D2.1 User ICT Requirements & Specifications

Report

Effective Writers & Communicators Project

January 2014

This project has been funded with support from the European Commission. This publication (deliverable) reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.
D2.1 User ICT Requirements & Specifications Report

1. Introduction .................................................................................................................. 5
2. Methodology ................................................................................................................ 5
3. Literature review per country ...................................................................................... 5
   3.1 P1-CMT-Greece ....................................................................................................... 5
   3.1.1 National provisions and applied standards ...................................................... 5
   3.2 P2-TUKE-Slovakia .................................................................................................. 7
   3.2.1 National provisions and applied standards ...................................................... 7
   3.3 P3-Navigator Consulting-UK ................................................................................... 8
   3.3.1 National provisions and applied standards ...................................................... 8
   3.4 P4-First Elements-Cyprus ...................................................................................... 9
   3.4.1 National provisions and applied standards ...................................................... 9
   3.5 P5-The Elephant-Netherlands ................................................................................. 11
   3.6 P6-WSIIZ-Poland .................................................................................................. 13
   3.6.1 National provisions and applied standards ...................................................... 13
   3.7 P7-LatConsul-Latvia .............................................................................................. 15
   3.7.1 National provisions and applied standards ...................................................... 15
   3.8 P8-CREA-Spain ..................................................................................................... 15
   3.8.1 National provisions and applied standards (Spain) ........................................ 15
   3.9. P10 – Space – Belgium ......................................................................................... 16
   3.9.1 National provisions and applied standards ...................................................... 16
   3.9.2 A few examples of professional training using ICT ..................................... 20
   3.9.3 Additional examples ......................................................................................... 22
   3.10 P11 – BDA – Bulgaria .......................................................................................... 24
   3.10.1 National provisions and applied standards .................................................... 24
4. International provisions and applied standards ......................................................... 25
   4.1 International Framework ......................................................................................... 25
   4.2 Accessibility Principles .......................................................................................... 26
   4.2.1 Web Accessibility Standards ........................................................................... 26
   4.2.2 Perceivable information and user interface ..................................................... 27
   4.2.3 Content presentation ......................................................................................... 28
   4.2.4 Distinction of content ....................................................................................... 29
   4.2.5 Operable user interface and navigation ........................................................... 30
   4.2.6 Sufficient time for content reading and use ..................................................... 30
   4.2.7 Seizures occurring from content ...................................................................... 31
   4.2.8 Content navigation ......................................................................................... 31
5. Interviews results (Per country) ........................................................................................................ 35
5.1 P1-CMT-Greece .................................................................................................................................. 35
   5.1.1 Presentation of interview framework .......................................................................................... 35
   5.1.2 Basic results and findings analysis .............................................................................................. 35
      5.1.2.1 Existing e-learning experience ............................................................................................ 35
      5.1.2.2 User requirements in e-learning ............................................................................................ 36
      5.1.2.3 Accessibility – Usability – Customization issues ................................................................. 36
   5.1.3 Overall recommendations ........................................................................................................... 36
5.2 P2-TUKE-Slovakia ................................................................................................................................. 37
   5.2.1 Presentation of interview framework .......................................................................................... 37
   5.2.2 Basic results and findings analysis .............................................................................................. 37
      5.2.2.1 Existing e-learning experience ............................................................................................ 37
      5.2.2.2 User requirements in e-learning ............................................................................................ 37
      5.2.2.3 Accessibility – Usability – Customization issues ................................................................. 38
   5.2.3 Overall recommendations ........................................................................................................... 38
5.3 P3-Navigator Consulting-UK .............................................................................................................. 39
   5.3.1 Presentation of interview framework .......................................................................................... 39
   5.3.2 Basic results and findings analysis .............................................................................................. 39
      5.3.2.1 Existing e-learning experience ............................................................................................ 39
      5.3.2.2 User requirements in e-learning ............................................................................................ 41
      5.3.2.3 Accessibility – Usability – Customization issues ................................................................. 43
   5.3.3 Overall recommendations ........................................................................................................... 44
5.4 P4-First Elements-Cyprus .................................................................................................................. 47
   5.4.1 Presentation of interview framework .......................................................................................... 47
   5.4.2 Basic results and findings analysis .............................................................................................. 47
      5.4.2.1 Existing e-learning experience ............................................................................................ 47
      5.4.2.2 User requirements in e-learning ............................................................................................ 47
      5.4.2.3 Accessibility – Usability – Customization issues ................................................................. 48
   5.4.4.3 Overall recommendations ...................................................................................................... 48
D2.1 User ICT Requirements & Specifications Report

5.5 P5-The Elephant-Netherlands ........................................................................ 48
5.5.1 Presentation of interview framework .............................................................. 48
5.5.2 Basic results and findings analysis ................................................................. 49
  5.5.2.1 Existing e-learning experience ................................................................. 49
  5.5.2.2 User requirements in e-learning ............................................................... 49
  5.5.2.3 Accessibility – Usability – Customization issues ........................................ 51
5.5.3 Overall recommendations ............................................................................. 51
5.6 P6-WSIIZ-Poland ......................................................................................... 51
  5.6.1 Presentation of interview framework ............................................................ 51
  5.6.2 Basic results and findings analysis ............................................................... 52
    5.6.2.1 Existing e-learning experience ............................................................... 52
    5.6.2.2 User requirements in e-learning ............................................................ 52
    5.6.2.3 Accessibility – Usability – Customization issues ..................................... 53
  5.6.3 Overall recommendations ............................................................................. 53
5.7 P7-LatConsul-Latvia .................................................................................... 54
  5.7.1 Presentation of interview framework ............................................................ 54
  5.7.2 Basic results and findings analysis ............................................................... 54
    5.7.2.1 Existing e-learning experience ............................................................... 54
    5.7.2.2 User requirements in e-learning ............................................................ 54
    5.7.2.3 Accessibility – Usability – Customization issues ..................................... 55
  5.7.3 Overall recommendations ............................................................................. 55
5.8 P8-CREA-Spain ............................................................................................ 56
  5.8.1 Presentation of interview framework ............................................................ 56
  5.8.2 Basic results and findings analysis ............................................................... 56
    5.8.2.1 Existing e-learning experience ............................................................... 56
    5.8.2.2 User requirements in e-learning ............................................................ 57
    5.8.2.3 Accessibility – Usability – Customization issues ..................................... 59
  5.8.3 Overall recommendations ............................................................................. 59
5.9 P10-SPACE-Belgium ................................................................................. 60
  5.9.1 Presentation of interview framework ............................................................ 60
  5.9.2 Basic results and findings analysis ............................................................... 60
    5.9.2.1 Existing e-learning experience ............................................................... 60
    5.9.2.2 User requirements in e-learning ............................................................ 60
    5.9.2.3 Accessibility – Usability – Customization issues ..................................... 61
D2.1 User ICT Requirements & Specifications Report

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.9.3 Overall recommendations</td>
<td>62</td>
</tr>
<tr>
<td>5.10 P11-BDA-Bulgaria</td>
<td>62</td>
</tr>
<tr>
<td>5.9.1 Presentation of interview framework</td>
<td>62</td>
</tr>
<tr>
<td>5.9.2 Basic results and findings analysis</td>
<td>62</td>
</tr>
<tr>
<td>5.9.2.1 Existing e-learning experience</td>
<td>63</td>
</tr>
<tr>
<td>5.9.2.2 User requirements in e-learning</td>
<td>63</td>
</tr>
<tr>
<td>5.9.2.3 Accessibility – Usability – Customization issues</td>
<td>64</td>
</tr>
<tr>
<td>6. Conclusions</td>
<td>65</td>
</tr>
<tr>
<td>6.1 Literature Review per Country</td>
<td>65</td>
</tr>
<tr>
<td>6.2 International Provisions and Applied Standards</td>
<td>65</td>
</tr>
<tr>
<td>6.3 In depth Interviews</td>
<td>65</td>
</tr>
<tr>
<td>APPENDIX 1 - In depth interviews questionnaire</td>
<td>67</td>
</tr>
</tbody>
</table>
D2.1 User ICT Requirements & Specifications Report

1. Introduction

The report on user ICT requirements and specifications is an internal document that is used to define the parameters of the online platform under WP4, on which the partnership will provide the e-learning course. The report is based on a review of international practices and guidelines on user accessibility, especially for people with disabilities and special needs. It also provides feedback on target user requirements and specifications identified through interviews, in order to help optimize the operability and user friendliness of the online platform hosting the e-learning course.

2. Methodology

This report consists of three main parts. In the first part, the reports on national provisions and applied standards in each of the participating countries are presented. The second part consists of the presentation of the international framework regarding standards and provisions on web accessibility. Finally, the third part consists of the reports on the in-depth interviews conducted in each participating country. The in-depth interviews helped identify user needs and preferences on the online platform and on the e-learning process.

3. Literature review per country

3.1 P1-CMT-Greece

Provisions and standard operating procedures on online tool requirements for accessibility and usability by people with disabilities and special needs.

3.1.1 National provisions and applied standards

The legislation framework, in Greece, regarding accessibility to information and communication technologies was researched. Furthermore, applied standards and provisions in Greece regarding the accessibility to the "information society" were also researched in relation to the European legislation framework and standards.

It was found that, the legislation framework in Greece complies with the objectives and directions of European policy 2010 - European Information Society 2010. More specifically, the Greek e-Government Interoperability Framework (Greek e-GIF)[1], being the cornerstone of Digital Strategy 2006-2013[2], sets the standards for the overall design of the Greek Public Administration for the provision of e-Government services to public bodies, businesses and citizens. Through the framework "Digital Strategy 2006-2013", Greece has set the course of action to be followed over the next years regarding the equal accessibility of enterprises and people to the "information society". In this context, the right for the equal accessibility of disabled people to information technologies is recognized by the constitution of Greece. Furthermore, people with disabilities in Greece, are eligible to receive financial
help from the state for special communication devices (e.g. discounts on software and devices for the hearing impaired) as well as reduced prices for internet connections.

Over the last years, various projects have been developed in Greece so as to promote the accessibility of disabled people in information and communication technologies. Indicative projects are, the SYMBRAILLE project\(^3\) by the department of Informatics and Telecommunications of the National and Kapodistrian University of Athens, which aims to create a unified ICT system for coding mathematical symbols in BRAILLE and the HOMER project\(^4\), by the department of Informatics and Telecommunications of the National and Kapodistrian University of Athens, which introduces "A methodological approach to the Design of Auditory/Haptic Interaction in non-Visual User Interface with Emphasis to accessibility for the Visually Impaired".

