ESVI-AL project, consequently needs, process, etc, have been defined in the relevant documents.

In terms of technology and its use we can conclude that the infrastructure, service and maintenance of the technological environment are supported by computer systems of the institution and technical personnel associated with the IT department (uses quality control procedures and in accordance with the law). Besides free learning platform and standard used as Moodle. Both the platform and the environment and technological service are solid and repeatedly used and tested. Scalability of physical resources is conditioned by the budget and the use of human resources must be requested well in advance as they are shared resources. Moodle guarantees accessibility, usability and navigability. Participants have an accessible guide to use of the platform, reviewed by a blind person, since these students are those who have had major problems of use. The student satisfaction with the use of the platform is high to very high, which can be considered as good result, since almost all students of the first edition are blind.

As for the participants, teachers are teachers of the institution with extensive experience in the classroom and virtual training. Also, they are certified as teachers of accreditation. On the other hand, students are analyzing their participation and result, which reflects that they respond perfectly to the course. There is only one difficulty that arises with some blind students, who had not appeared in the pilot edition.

In the first course edition most of the students are blind. The use of screen readers by blind students is essential and constant for the development of the course. During the pilot edition no problem appeared, even though they were some blind students, but during the first edition, insufficient knowledge in the use of these tools was detected in some blind students, and they requested support to use them, an area that was outside of the course.

We consider that the response of the course manager and by the teachers was fast and useful, since it was decided to include in the teaching team a blind person, collaborative of the ESVI-AL project and, student of the pilot edition course, to give support to all participants (Both students and teachers) in the use of screen readers, and besides this, create a guide for using revised by this contributor platform.

As for the design process, the course is based on a broadly demanded international standard, ensuring its relevance, but this affects the definition of content and activities as competencies and course objectives are defined by the international standard, besides define them, establish a syllabus to cover them (without develop them). Students are satisfied with collaboration tools and the high level of participation needs to be notice, since this occurred in the course, and also the solidarity and socialization that has occurred among students.

The learning platform allows detailed follow up to participant in its activities and ensures that these data and the evaluation data are available in an easy and secure manner. Since it is an inclusive course, evaluation tests are the same to all students, since they are designed and implemented without accessibility barriers, and the results of the evaluation process may be declared as very good. Students and teachers assess the

accessibility and inclusion of the course (contents, interaction, teaching materials, teachers/mentors), the latter having two surveys: 1) The proposal by the CALED methodology, of virtual courses evaluation and 2) One designed for this course about accessibility and usability.

As for service and support, we can say that security, access and data integrity is guaranteed by the prestige and solvency of the institutions that manage them (ESVI-AL and training institution) and its usability and accessibility on their web pages. Students are satisfied with the care that they received, as they have at their disposition, four mentors and a person to support accessibility for blind students and on the teaching and administrative part, a person that they can communicate with in a synchronous or asynchronous way in Spanish time (by phone or Skype). A fortress that is noteworthy of this course is that students selected from this course will participate on an employment initiative promoted by the ESVI-AL project Latin American Blind Union (ULAC for its acronym in Spanish).

From the above the following suggestions for improvement are derived:

- There should be greater emphasis among students of the need for technological means indicated in course prerequisites, because if this condition is not met the student will have trouble following the course.
- There should be more emphasis to the future editions on what are the prerequisites for the student on the usual computer use (implying for blind students the routine use of screen readers) without ruling to have the support of an expert in these tools if there are blind students.
- I• t is suggested to include in the mentoring plan, the support of an expert in screen readers if there are blind students, to support mentoring tasks.
- It is suggested to determine a control procedure that students really meets the prerequisites requested.
- Although beyond the scope of the course, it would be desirable to have a guide to advanced use screen readers addressed to non-experts blind students in these tools.
- It is suggested to include direct communication e.g. via Skype, since this type of communication is at the discretion of the teachers.
- It is suggested to analyze the possibility of creating audio files for some content selected due to its difficulty.
- It is suggested to improve the use guide of the platform, including more guidance for blind students.
- It is suggested to recheck the contents to detect errors and editing errors, even after two editions do not expect many additional corrections.
- It is suggested to include these instructions about the use of the forum for blind students in the use guide of the platform.

- Use on future editions, both surveys to the students: 1) The proposal by the CALED methodology, of virtual courses evaluation and 2) The other one designed for this course about accessibility and usability.