It should be noted that the relevant European legislation Framework includes the following regulatory directives:

- **2002/19/EC**: on access to, and interconnection of, electronic communications networks and associated facilities,
- **2002/20/EC**: on the authorization of electronic communications networks and services,
- **2002/21/EC**: on a common regulatory framework for electronic communications networks and services and
- **2002/22/EC**: on universal service and users' rights relating to electronic communications networks and services.

The following scheme depicts the interconnection of the Greek and European frameworks regarding ICT provisions for people with disabilities.
3.2 P2-TUKE-Slovakia

3.2.1 National provisions and applied standards

Existing online tool requirements, provisions and standard operating procedures for accessibility and usability by people with disabilities and special needs in Slovakia were researched. The legislation as well as project schemes were used as sources of relevant information.

It was found that the laws regarding people with disabilities in Slovakia have been in accordance with the Convention on the Rights of Persons with Disabilities since 2010. Persons with disabilities are eligible for financial help from the state for special communication devices, hardware and software, e.g. telephone for the hearing-impaired, personal computer and scanner with optical character recognition, assistive technology software, etc.

A number of projects targeted at assistive technology were found, some of which were run at our larger institution. Three projects (Integration of students with health disabilities into the educational process with emphasis on the unification of access to virtual information infrastructure and means of ICT; Application of virtual reality technologies for handicapped
D2.1 User ICT Requirements & Specifications Report

persons education; Guidance for Assistive Technologies in Education and the Workplace Advancing Young People with Disabilities) focused on the use of assistive technology as an effective tool for persons with disabilities both in education and at workplace. Another project involved training of assistive technology consultants.

Another such project was run jointly by two NGOs, of which one focuses on the development of innovations and technologies and the other is a national association of the sight-impaired. The project resulted in the Blind Friendly Web initiative that offers a set of standard rules for the development of websites accessible not only for the sight-impaired and majority users, but also for other disadvantaged groups (e.g. persons with various physical disabilities, users with an alternative web browser, users with an alternative device, etc.).

In addition, we found a socio-psychological training relevant for the current project, namely one targeted at improving communication skills of persons with disabilities as well as long-term unemployed persons as a disadvantaged group of socially isolated persons. The aim of the training was to increase the communication skills and consequently the self-confidence of persons who have little communication opportunities, in order to increase their employment possibilities. The training focused on verbal and non-verbal communication, self-presentation, active listening, dialogue and asking questions, assertive communication, prosodic features of speech, etc.

3.3 P3-Navigator Consulting-UK

3.3.1 National provisions and applied standards

UK Law for websites

Does the law require me to make my site accessible?

Yes. If someone with a disability, such as sight loss, can't access the information on your website then it could be seen as discrimination. The Equality Act came into force in October 2010, replacing the Disability Discrimination Act (DDA) in England, Scotland and Wales.

Like the DDA, the Equality Act was introduced with the intention of comprehensively tackling the discrimination which many disabled people face.

The Act is ‘anticipatory’, which means you cannot wait until a disabled person wants to use your services. You must think in advance (and on an ongoing basis) about what disabled people with a range of impairments (sight loss, hearing loss, mobility and cognitive impairments) might reasonably need.

For instance, it may be unlawful for a website to:

- have links on that are not accessible to a screen reader
D2.1 User ICT Requirements & Specifications Report

- have application forms (for instance, for bank accounts or job application forms) in a PDF format that cannot be read by a screen reader
- have core service information (for instance, timetables on a public transport website) that is not in a format accessible to screen readers.
- use text, colour contrasting and formatting that make the website inaccessible to a partially sighted service user
- change security procedures (for instance, on an e-commerce website) without considering the impact of blind and partially sighted customers that use screen readers.

What level of compliance should I be achieving?

We are not aware of any case which has been brought to court in the United Kingdom to date, so there is no case law guidance. However, we are currently suing BMI Baby over its failure to deal with the poor accessibility of its website.

In any event, case law can only provide broad guidance - what websites have to do may vary from site to site.

At RNIB, as outlined in our "Surf Right" website accessibility requirements, we recommend that websites exceed the basic level of compliance that the World Wide Web Consortium (W3C) recommend in their Website Content Accessibility Guidelines (WCAG) version 1.0 and aim for Double AA compliance. If you are a UK government website you should be aiming to achieve Double AA.

Disclaimer

This content is not an authoritative statement of the law and the information is not a substitute for obtaining legal advice. Whilst we have made every effort to ensure that the information we have provided is correct, we cannot accept any responsibility or liability for any errors or omissions.

3.4 P4-First Elements-Cyprus

3.4.1 National provisions and applied standards

There are currently no official studies examining the effectiveness of the accessibility measures included in the various laws mentioned in the DHLG report for Cyprus.

Unfortunately the Cypriot legislature is not yet in line with the European action plan on the issue of web accessibility. There are no specific legislative or regulatory measures regarding eAccessibility for public or private websites in Cyprus. However, Article 16 of the new EU Structural Funds regulations is expected to have an impact on eAccessibility and as Cyprus

---

D2.1 User ICT Requirements & Specifications Report

has signed the Convention, now Article 9 sets forth the obligation of the country to ensure accessibility to the Internet. However, since it is not a legislation, issues of accessibility and technology do not seem to be officially directed by the Cyprus government, at any level of education or other sectors. However, issues of accessibility and technology do not seem to be officially directed by the Cyprus government, at any level of education or other sectors (Mavrou, 2011), even though Cyprus is involved in strategies such as e-Inclusion, eEurope Action plan 2002 and has also passed the NB(III) of 2011 Law, which ratifies the UN Convention for Disability Rights.

In addition, based on the provisions of the legislation for the Regulation of Electronic Communications and Postal Services (DHLG Report), telecommunication services provided lower fees and/or exclusion from fees for some of their services (for both telecommunications and electronic communication), for individuals with severe physical, visual and hearing disabilities (CYTA, 2010).

Moreover, a study carried out (Michaelidou, Mavrou & Zaphiris, 2012), by researchers of two Cyprus Universities (a private and a public university) in 2011, examined issues of accessibility in higher education. The study evaluated the accessibility of all Cypriot University Websites by using accessibility evaluation techniques, together with examining the provisions and regulations the universities have formed with respect to accessibility ICT. Only one previous study (Zaphiris & Zacharia, 2001) analysed Cypriot web sites, ten years ago, with respect to accessibility via automated testing on WCAG1.0, which showed that Cyprus websites, including academic websites, were ranked very low in terms of accessibility. The study of Michaelidou et al (2012) evaluated web accessibility of universities against the WCAG 2.0., after the country’s inclusion in the EU, after the legislative measures referred in the DHLG report and after the ratification law for the UN convention. According to this study, Cyprus is not yet in line with the European action plan on the issue of web accessibility, showing yet no actual effectiveness of the plans the country has recently joined.

The only research evidence known comes from The Cyprus World Internet Project (Demertzis et al, 2010), which has taken place in two phases between 2008 and 2010, as part of the World Internet Project a major, international, collaborative project looking at the social, political and economic impact of the Internet and other new technologies. The research in Cyprus was conducted by the Department of Communication and Internet

---

6 World Internet Project: http://www.worldinternetproject.net/.
D2.1 User ICT Requirements & Specifications Report

Studies of the Cyprus University of Technology, and was based on data collected by interviewing 1000 Greek Cypriots and 600 Turkish Cypriots. Based on the Cyprus Internet Project (Demertzis et al, 2010), in 2010 only 33% of people aged 55 and above use the internet. In addition, according to information from personal communication with the Pancyprian Organisation for the Blind (2010), only 200 of a total of 3000 people with a visual impairment have had training on how to use the web.

In education, accessibility as per the relevant legislation (see DHLG Report) for the education of children with disabilities focuses mostly on the use of assistive and other technology (AT), as well as other equipment that may enhance accessibility in an educational setting.

Cyprus has been a member of the EASTIN (European Assistive Technology Information Network) since 2010, represented by a national contact responsible for translation and documentation of the ISO for Assistive Technology in Greek (http://www.eastin.eu/el-CY/searches/products/index). The country is also participating in CARDIAC, a European project that aims to create a platform that can bring together the various stakeholders in the area of accessible and assistive ICT with a view to identifying research & development gaps, emerging trends, and generating a research agenda roadmap.

Accessibility strategies and action plans are mainly included in strategies promoted by the European Commission, and funded projects that place specific focus on ICT. The Department of Information Technology Services (MOF, 2012) lists completed and in progress projects that refer to: specific measures aimed at the dissemination of ICT e-government, e-learning, e-business, e-health, e-inclusion, broadband networks and services. Currently, there are two National Accessibility Strategies; e-inclusion (MOF, 2012a) and the Digital Strategy of Cyprus (MOF, 2012).

3.5 P5-The Elephant-Netherlands

In the Netherlands the Guidelines for accessibility and sustainability of government web sites contains 125 guiding principles for public web site construction. The Web Guidelines go about designing, building and managing websites. They are based on international standards for quality and accessibility, and the proven solutions from professionals. With the web guidelines you have all important guidelines for a high quality website in a package together.

Application of the Web Guidelines is mandatory for all web-based services to citizens and businesses of governments. This raises the question of what the web based services Web Guidelines apply, and where boundaries lie. It applies to all the following services:


D2.1 User ICT Requirements & Specifications Report

Web-based services that are managed by governments. Thus fall outside the scope: web-based services that are managed by the private sector, but which also use authorities. Consider authorities information sites on social networking sites and other private channels.

All web-based services by governments or organizations from the private sector, which are accessed through the website of a (semi-) public authority. Therefore falls outside the scope of a public body an account on a social network such as Twitter or Facebook.

The application framework with each success criterion explained who is responsible for the correct application of the criterion. In practice this is often unclear at the moment, and am sometimes mistakenly pointed to the wrong person or organization. To prevent this, we three responsible persons are designated:
The designer

The designer needs in the design to make the right choices that affect accessibility. The designer is responsible for the correct application of criteria that have to do with:

- Use of color,
- Sequence of information,
- Navigation and interaction,
- Design of error messages.

The developer

The developer (within the organization or a supplier) is responsible for some very important and practical features of the site:

- Correct application of standards,
- Proper use of available elements,
- Good separation of content, layout and interaction,
- A logical reading structure,
- Preventing editors can make mistakes.

The editor

The editor should keep in mind when posting content into account the following conditions:

- All content must be part of the logical structure of the page read,
- All content must comply with the standards that have been used,
- All content must meet all success criteria that relate to the content.

The standard has a layered structure, there are five principles, including each principle a number of guidelines and under each directive, a number of success criteria.

The five principles of Web Guidelines version 2 are:

- Universal principle:
  Create content that is meaningful, useful for everyone, interoperable and sustainable.
- Principle 1: Shown Information and user interface components must be presentable to users perceptible way for them.
- Principle 2: Operable
D2.1 User ICT Requirements & Specifications Report

User interface components and navigation must be operable.

- Principle 3: Understandable

Information and the operation of user interface must be understandable.

- Principle 4: Robust

Content must be robust enough to be a wide variety of user agents, including assistive technologies reliably interpreted. Content must be robust enough to be a wide variety of user agents, including assistive technologies reliably interpreted.

These principles are concretized in considerations for an accessible website such as:

- Accessibility is achieved with the help of technology, graphic design and content:
- All features are accessible with the keyboard.
- Use color with sufficient color contrast.
- Customizable (relative) text size.
- Separating content and presentation.
- The images have alternative text.
- Link texts are meaningful avoid "click here".
- Links are visually distinguish clearly.
- The correct HTML structure elements are used for paragraphs (p), titles and interties (h1, h2, ...), lists (ul, ol and li).

For the Web Guidelines the "comply or explain' principle applies: government agencies should apply the guidelines, and if they do this, they must explain why. Interior assumes the responsibility of government organizations. They must settle their accounts themselves.

The Dutch Ministry of Home Affairs is responsible for the guidelines. They also developed a tool to test some of the guidelines. You can enter up to 10 URLs. These are then placed in a queue to be reviewed. For secure pages, you can enter a full URL, including a username and password. The authentication data if you enter are used only for the correct buttons on the page, and will not be shown on this website.

Organizations detectable (by a seal) to meet the accessibility or who do not have time to let perform can do a manual test by an official inspection agency. The foundation Waarmerk Drempelvrij.nl is the organization that regulates these inspections in the Netherlands, and may grant the official seal drempelvrij.nl.

3.6 P6-WSIIZ-Poland

3.6.1 National provisions and applied standards

In Poland people with disabilities experience serious difficulties in accessing the education system, practically at all levels of education and training. It results not only from the lack of proper infrastructure but also from insufficient preparation of teachers, academic staff and trainers to work with disabled persons. E-learning is perceived as a promising response to these shortages. An increasing number of Polish education and training institutions is now
making attempts to adapt their curriculum to the needs of disabled people through more or less extensive e-learning programmes.

However, e-learning accessibility for the disabled in Poland is not yet subject to a much desired system approach but rather an outcome of individual and dispersed projects, mostly funded by the European Social Fund. This is also visible in Polish law that provides no detailed regulations and guidelines on the accessibility of WWW sites and services, including e-learning solutions. Therefore, the rules that may be applied to e-accessibility (including e-learning) should be first of all sought in general acts. The Constitution of the Republic of Poland (adopted in 1997) as well the Charter of Rights of the Disabled Persons (1997) say that any citizen has the equal right to information and the disabled persons have the right to assistance in accessing information. This is also confirmed by the Act on the Access to Public Information (2001) that guarantees the right to public information for all citizens through Internet services (the system is called BIP – the Bulletin for Public Information, however, it does not include e-learning courses).

Some more detailed regulations that may be applied to e-learning courses available on public sites (e.g. run by public universities, schools, administration, etc.) can be found in the Regulation of the Council of Ministers on the National Interoperability Framework (April 2012) that states that in any case the following international standards should be respected:

- developed by Internet Engineering Task Force (IETF) and published as Request For Comments (RFC),
- developed by World Wide Web Consortium (W3C) and published as W3C Recommendation (REC)

adequately to particular need of the target group and to the current state of the information technology.

All resources made available through such systems should be consistent with the Web Content Accessibility Guidelines (WCAG 2.0) requirements at the AA level (see: http://www.w3.org/WAI/intro/wcag.php).

It is important to mention two initiatives implemented in Poland in the field related to e-learning for the disabled:

1. http://www.ieon.edu.pl/ - Internet Education of the Disabled People - the first e-learning platform in Poland designed specifically for the needs of the disabled persons; the initiative was developed by leading Polish universities and training agencies and co-financed by the ERDF Fund;

2. the ‘Website Without Barriers’ contest organized regularly by Fundacja Widzialni (eng. ‘Visible Foundation’), under which the websites are audited for their compliance with the W3C standards; the winners have the right to use the special logo:
3.7 P7-LatConsul-Latvia

3.7.1 National provisions and applied standards

There are no regulations regarding availability of any kind of software in Latvia. The only law that regulates software development is the law of copyrights. Unfortunately, in the research made by association Apeirons, NGO representing the needs of people with disabilities, discovered that none of 17 homepages of highest governmental instances are not suitable for disabled people.

So that concludes that the only regulations that should be observed are Europe’s Unions regulations and The Web Accessibility Initiative (WAI) of the World Wide Web Consortium (W3C).

3.8 P8-CREA-Spain

3.8.1 National provisions and applied standards (Spain)

Accessibility and usability of web content are ruled by two Spanish regulations.


Is a Spanish rule that establishes the accessibility requirements for web content. It is based on the Web Content Accessibility Guidelines (WCAG) 2.0 (http://www.w3.org/TR/WCAG20/).

This WCAG 2.0, adopted in December 2008, is an international recommendation on how to make the contents of the website accessible to people with disabilities. It keeps new technological factors and the experience derived from WCAG 1.0 and it is used in many web portals.

The Norma UNE 139803:2012 establishes the characteristics that the information and web content have to accomplish in order to be used by most people, including people with disabilities and special needs, and elderly people. It covers the needs of any visual, hearing, speaking, cognitive, learning and neurologic disability. Also elderly population needs, in the sense that they can be limited in some way.

Nevertheless, this rule is not compulsory; therefore web content managers follow it in a voluntary basis.

---

9 http://likumi.lv/doc.php?id=5138
10 http://www.apeirons.lv/new/?page=1&sub=25&id_cont=55
11 http://www.w3.org/WAI/
12 Norma UNE 139803:2012 has replaced the Norma UNE 139803: 2004 to adapt it to the WCAG 2.0.
D2.1 User ICT Requirements & Specifications Report

Regulation on basic conditions for access of persons with disabilities to the information society, approved by the Royal Decree 1494/2007 of 12 November.

The aim of this regulation is to establish the criteria and conditions that are considered basic to ensure access of persons with disabilities to technology, products and services of the information society and any means of social communication, in accordance with the principles of equality, non-discrimination and universal accessibility.

This Regulation is compulsory for all websites of the Spanish Public Administrations or those financed with public funds. This rule is also applied to public universities, public education and training centers, public sanitary centers, or those private centers financed entirely by public funds.

According to this Regulation the information available on website of the public administrations must be accessible to elderly people and to people with disabilities, with a minimum level of accessibility that fulfills priority 1 and 2 of the Norma UNE 139803:2012. That is to say, levels A and AA of the Web Content Accessibility Guidelines (WCAG) 2.0.

The same rule states that Public Administrations will promote dissemination and awareness campaigns, as well as training on the accessibility issue to reach owners of other web pages (different from the ones of the public administrations), to incorporate progressively accessibility criteria into their web pages and also to improve the level of accessibility on their web pages. Particularly those web pages with goods and services for the public in general, and specially, with educational, sanitary and social services content.

3.9. P10 – Space – Belgium

Provisions and standard operating procedures on online tool requirements for accessibility and usability by people with disabilities and special needs.

3.9.1 National provisions and applied standards


In Belgium, there are a number of legal provisions that define a handicap. As a result, a handicapped person may benefit from different types of assistance on condition that he or she meets a number of specific criteria, usually assessed by a medical examination. In addition to these allowances paid by social security, other measures in favor of handicapped persons have been implemented in other areas, such as:

• employment
• training
• mobility
We refer here mainly to a publication of June 2013: “Disabled Persons policy in Belgium: a survey” by the Federal Government Social Security - Directorate-General – Persons with a Handicap:

See:

The foundations of the current Belgian disabled person’s policy date back to the 1960s. The intention at that time was to give disabled persons more chances to integrate in society. Measures were taken to meet the needs of disabled persons with regards to work, housing and education, but integration was not especially focused on. Nowadays, emancipation and participation have become the key words within disabled care. This means that disabled persons must have access to all sectors of society, so not only to buildings, public transport, but also to information, to culture, to education, to employment.

Important to know: the law of 10 may 2007 concerning the fight against certain forms of discrimination prohibits any form of discrimination on the basis of a number of criteria: age, sexual orientation, civil status, birth, fortune, religion or ideology, political conviction, affiliation with a trade union, present or future health condition, disability, physical or genetic characteristics, social background or language. Any discrimination is prohibited, direct as well as indirect discrimination. “Direct discrimination” is when two persons who are in the same situation are treated differently without any objective reason. “Indirect discrimination” is when two persons who are in different situations are treated in the same way. Equal treatment is not always synonymous with the same treatment in all circumstances. For more examples go to: http://www.diversitybelgium.be/anti-discrimination-law-10-may-2007

Belgium being a federal state, composed of Communities and Regions, this leads to several competence levels. With the sixth constitutional reform (very recently approved by the Senate and the House of Representatives on 19/12/2013) the federal authority will gradually transfer its competences regarding the disabled persons to the Communities and Regions.

At this moment though the Federal Government is still responsible for:

- the invalidity insurance scheme
- the scheme for accidents at work
- the occupational diseases scheme
- the scheme for allowances for disabled persons

The Communities (Flemish Community, the French-speaking community that transferred its competences to the Walloon Region however, the German-speaking community) are competent for the personal matters such as education, professional training and welfare for disabled persons. This means that employment of disabled persons, professional training,
granting of contributions for technical aids, care, special and integrated education fall under the competences of the three communities.

Mainly 4 institutions are competent for the disability policy:

The Flemish agency for the social integration of disabled persons (“Vlaams Agentschap voor Sociale Integratie van personen met een handicap” see: www.vaph.be)

The Walloon agency for integration of disabled persons (“Agence wallonne pour l’intégration des personnes handicapées” see: awiph.be)

The Brussels Francophone service for disabled persons (“Service Personne Handicapée Autonome recherchée – Service Phare” see: www.phare-irisnet.be)

The Office for disabled persons of the German-speaking Community (“Dienststelle für Personen mit Behinderung” see: www.dpb.be)

The Regions (Flanders, Wallonia, Brussels - Capital City) are competent for territorial matters such as urban development, accessibility of buildings, mobility, culture, tourism.

The municipalities are the liaison service between the disabled person and his/her application to the DG Disabled Persons for:

- an allowance
- a parking card for disabled persons
- a national public transport reduction card for blind and partially sighted persons
- an attestation for VAT

an evaluation of the disability in order to receive a general attestation by which he/she is able to benefit from social and tax measures

What is a disability? any long-term and significant participation problem experienced by a person and attributable to a combination of functional disorders of a mental, psychic, physical or sensory nature, limitations in the performance of activities, and personal and external factors.

This definition allows for an individual approach to every person who calls on the services of the VAPH, AWIPH, PHARE-irisnet.be or DPB.

However, there are several other conditions governing access to the services offered by these community services:

**Age requirement** The person must request recognition of his or her disability before reaching the age of 65.

**Residence requirement**: the disabled person lives and resides in Flanders/Wallonia/Brussels/ German-speaking area. This means the person must be listed on the population register or immigration register and have lived in Belgium for 5 years prior to registration (or 10 years in the course of his or her life). The condition of 5 or 10 years does not apply for the citizens of the European Union.

What disabilities are we talking about in the context of this project?
Examples of some disabilities that can affect a person from experiencing the Web the way most people do.

**Motor disabilities**: like what an amputee might experience when he or she can’t use a traditional mouse, keyboard or touchscreen to interact with a web page.

**Visual impairments**: this includes varying degrees and onset of the visual impairment, such as color blindness, low vision, and complete vision blindness.

**Cognitive impairments**: e.g., traumatic brain injury, brain disease, and so forth.

**Learning difficulties**: autism, Asperger syndrome, ADHD, dyslexia, dyscalculia, etc.

**Hearing impairments**: This includes varying degrees and onset of the impairment, such as complete deafness from birth or lower hearing capabilities developed as we age.

To be mentioned first of all are the services offered by the various Ministries of Education in Belgium. In this context is also interesting the observations of the EU Commissioner Androulla Vassiliou (see the additional report: in Flanders (Belgium) 5.2% of pupils with special needs are in segregated special schools, while in Italy it is only 0.01%.

Children with special needs: inclusion of a child with special needs in mainstream education is not always possible and in extreme cases a child may be given exemption from compulsory schooling. Alternatively, perhaps due to illness or repeated periods of hospitalisation, a child may be taught at home. However, in many cases education is provided by a specialist school.

- French: l’enseignement spécialisé
- Dutch: buitengewoon onderwijs

Specialist schools are classified in eight categories. Some schools will combine more than one category. There are schools especially for the physically handicapped as well as schools for the visually impaired. Other schools cater for those with learning or behavioral difficulties. In some cases they operate as specialist units attached to mainstream schools. Most of the special needs categories are catered for with schools at pre-primary, primary and secondary level. Special education is available to children from two and a half to twenty-one years of age.


D2.1 User ICT Requirements & Specifications Report

Then we go through the various opportunities for professional training offered by the Communities and Regions under the auspices of:

For Flanders: The Flemish agency for the social integration of disabled persons (“Vlaams Agentschap voor Sociale Integratie van personen met een handicap”) see: www.vaph.be

Concerning employment and professional training, disabled people are helped by another agency: VDAB see: http://www.vdab.be/arbeidshandicap/defaultwz.shtml

For Wallonia: The Walloon agency for integration of disabled persons (“Agence wallonne pour l’intégration des personnes handicapées”) see: www.awiph.be

Concerning employment and professional training, disabled people are helped on this site by http://www.awiph.be/integration/se_former_travailler/emploi+travailleurs.html


For the German-speaking Community: The Office for disabled persons of the German-speaking Community (“Dienststelle für Personen mit Behinderung” see: www.dpb.be with an interesting webpage for all kinds of links for disabled people: http://www.dpb.be/Angebote/PartnerDG.php

3.9.2 A few examples of professional training using ICT

Considering the different disabilities and considering the various courses on offer, we noticed a whole series of courses linked to creativity, relaxation, culture, nature, wellness, empowerment, etc. with daily courses or residential courses, but of course also courses linked to a profession like construction, hairdressing, painting, catering, etc.

Only a few provide courses using specifically ICT training. This could partially be explained, certainly for people born with a disability, through the education system where children can be helped from kindergarten till the age of 21 in schools for special education, where invariably ICT will be used, depending of course on the handicap and the availability of assistive technology.

Existing online tool requirements, provisions and standard operating procedures for accessibility and usability by people with disabilities and special needs in Belgium were researched.

Interesting in this context is the VIPI project – LLP – Key Action 3 – with an excellent analysis on the ICT needs for people with disabilities: Virtual Portal for Interaction and ICT Training for People with Disabilities see: http://www.vipi-project.eu/download/

The Belgian partner in this project is: PhoenixKM BVBA, based in Kortemark. See: http://www.phoenixkm.eu/ . This company has extensive expertise in the fields of accessibility consultancy. It is focused towards the integration of people with disabilities in every aspect of daily life, and aims to achieve its goal by aggregating knowledge, expertise
D2.1 User ICT Requirements & Specifications Report

and experience in the field of education, training, and employment, and making it available to the targeted user groups through well-defined consultancy services, as well as private and publicly funded projects.

Now a few other examples:

In Flanders
Centre for Concrete Communication (Gent):
http://www.autismecentraal.be/public/index.asp?lang=EN&pid=70 offers practical modules hands on work with children and/ or adults with autism, with the intention of teaching professionals practical skills, on different topics. This centre is also part of:
Kwaliteitsvol vormingswerk voor personen met een handicap:
http://www.vzwkr8.be/
is a federation of four training organisations for people with disabilities: De Brug Gent, De Brug Hasselt, Tievo and VMG and they work closely with another federation with similar objectives: Zelf: http://www.vzwz11.be/
Kei-jong: is an association working for people with handicap between 17 and 30 years of age see http://www.kei-jong.be/ - For 2014 several residential courses in computing and digital tips and tricks will be given http://www.kei-jong.be/index.php?q=node/51. Interesting is also their learning material: 3 booklets on basic computer technology see: http://www.kei-jong.be/index.php?q=node/16
In Wallonia:
In Brussels and elsewhere in Belgium:
The Vocation Training Centres of the Braille Liga provides specially adapted training leading to a qualification for the visually impaired in order to help them acquire and hold onto a job: office technology, languages, telemarketing, telephony, reception, etc. This highly individualised training is designed to help people realise their career plans. Their Technical Adaptation Information Service offers pointers, advice and user instructions for anybody keen on trying out these assistance tools. The Service can also be relied upon to make a claim for a financial contribution from the relevant disability support agencies.
D2.1 User ICT Requirements & Specifications Report

Could also be of interest: EASPD is the European Association of Service Providers for Persons with Disabilities and represents over 10.000 social service provider organisations across Europe and Disability: http://www.easpd.eu/

3.9.3 Additional examples

Report by EU Commissioner Androulla Vassiliou, 10th of July 2012.

In short: special needs children and disabled adults still getting a raw deal from education, says the report.

The report, "Education and Disability/Special Needs - policies and practices in education, training and employment for students with disabilities and special educational needs in the EU", was compiled for the European Commission by the independent network of experts in social sciences of education and training (NESSE).

Despite commitments by Member States to promote inclusive education, children with special educational needs and disabled adults are still getting a raw deal, according to this report from the European Commission. Many are placed in segregated institutions and those in mainstream educational settings often receive inadequate support, it says. The report calls on Member States to work harder to develop inclusive education systems and to remove the barriers faced by vulnerable groups when it comes to participation and success in education, training and employment. “We have to strengthen our efforts to provide adequately financed inclusive education policies if we want to improve the lives of children with special educational needs and disabled adults. It is time to deliver on the commitments which have been made. Inclusive education is not an optional extra; it is a basic necessity. We must put the most vulnerable at the heart of our actions to achieve a better life for all,” said Androulla Vassiliou, European Commissioner for Education, Culture, Multilingualism and Youth.

Around 45 million EU citizens of working age have a disability and 15 million children have special educational needs. The report shows that in some cases, they are deprived of educational and employment opportunities altogether. Children with special educational needs frequently leave school with few or no qualifications, before moving into specialist training which can, in some cases, impair rather than increase their job prospects. People with disabilities or special educational needs are much more likely to be unemployed or economically inactive, and even those who are relatively successful in the job market often earn less than their non-disabled counterparts, the report states.

In all Member States, deprived children (especially boys) from Roma, ethnic minority and socio-economically disadvantaged backgrounds are overrepresented in special needs schools. The report questions whether special education systems increase the isolation of pupils who are already socially marginalized, reducing rather than enhancing their opportunities in life. Research suggests that such children could be enrolled in mainstream
schools if there was more investment in the development of their language skills and more sensitivity to cultural differences.

The report also highlights a wide variation between Member States as to how children with special needs are identified, as well as whether they are placed in mainstream or special schools. For example, in Flanders (Belgium) 5.2% of pupils with special needs are in segregated special schools, while in Italy it is only 0.01%. The report suggests that more needs to be done to harmonize definitions and improve data gathering to enable countries to compare their approaches more effectively and learn from each other’s experience.

Other key findings from the report: while learners with profound impairments may be difficult to include in mainstream learning environments or may be better served in separate settings, there is growing evidence that a very large number of learners with disabilities/special educational needs can be integrated into mainstream education and that quality inclusive education is good education for all learners.

While it is of vital importance to move towards more inclusive education systems, teacher education and continuing professional development have not always been organized along inclusive lines. In addition to teachers, learning support teachers and classroom assistants play a vital role in making inclusion work well in practice.

In some European countries curricula are standardized and inflexible, which makes the inclusion of disabled children difficult. Grade retention practices also undermine the principles of inclusion.

Disabled people are less likely to progress into higher education than non-disabled people.

Disabled people who obtain higher education qualifications still experience disadvantages in the labor market, but they are much more likely to be employed than less qualified disabled people.

There are no cross-European comparative data on the number of disabled students in higher education, or on the impairments and results of those who are in higher education.

There is a lack of up-to-date and reliable data on number of disabled people in employment in different EU countries.

Disability benefits ameliorate the risk of poverty and social exclusion, but are likely to be reduced due to the current public spending squeeze across Europe.

'Flexicurity' arrangements are helpful in allowing disabled people to work part-time without the entire loss of benefits.

There is considerable convergence on disability and employment policy across Europe, with most countries adopting similar employment support measures. However, employment support and vocational rehabilitation programmes vary with regard to their effectiveness in bringing disabled people into the labour market, or helping them to retain employment if they become disabled whilst working.
Several EU initiatives are already in place to strengthen special needs learning: the EU's strategic framework for European cooperation in education and training ("ET 2020") encourages Member States to provide for the successful inclusion of all learners, including those with special needs. The May 2010 Council Conclusions on the social dimension of education and training reinforced this message.

See also:  

The European Commission financially supports the European Agency for Development in Special Needs Education. The work of agency enhances knowledge on inclusive education and promotes cross-country cooperation and knowledge exchange in this field.


3.10 P11 – BDA – Bulgaria

3.10.1 National provisions and applied standards

For the purpose of this analyses the national legislation and existing projects on the field of the online tools for people with disabilities have been used.

According to the existing national legislation in Bulgaria no universal standards regarding the online tool requirements for accessibility and usability by people with disabilities and special needs have been found. Best practices in the world shows that effective e-learning for people with various disabilities depends on working and adequate legislative base on the one hand and on the effectiveness of pedagogical design of this online courses from another. According to the "Law for integration of people with disabilities" all education organizations in Bulgaria are under the obligation to provide supportive environment, suitable teaching materials, additional teaching support, assistance in the process of training and assessment of people with disabilities, but they are independent in the developing and use of online tools for people with disabilities and there are no state requirements and regulations.

During the research few projects targeted to enable students with disabilities to participate more fully in education processes and trainings.

One of these projects is the "eAccess II - Supporting Vocational Education and Training of Disadvantaged User Communities" project. It aims to provide the technical infrastructure (tools and services) and to deliver training for developing and sharing Accessible e-Training Resources and e-Training Courses that can be reusable between different e-Training Platforms and Programmes.
D2.1 User ICT Requirements & Specifications Report

A special educational software for children with special needs has been developed by Department of IT team Sofia University "St. Kliment Ohridski". "Game house" is a software package, designed especially about computer education of children with special needs. It is games based. These games are used as for mastering computer work skills, as for gaining school knowledge.

Also an English language interactive teaching programme for hearing-impaired students - "English for people with hearing loss" has been developed by a team of pedagogues and developers from South-West University "Neofit Rilski".

In a summary we can conclude that despite various projects aimed at the development of assistive technology for people with physical special needs and disabilities there is lack of legislation and regulations and standards for the online tool requirements for accessibility and usability by them.

4. International provisions and applied standards

4.1 International Framework

The World Wide Web Consortium (W3C)[5] is an international community where Member organizations, a full-time staff, and the public work together to develop Web standards. Based on the UN Convention on the Rights of Persons with Disabilities, the access to information and communication technologies, including the Web, is a recognized basic human right. In this context, parties to the convention should take appropriate actions so as to ensure the equal access of people with disabilities to publicly provided services, including information and communications. Furthermore, the term Accessibility, implies social inclusion for people with disabilities such as older people, people in rural areas and people in developing countries. More specifically, through the Web Accessibility Initiative (WAI)[6], a great effort is made towards the development of fully accessible websites by disabled people. The role of the WAI, is to develop the web accessibility guidelines, technical reports, and educational resources to help make the Web accessible to people with disabilities. In this context, WAI, has published the Web Content Accessibility Guidelines (WCAG)[7]. These consist of a guidelines framework, aiming to make web content accessible to people with disabilities. WCAG (version 1.0) were initially published on May 5, 1999 and nowadays, almost all international policies and regulations make reference to them. On December 11, 2008, the WCAG were updated and published as WCAG 2.0, in order modernize the guidelines with current technologies. At international level, the WCAG, mostly version 1.0, are used as the basis for most web accessibility policies and regulations. At European level, most EU / G20 countries have legislation or policies with regard to accessibility. The majority of European countries comply with the WCAG 1.0 but only a few have migrated to WCAG 2.0. Apart from WCAG, WAI is also developing and publishing the User Agent Accessibility Guidelines (UAAG)[8] and the Authoring Tool Accessibility Guidelines (ATAG)[9].
D2.1 User ICT Requirements & Specifications Report

The following scheme depicts some indicative web accessibility requirements that should be met in order make web content accessible for people with disabilities.

![Diagram of web accessibility requirements]

**Figure 2 Scheme on the web accessibility requirements**

**4.2 Accessibility Principles**

As published by WAI, the following accessibility guidelines are indicative of the requirements that websites, web applications, browsers and other tools should follow in order to be considered accessible by people with disabilities.

**4.2.1 Web Accessibility Standards**

These standards consist of several elements such as:

- **Web content** - referring to any part of the website (text, images, scripts etc.)
D2.1 User ICT Requirements & Specifications Report

**User Agents** - referring to software used by people to access web content (desktop graphical browsers, voice browsers, assistive technologies etc.)

**Authoring tools** - referring to software used by people for the production of web content (code editors, document conversation tools, content management systems etc)

**Assistive technology** - referring to software or hardware that people with disabilities use in order to improve interaction with the web. These include screen readers, screen magnifiers, voice recognition software and selection switches.

**Evaluation tools** - referring to web accessibility evaluation tools such as HTML and CSS validators etc.

The aforementioned elements are utilized together so as to make web content accessible. The following image depicts the interaction between these elements:

![Interaction of web elements for accessibility](http://www.w3.org/WAI/intro/components.php)

4.2.2 Perceivable information and user interface

Text alternatives for non-text content

Text alternatives are used in order to offer an equivalent to an image user experience and can be presented through various different ways. Indicatively, they can be read aloud for
people who cannot see the screen and for people for reading difficulties, they can be enlarged to custom-text sizes or be displayed on Braille devices.

Examples of such alternatives include:
Short equivalents for images such as icons, buttons and graphics
Description of data represented on charts, diagrams, and illustrations
Brief descriptions of non-text content such as audio and video files
Labels for form controls, input, and other user interface components

The respective accessibility requirements related to text alternatives are:
WCAG 2.0
Guideline 1.1 - Text Alternatives
UAAG 1.0
Guideline 2 - Ensure user access to all content
ATAG 1.0
Guideline 1 - Support accessible authoring practices
Guideline 3 - Support the creation of accessible content
Guideline 7 - Ensure that the authoring tool is accessible to authors with disabilities

Captions and other alternatives for multimedia
For hearing or sight impaired people, various alternatives exist including:
Text transcripts and captions of audio content
Audio descriptions
Sign language interpretation of audio content.

The respective accessibility requirements related to multimedia are:
WCAG 2.0
Guideline 1.2 - Time-based Media
UAAG 1.0
Guideline 2 - Ensure user access to all content
ATAG 1.0
Guideline 1 - Support accessible authoring practices
Guideline 3 - Support the creation of accessible content
Guideline 7 - Ensure that the authoring tool is accessible to authors with disabilities

4.2.3 Content presentation
D2.1 User ICT Requirements & Specifications Report

The correct presentation of content, is essential in order to make it accessible for disabled users. Indicatively, the "accessible" content can be enlarged by the users, or can be read aloud by assistive software. Furthermore, by making the content accessible, other forms of adaptation are allowed such as the automatic generation of page outlines and summaries.

More specifically, this can be achieved through several ways such as:

The proper mark-up of headings, lists and tables in the content.

The independence of sequences of information of any content presentation.

The utilization of assistive technologies in order to provide settings for the customization of the content presentation.

The respective accessibility requirements related to content presentation are:

**WCAG 2.0**
- Guideline 1.3 - Adaptable

**UAAG 1.0**
- Guideline 4 - Ensure user control of rendering

**ATAG 1.0**
- Guideline 1 - Support accessible authoring practices

**4.2.4 Distinction of content**

Making the content distinguishable, is important for both people using assistive technologies and for people who don't. As an example, people with color blindness, usually, do not use a specific assistive technology and rely on the proper design of the web content in order to provide sufficient color contrast between text and its surrounding background. The distinction of content includes several actions such as:

- Color is not used as the only way of conveying information or identifying content
- Default foreground and background color combinations provide sufficient contrast
- Text is resizable up to 200% without losing information, using a standard browser
- Images of text are resizable, replaced with actual text, or avoided where possible
- Users can pause, stop, or adjust the volume of audio that is played on a website
- Background audio is low, or can be turned off, to avoid interference or distraction

The respective accessibility requirements related to content distinction are:
D2.1 User ICT Requirements & Specifications Report

WCAG 2.0
Guideline 1.4 - Distinguishable 

UAAG 1.0
Guideline 3 - Allow configuration not to render some content that may reduce accessibility
Guideline 4 - Ensure user control of rendering
Guideline 5 - Ensure user control of user interface behavior
Guideline 11 - Allow configuration and customization

ATAG 1.0
Guideline 1 - Support accessible authoring practices
Guideline 3 - Support the creation of accessible content
Guideline 7 - Ensure that the authoring tool is accessible to authors with disabilities

4.2.5 Operable user interface and navigation

Keyboard accessibility

Making the keyboards accessible, users using voice recognition (speech input) are able to operate websites and to dictate text through the keyboard interface. In order to make keyboard accessible:

- All functionality available by mouse should also be available by keyboard
- Keyboard focus does not get trapped in any part of the content and
- Browsers, authoring tools, and other tools provide keyboard support

The respective accessibility requirements related to keyboard accessibility are:

WCAG 2.0
Guideline 2.1 - Keyboard accessible

UAAG 1.0
Guideline 1 - Support input and output device-independence
Guideline 7 - Observe operating environment conventions
Guideline 8 - Implement specifications that benefit accessibility

ATAG 1.0
Guideline 1 - Support accessible authoring practices
Guideline 3 - Support the creation of accessible content
Guideline 7 - Ensure that the authoring tool is accessible to authors with disabilities

4.2.6 Sufficient time for content reading and use

Since some people require more time than others to read and use the content, sufficient reading time is needed. This can be achieved by using mechanisms to:

Stop, extend, or adjust time limits, except where necessary
D2.1 User ICT Requirements & Specifications Report

Pause, stop, or hide moving, blinking, or scrolling content
Postpone or suppress interruptions, except where necessary
Re-authenticate when a session expires without losing data

The respective accessibility requirements related to sufficient reading time are:

**WCAG 2.0**
- Guideline 2.2 - Enough time

**UAAG 1.0**
- Guideline 2 - Ensure user access to all content
- Guideline 3 - Allow configuration not to render some content that may reduce accessibility
- Guideline 4 - Ensure user control of rendering
- Guideline 5 - Ensure user control of user interface behavior

**ATAG 1.0**
- Guideline 1 - Support accessible authoring practices
- Guideline 3 - Support the creation of accessible content
- Guideline 7 - Ensure that the authoring tool is accessible to authors with disabilities

4.2.7 Seizures occurring from content

Specific types of content can cause photo-sensitive reactions such as seizures to the users. This content is usually flashing content and should be avoided entirely if possible.

The respective accessibility requirements related to seizures are:

**WCAG 2.0**
- Guideline 2.3 - Seizures

**UAAG 1.0**
- Guideline 3 - Allow configuration not to render some content that may reduce accessibility

**ATAG 1.0**
- Guideline 1 - Support accessible authoring practices
- Guideline 3 - Support the creation of accessible content
- Guideline 7 - Ensure that the authoring tool is accessible to authors with disabilities

4.2.8 Content navigation

This requirement will enable people to navigate through web pages in different ways. Examples of different content navigation are, on the one hand the hierarchical navigation structures (menu bars) and on the other hand the search functions. In order to make content well organized and searchable:

Pages should have clear titles and should be organized using descriptive section headings
There should be more than one way to find relevant pages within a set of web pages
D2.1  User ICT Requirements & Specifications Report

Users should be informed about their current location within a set of related pages.

There should be ways to bypass blocks of content that are repeated on multiple pages.

The keyboard focus should be visible and the focus order should follow a meaningful sequence.

The purpose of a link should be clear, ideally even when the link is viewed on its own.

The respective accessibility requirements related to navigation are:

**WCAG 2.0**
- Guideline 2.4 - Navigable

**UAAG 1.0**
- Guideline 9 - Provide navigation mechanisms
- Guideline 10 - Orient the user

**ATAG 1.0**
- Guideline 1 - Support accessible authoring practices
- Guideline 3 - Support the creation of accessible content
- Guideline 7 - Ensure that the authoring tool is accessible to authors with disabilities

4.2.9 Readability of the text

This requirement is very important for various software such as assistive technology, to process text content correctly. In order to make web content readable and understandable to the broadest audience possible, web content authors should:

- Identify the primary language of a web page, such as Arabic, Dutch, or Korean.
- Identify the language of text passages, phrases, or other parts of a web page.
- Provide definitions for any unusual words, phrases, idioms, and abbreviations.
- Use the clearest and simplest language possible, or providing simplified versions.

The respective accessibility requirements related to readability of the text are:

**WCAG 2.0**
- Guideline 3.1 - Readable

**UAAG 1.0**
- Guideline 2 - Ensure user access to all content
- Guideline 4 - Ensure user control of rendering

**ATAG 1.0**
- Guideline 1 - Support accessible authoring practices
- Guideline 2 - Generate standard markup
- Guideline 3 - Support the creation of accessible content
- Guideline 7 - Ensure that the authoring tool is accessible to authors with disabilities
4.2.10 Predictability of the content

This requirement helps people to familiarize to the functionality of a website and operate it at will. It has been observed that many people rely on predictable user interfaces and are distracted by inconsistent appearance or behavior. In order to make the more predictable to users the following indicative mechanisms are available:

Navigation mechanisms that are repeated on multiple pages appear in the same place each time

User interface components that are repeated on web pages have the same labeling each time

Significant changes on a web page do not happen without the consent of the user

The respective accessibility requirements related to predictability of the content are:

**WCAG 2.0**
- Guideline 3.2 - Predictable

**UAAG 1.0**
- Guideline 3 - Allow configuration not to render some content that may reduce accessibility
- Guideline 4 - Ensure user control of rendering
- Guideline 7 - Observe operating environment conventions

**ATAG 1.0**
- Guideline 1 - Support accessible authoring practices
- Guideline 3 - Support the creation of accessible content
- Guideline 5 - Integrate accessibility solutions into the overall "look and feel"
- Guideline 7 - Ensure that the authoring tool is accessible to authors with disabilities

4.2.11 Input assistance

Through this requirement, people who cannot effectively use and interact with the web content are helped. Examples of helping users to avoid and correct mistakes include:

Descriptive instructions, error messages, and suggestions for correction

Context-sensitive help for more complex functionality and interaction

Opportunity to review, correct, or reverse submissions if necessary

The respective accessibility requirements related to input assistance are:

**WCAG 2.0**
- Guideline 3.3 - Input assistance

**UAAG 1.0**
- Guideline 12 - Provide accessible user agent documentation and help
D2.1 User ICT Requirements & Specifications Report

ATAG 1.0
Guideline 1 - Support accessible authoring practices
Guideline 3 - Support the creation of accessible content
Guideline 4 - Provide ways of checking and correcting inaccessible content
Guideline 5 - Integrate accessibility solutions into the overall "look and feel"
Guideline 6 - Promote accessibility in help and documentation
Guideline 7 - Ensure that the authoring tool is accessible to authors with disabilities

4.2.12 Compatibility of content

This requirement is important, in order to maximize compatibility with current and future tools that users are using, including assistive technologies. Through compatible content, assistive technologies can accurately process the content operating it in various ways. Indicatively, compatible content can be achieved by:

Ensuring markup can be reliably interpreted, for instance by ensuring it is valid
Providing a name, role, and value for non-standard user interface components

The respective accessibility requirements related to content compatibility are:

WCAG 2.0
Guideline 4.1 - Compatible

UAAG 1.0
Guideline 1 - Support input and output device-independence
Guideline 6 - Implement interoperable application programming interfaces
Guideline 7 - Observe operating environment conventions
Guideline 8 - Implement specifications that benefit accessibility

ATAG 1.0
Guideline 2 - Generate standard markup
Guideline 3 - Support the creation of accessible content
Guideline 4 - Provide ways of checking and correcting inaccessible content

4.3 References

Greek e-Government Interoperability Framework
Digital Strategy 2006-2013
http://www.infosoc.gr/infosoc/el-GR/sthnellada/committee/default1/
The SYMBraille project
http://speech.di.uoa.gr/symbraille/
The HOMER project
http://speech.di.uoa.gr/homer/
W3C Homepage
http://www.w3c.org
WAI Homepage
D2.1 User ICT Requirements & Specifications Report

http://www.w3c.org/wai
Web Content Accessibility Guidelines 1.0
http://www.w3.org/WAI/intro/wcag
User Agent Accessibility Guidelines
http://www.w3.org/WAI/intro/uaag
Authoring Tools Accessibility Guidelines
http://www.w3.org/WAI/intro/atag.php

5. Interviews results (Per country)

5.1 P1-CMT-Greece

5.1.1 Presentation of interview framework

Stakeholders interviewed: i) Vocational training centers/association/Chambers of commerce that offer training programs ii) Young SME employees/Freelancers with previous experience on e-learning

5.1.2 Basic results and findings analysis

5.1.2.1 Existing e-learning experience

All the interviewed stakeholders described as positive their overall e-learning experience. As major positive aspects of e-learning, the respondents mentioned the low costs incurred and the ease of access to the learning material. Additionally, the respondents identified effective time management as another positive element of e-learning since the users could access the learning material at their convenience. On the other hand, one of the most negative characteristics of e-learning, identified, was the lack of self-motivation and discipline, on behalf of the trainee, to access and finish on time the training process. Furthermore, the lack of group collaboration was another negative characteristic identified. Finally, among the negative aspects of e-learning was the absence of teacher who can evaluate and provide detailed feedback on the questions.

Among the positive characteristics of e-learning platforms, that the respondents have used, were the ease of access, the simple and user friendly interface and the absence of costs regarding open source platforms. Regarding negative characteristics of the platforms, our respondents mentioned the lack of frequent updates in the learning material, the lack of interactive means of learning (e.g. interactive quizzes) and the lack of video lectures. Finally, the respondents mentioned that in some occasions technical problems prevented the users from accessing the learning material. It should be mentioned that all respondents had experience with e-learning platforms which can be accessed online (no software installation is required).
5.1.2.2 User requirements in e-learning

Regarding the features of e-learning platform, all the respondents mentioned learning content management and curriculum mapping and planning as important. All the respondents mentioned that they would prefer a combined approach to e-learning (self-paced but with the option to implement instructor in the training process).

Regarding e-learning components, the respondents identified e-learning content as well as e-tutoring, as the most important. They mentioned that it is important for users to be able to communicate with a tutor and get feedback from him regarding their progress, however due to the need for flexibility regarding the learning process, users should have self-assessment options. More specifically, the respondents considered interactive lessons and simple e-learning resources (PowerPoint presentations and videos) to be the most effective e-learning components.

Regarding instructional methods, the most efficient were considered to be application methods such as case based exercises, simulation and serious games, as well as some expositive methods such as case studies and worked examples. The aforementioned answers were also obtained regarding asynchronous activities. Furthermore, regarding synchronous activities, our respondents mentioned virtual classroom, however they also mentioned that this feature would have a negative effect on the flexibility of the e-learning course (users would have to adjust their time schedules so that they can attend the classroom). Finally, regarding sessions of the online course, the respondents identified pre-course assessment of the user’s level and final assessment so as to be able to see the progress after the courses.

5.1.2.3 Accessibility – Usability – Customization issues

Overall, the respondents defined as user accessibility the ease of access to the online platform without software restrictions (online platform and not downloadable). Furthermore, based on the respondents, users should be able to login to their personal e-space, where they can have access to all the training material. Additionally, users should be able to download the training material so that they can access it anytime they want without having to connect to the platform multiple times. Another important aspect of accessibility was described to be easy navigation within the content (e.g. revisit the different chapters of the training material at will), as well as content visibility options such as fonts enlargement. Finally, a starting screen, featuring latest additions to the course content as well as direct links to the content material, should be provided. The user’s personal space, was not considered such an important feature of the online platform.

5.1.3 Overall recommendations

Based on the responses from the interviews, it could be concluded that the online platforms should be easily accessible and user friendly so that users will quickly familiarize with the
D2.1 User ICT Requirements & Specifications Report

interface. Furthermore, users should have the option of accessing the platforms at their convenience, thus the e-learning platform should focus on asynchronous training methods.

5.2 P2-TUKE-Slovakia

5.2.1 Presentation of interview framework

Five target users were interviewed.

5.2.2 Basic results and findings analysis

5.2.2.1 Existing e-learning experience

The respondents find that e-learning offers effective time management (learning in a convenient time and place and at one’s own pace, flexibility and independence). Among other advantages are the possibility to go back to selected parts of the course if needed, a relatively low price, and tracking of progress.

Among negative aspects, however, is the absence of a teacher who can evaluate the level of learner’s skills, adjust the course’s level as well as content to the learner’s needs, and provide feedback for the learner (especially in terms of presenting the subject, correcting mistakes and explaining why the given answers are wrong, etc.). Additional factors which might be demotivating are the necessity to be computer literate, the lack of a social interaction, and repetitiveness of tasks.

The respondents identified two types of e-learning courses. The first type is via a web interface. The advantages of this type of course are that no installation is needed and that the course can be accessed from several computers. However, the accessibility of web sites offering this type of course is typically time-limited: The user has to complete the course within the given time frame; otherwise it is not possible to finish the course after an expiry date. The other type is a software that needs to be installed, so the user is not restricted in how much time (s) he has to complete the course. A disadvantage, however, is that the user is limited to a single computer where the program is installed and the relevant data recorded.

What the respondents enjoyed about the platforms they are familiar with is easy navigation, being able to choose the order of lessons, and a wide range of activities. What they disliked about these platforms was a lack of video material, and too complex or time-consuming lessons.

5.2.2.2 User requirements in e-learning

Almost all the respondents find learning content management and learner engagement and management important for an e-learning platform. Mapping and planning and tools and


services are considered important by fewer respondents. A combined approach to e-learning (self-paced as well as instructor-led) is the most popular choice among the respondents.

E-learning content, as well as e-tutoring, e-coaching and e-mentoring are the preferred e-learning components in our respondents. A variety of e-learning components, including interactive e-lessons, electronic simulations, simple learning resources and examples, audio and video files, as well as PowerPoint presentations, are considered effective by our respondents.

Application methods and expositive methods are preferred by the respondents. Discussion fora and correspondence are thought to be suitable asynchronous activities. Synchronous activities, however, are dispreferred by some of our respondents, as in their opinion these activities run against the idea of e-learning and its main advantage of effective time management. Other respondents, though, feel that whiteboard, teleconference, chat, live webcasting or a virtual classroom are important e-learning activities.

In general, the respondents find all the sessions listed in the questionnaire important (i.e. kick-off, pre-course, cycle, final assessment, feedback and conclusion).

5.2.2.3 Accessibility – Usability – Customization issues

The respondents define ease of access as simply entering a username and a password, an interface that can be used intuitively (e.g. as via a web browser), and applications that require no training. Ease of use is defined by the respondents as being able to run the program on more than one computer, whether given by viewing material online or downloading it. Easy navigation is also important. Features that most of the respondents require in the starting screen are direct links to content and/or unfinished material, newsfeed and updates.

A provision of accessibility for persons with specials needs is important to some of the respondents (as it increases the employability of these people) but to others its importance has to be valued against the additional costs.

The respondents believe that user customization is not important. Personal space for hosting user’s documents is, however, important for the respondents, especially because it allows the course to be accessed from several computers.

5.2.3 Overall recommendations

Based on our findings, we recommend the following for an e-learning course development:

1. The used platform should employ a common user interface;
2. The course should be accessible to a user from a number of computers;
3. The course should limit its use of synchronous activities.
5.3 P3-Navigator Consulting-UK

5.3.1 Presentation of interview framework

Personal interviews were held with seven respondents in the United Kingdom:

1. A principal banker in an international development bank (Uzbek national), assigned to the London head office
2. A senior banker in an international development bank (Ukrainian national), assigned to the London head office
3. The head of mergers & acquisitions of a private equity fund (Greek / UK national)
4. The managing director of a branding consultancy (UK national)
5. A researcher in a UK semi-governmental skills organisation (UK national)
6. The HR manager of a specialised glass manufacturing firm (UK national)
7. A training manager in a UK semi-governmental cultural and language organisation (UK national)

All seven have experience with eLearning platforms.

5.3.2 Basic results and findings analysis

5.3.2.1 Existing e-learning experience

Positive Aspects

- E-Learning allows individual trainees access to training opportunities during working hours as well as in parallel to them. Most employers are willing to allow the trainee to spend 1 hour of working time per day in training, providing this time is matched by the trainee during his or her free time at a ratio of 2:1 or greater ratio.

- E-Learning can be leveraged to provide greater intakes of students for larger companies. The challenge is to calibrate each intake so that starting competencies and skills are more or less level.

- A classroom training course is delivered once. An eLearning platform can exist as a lasting resource, enabling trainees to refer back to online training materials and reinforce and refresh their prior knowledge.

- E-Learning also enables trainees to train while at the workplace. This eliminates the need for long absences, and enables work to continue with only slight interruptions.
D2.1 User ICT Requirements & Specifications Report

• Particularly younger demographics are now fully attuned to an online learning and social environment. It is more challenging to engage them in classroom or seminar-style learning sessions, where they are distracted by Facebook and other online platforms.

• Each individual learns at his or her own pace. This is particularly invaluable for business English communication, which requires individual learning and adaptation.

• If the eLearning platform can be customized, then it provides the opportunities for employers to reinforce their own brand as well as introduce content and validation measures specific to their own sector and corporate policy.

Negative Aspects

• E-Learning platforms are typically seen as the remit of large enterprises with the resources available to spend on development, testing, validation and continual development.

• The experience of most trainees and HR managers has been on limited-scale platforms, where the eLearning platform has been used to coordinate discussions or to access information posted online. The full range of eLearning applications has rarely been experienced. A subset of eLearning in the business English training, however, is seen in “language lab” applications, which have been in use for over 20 years. As a result, there is a good deal of skepticism as to whether eLearning for business English can be effective without the presence of an excellent moderator or trainer.

• Most of the managers interviewed identify the fact that the eLearning should include validation methods if it is to be effective. Otherwise, they fear that eLearning will involve passive absorption rather than effective mastery of skills.

Type of eLearning Materials

The interviewed managers are familiar with the following applications:

• British Council online learning
• Cambridge English testing
• Rosetta language training (via CDs)
• TOEFL English testing
• University-style intranets for curriculum posting, essay submission and online discussions
• 2 companies have proprietary, in-house systems but these are mainly for posting curricula and corporate standards: training is delivered in-house by certified trainers

• Several managers have earned CFA and other professional certification which are partially delivered online

• Several managers have earned their MBAs taking the GMAT using online study tools.

Positive and negative aspects have been discussed in sections 1.1.1 and 1.1.2 above.

Effective Training Methods

Only e-Learning: 2/7
Only Traditional Learning: 7/7
D2.1 User ICT Requirements & Specifications Report

Blended Learning: 7/7

These questions have not been described correctly. The respondents point that choices 1 and 2 are false choices, since everyone is already aware of blended learning possibilities in business. Moreover, if only eLearning is available, the suitability depends on the quality of the platform, not whether it is the sole choice or not.

Special Needs

No respondent was aware of any special needs platforms.

Legal Framework

No respondent was aware of the legal framework for ICT requirements for people with special needs.

5.3.2.2 User requirements in e-learning

E-Learning Approach

The respondents prefer to have a combination of both. However, several commented that the question is not correctly phrased. An eLearning platform can be both self-paced and facilitated.

The question should be phrased whether the eLearning platform should include human moderation or whether it should be exclusively database-driven.

Effectiveness

The selections have not been selected correctly. Any eLearning platform by definition has a virtual classroom and e-learning content. E-tutoring and collaborative learning were seen as important by everyone.

Content

All content recommended in the survey was accepted. Two additional components were requested:

- A module on corporate policies or other customised area where the HR managers can upload their own specific materials or samples.
- Pre- and post-learning validation and testing. The former should include a diagnostic to determine existing language knowledge.

E-Tutoring

All respondents answered “yes”. However, four respondents indicated that Business English training is possible without eTutoring. It is a strategic choice of the platform, not a
D2.1 User ICT Requirements & Specifications Report

preference of the beneficiaries. This question is a repetition of what was already asked before.

Virtual Classroom

All respondents answered “yes”. The respondents indicate that by virtual classroom, they understand an online interface with different modules, resources, validation sections, learner / teacher profiles, etc. This is seen as a default component of any eLearning system. This question is a repetition of what was already asked before.

Synchronous / Asynchronous

All respondents answered that they preferred a blended system. However, they specify that the system can work either way. The issue is not whether this is synchronous or asynchronous, but must be evaluated based on:

- The total time needed for each course module
- The quality of the instructor and other participants
- The cost of the training.

As with other questions, this one has not been phrased correctly. It cannot be correctly answered as stated.

Synchronous Applications

Comments from the interviews:

- Chat / IM needs to be decided whether this is between trainer and trainee, or different trainees, and what discussion standards and moderation standards will be used.

- Video conference will differ based on the location and number of participants per class. Is the video one-way, i.e. trainer to trainee, or will each trainee and trainer be able to interact online using a video application. This is seen as being technically difficult and expensive from both the IT aspect as well as class organisation. Moreover, many people feel embarrassed to be on video: if this feature is provided, it should include a camera on/off option with an avatar or user photo instead of a live image.

- Audio conference is seen as being useful, but many questions exist on moderation of group discussions and the number of people discussing at the same time. Online learning groups of more than 5 trainees are difficult to coordinate. It is difficult for a trainer to elicit participation from each member online if there are more than 5-6 people. So this application is a function of course structure, not the technical aspect.

- Live Webcast is seen as being useful. This implies that the course will have a live trainer, who can also take some form of questions or dialogue from the audience. To have a static live webcast without interaction is not seen as being very useful.

- Application Sharing: if this refers to joint work on documents or other applications, it is seen as useful. Otherwise, it is seen as standard.
D2.1 User ICT Requirements & Specifications Report

- Whiteboard: This is seen as useful, as are its related applications such as a bulletin board or comment function on discussions or questions.
- Polling: This is seen as useful.

Asynchronous Applications

Respondent commented that the selection of asynchronous tools did not cover the range of applications one would expect.

- Email: This should be an online messaging system. Integration with an email client is important, but not essential.
- Discussion Forum: This is important, particularly in the case where a comments section and discussion string or thread is used. This should be used for mandatory, trainer-driven topics as well as some discussions (in some sections) that trainees can add themselves.
- Wiki: This was not held to be important. The concept of a Wiki is that this is user-generated content. It is difficult to see how this can be used in the context of business English training.
- Blog: Difficult to see the relevance, unless part of the learning process is to require each participant to keep a blog of daily activities, impressions, etc. In this case, the question of whether this should be public or not is important to answer in advance.
- Webcasting: The respondents agreed that the webcast should include “static” instructional videos or simulations (e.g. a job interview).

Several additional tools are necessary or desirable here:

- An online dictionary or glossary is seen as more important and more relevant than a Wiki
- There is no reference to validation or testing
- There is no reference to learning management

Training Tools

The choice of tools is repetitive or self-evident. Why are we asking if the tools should include an “eLearning Course” if the entire point of the eLearning platform is to offer eLearning?

The main tool missing here is essays or writing samples. These are critical in learning how to write properly, and must be included as a core tool.

5.3.2.3 Accessibility – Usability – Customization issues

Student Interactivity

In general, the respondents indicated that this was important, with the following caveats:
D2.1 User ICT Requirements & Specifications Report

- Interactivity must be structured in order to bring results. What is the structure and purpose of the interactivity? Does this refer to online interaction or also physical interaction, i.e. to write case studies?
- We can’t answer this question unless we first know the duration of the training and the costs.
- It will depend on whether students from other organisations will participate, or only students from our enterprise. If it is a multi-enterprise module, then we need to prepare for issues such as confidentiality.

Student-Teacher Interactivity

In general, the respondents indicated that this was important, but it depends entirely on the structure, duration and costs of the training. Several components of business English training can be done entirely online without teacher interaction. A complete offer needs to be presented in order to determine whether teacher interactivity is necessary.

Ease of Use and Ease of Access

The platform should be cloud-based. Every applicant should be able to quickly and easily create a profile and access the system. Every company should have an oversight onto which applicants have completed the programme and with what scores; which programmes are underway, etc. Any text or video files should be “light” and use streaming technology to avoid lengthy download times. Anti-virus protection and data protection are necessary.

5.3.3 Overall recommendations

This survey does not really support our objective of defining the learning content or structure. It focuses on largely theoretical tools presented out of context, making it difficult for a respondent to give qualified feedback. It does not properly define the testing or learning protocols or outputs, making it impossible to understand what the benefit of this platform will be. The survey results are repetitive and needlessly quantitative. For instance, will there be a quantitative ranking of tools based on all user feedback? Does this really help?

We believe it is more important to design an effective eLearning platform taking into account:

a. State-of-the-art in web design: clear, cool design, without clutter
b. Accepted generation applications or tools, e.g. html5, CSS, etc.
c. Applications adapted to the learning subject, outcome and theme, not to vague or open-ended lists of options
d. Social networking-level user interactivity
e. Means-tested and results-oriented validation and testing
D2.1 User ICT Requirements & Specifications Report

f. Content available according to three levels:
   • “Freemium” content – free teasers, diagnostics, etc. to attract trainees and companies
   • Content available during courses (which are paid for)
   • Content available after course termination (available as a lasting resource)

The topic of learning management, entry testing and validation is entirely missing from this questionnaire.

The key technical question is the following: how will the platform be developed? There are three different options:

1. Native programming and development
2. Use of existing modules and applications such as Bootstrap
3. Use of an existing eLearning platform (as discussed)

Accordingly, some thoughts on the eLearning components follow.

3.1 Profile Creation
Every trainer, trainee and company HR manager needs an individual profile. This should include the basic fields, i.e. First Name, Last Name, photo upload, Title, Company, Department, Contact Information, Brief Description.

Every company manager should be able to see the profiles of their trainees together with analytics.

3.2 Analytics and Learning Management
The platform should provide analytics per trainee, including:
   • Usage analytics: logins, time spent online, questions answered, modules completed
   • Learning outcomes

The platform should also summarise results:
   • Per trainer
   • Per training class or module
   • Per company

3.3 Baseline Diagnostic
Every user should complete a baseline diagnostic to determine their current language level. This can be done either once, or at the beginning of each module.

3.4 Open-Ended Versus Closed-End Questions
Open-ended questions, i.e. writing samples, are going to be crucial for learning outcomes.
Therefore, the eLearning platform must integrate the following features and address the following issues:

• Trainers: How will trainers be selected? How can we be sure these trainers are adequate to the task of online learning in the subjects specified?

• Facilitated Learning per Module: Not every module needs the same amount of trainer input.

Each module should be developed based on a “best fit” approach. However, the total time of trainer input is crucial, since this determines pricing of each course. Compromises will have to be made.

• Facilitated Evaluation per Module: Should each trainer do all the evaluation per module? Or can this be done by different people?

• Writing Evaluation Criteria: What criteria will be used to score writing samples? How will the trainers be trained? Organisations such as the British Council spend extensive resources developing scoring standards and training trainers. What measures will our eLearning platform use?

• Oral Discussions: The same issues apply to discussion skills. What standards will apply?

How will these be determined and scored?

3.5 Post-Module Evaluation / Validation
Each module should include a multiple-choice validation at its conclusion. Some of these, however, require human scoring (e.g. for writing samples), as discussed previously.

3.6 Group Communications
In order to function properly, group communications need to be:

• Structured. The trainer must elicit participation from each group member. This can be difficult for non-native speakers.

• Small. Since we agree communication is needed, it follows that class size cannot be large (particularly if audio or video will be used). We are therefore targeting a maximum class size of not more than 8. This will increase the costs per student.

• Light. We have not yet seen an effective and free video conferencing system which accommodates over 5 users. The question as to whether audio or visual communications will be used should be addressed with cost and bandwidth criteria in mind.

• Moderated: Moderation guidelines will be required, and the trainer or other online moderator should be able to delete and restrict improper comments, and censure or expel users who violate policy. This needs to be inserted into the Terms of Use.
3.7 Learning Outcomes and Validation
As mentioned previously, we believe it is important not to reinvent the wheel. The eLearning platform should be congruent with existing, high quality certification standards such as Cambridge or British Council. We do not have the resources available to develop our own learning outcomes and validation to the proper extent.

There are far more comments which can be made on each learning module.

5.4 P4-First Elements-Cyprus

5.4.1 Presentation of interview framework
The quantitative research is the selected research type for conducting the study on to investigate the use of the e-Learning environment in Cyprus. The general population for this study contains young SME’s employees and Freelancers with previous experience on e-learning. The respondents were asked a set of structured questions and their responses were tabulated. The respondents were asked to express their views regarding the current E-Learning practices in Cyprus as well as their personal perceptions and preferences towards the e-Learning environment in Cyprus.

5.4.2 Basic results and findings analysis

5.4.2.1 Existing e-learning experience
Participants were asked for their opinion regarding the use of the e-Learning environment. Most of them agreed on that the e-Learning environment is user friendly. Most respondents seem to feel that it is simple to use. Interestingly, the flexibility e-Learning is offering influenced the decision to use it. Most respondents also refer that the e-learning courses offer accessibility to people with disabilities. In addition, e-learning reduces the overall cost of an educational program but in the other hand there are observed difficulties concerning the collaboration with the classmates as well as the assessment of student performances.

5.4.2.2 User requirements in e-learning
Most participants noted that the most important figures for an e-learning platform should be the Learning content management providing learners with quality content in many different formats and learning modalities as well as the Curriculum mapping and planning. Most respondents also agree that LMS is the most efficient way to list courses, register participants, track registrations and completions, and provide all the volume-related (level 0) information required to manage the learning function. A few respondents observed of how important mapping tools can be in building a collaborative learning community through the development of a cohesive curriculum.

A combined approach to e-learning (self-paced as well as instructor-led) is the most popular choice among the respondents.
In addition, e-learning content as collaborative learning noted as the most important and effective e-learning components as learners actively construct new ideas through collaborative activities and/or through dialogue. It was also observed that interactive e-lessons as well as electronic simulations are effective e-learning components regarding e-learning content.

Moreover, collaborative learning was chosen as an instructional effective method by the most respondents as it allows the trainer to support learners. In the other hand, it allows learners to develop their independent learning skills by working individually on a portion of a group project that makes them accountable not only to the instructor but also to team member. Collaborative activities such as chats, forums, blogs, wikis, file sharing are helpful tools that support both teaching and learning activity.

According to the respondents the synchronous activities preferred are Live webcasting, Application sharing and Whiteboard. In the other hand, they were chosen asynchronous activities such as wiki and blog.

5.4.2.3 Accessibility – Usability – Customization issues

Most respondents analyzed the ease of access by taking into consideration that a significant number of users are non-experienced, defining the ease of access in an e-learning platform as simplicity of use (user friendliness) of the system for a non-experienced user. They also added that provision of accessibility for people with special needs is very crucial. Characteristics such as: simplicity, a few navigation steps, the minimum technical installations and adjustments in local machines enclose the ease of access.

The user’s customization was considered as very important justifying that newsfeed and content updates should be included in the starting screen of an e-learning platform.

5.4.4.3 Overall recommendations

The equipment should be well designed oriented to the target audience.

5.5 P5-The Elephant-Netherlands

5.5.1 Presentation of interview framework

Interviews with 3 young SME employees/freelancers (2 F, 1 M) and 2 trainers from two different training organisations (1M, 1F)
D2.1 User ICT Requirements & Specifications Report

5.5.2 Basic results and findings analysis

5.5.2.1 Existing e-learning experience

Positive aspects

<table>
<thead>
<tr>
<th>Feature</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-determination of when and where and how you are studying</td>
<td>5x</td>
</tr>
<tr>
<td>Easy access</td>
<td>2x</td>
</tr>
<tr>
<td>You don’t have to organize it by yourself</td>
<td>1x</td>
</tr>
<tr>
<td>You cannot loose materials</td>
<td>1x</td>
</tr>
<tr>
<td>Opportunity to review prior results and outcomes</td>
<td>1x</td>
</tr>
<tr>
<td>It works faster</td>
<td>1x</td>
</tr>
<tr>
<td>Direct confrontation with native speakers</td>
<td>1x</td>
</tr>
</tbody>
</table>

Negative aspects

<table>
<thead>
<tr>
<th>Feature</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>No direct personal contact with trainer/coach</td>
<td>5x</td>
</tr>
<tr>
<td>No direct personal contact with other students</td>
<td>5x</td>
</tr>
<tr>
<td>No direct help and support, no direct answers on questions</td>
<td>3x</td>
</tr>
<tr>
<td>Difficult if you don’t understand easily the content</td>
<td>1x</td>
</tr>
<tr>
<td>You have to do it by yourself – you need self-discipline</td>
<td>2x</td>
</tr>
<tr>
<td>You need a strong motivation to finish the study</td>
<td>1x</td>
</tr>
</tbody>
</table>

5.5.2.2 User requirements in e-learning

Features considered as important

learning content management (creation, storage, access to resources) is seen as very important (5x), with exception of storage: most of them prefer storage on their own pc, some thinks it should be optional;

learner engagement and management (learner information, progress tracking) is also seen as very important (5x), 2 mention especially the opportunity to do self-tests and examens with the option of self-control and self-correction

curriculum mapping and planning (lesson planning, personalized learning experience, assessment) is also seen as important by 5 persons

tools and services (forums, messaging system, blogs, group discussions) are seen (4x) as extra’s, not really necessary, and should be optional; one person however thinks this is very important and makes the instrument more attractive

General approach

Preference is a combination of e-learning and real time group sessions and a combination of self-paced learning and facilitated/instructor-led learning (4x), one person wants as much as
D2.1 User ICT Requirements & Specifications Report

possible online only; one person mentions that the group sessions should be in small groups; another says they should be optional but not obligatory

Continuing studying should be on basis of test results (5x)

Important is that there is clear communication about procedures and process (2x)

Simple and clear instructions are very important (5x)

Individual support is seen as less important by 2 persons, but it is important to have a personal coach/tutor, mainly by mail, chat or sms (5x); 3 persons say that is important to get quick answers if you have questions

Preferred study time is maximal 1 year (4x) or 2 year (1x)

E-learning components considered as important

1) e-learning content (e.g. simple learning resources, interactive e-lessons) is seen as most important (5x); 3 persons explicitly mention the relevance of interactive lessons

2) e-tutoring, e-coaching, e-mentoring (individual support and feedback to learners through online tools and facilitation techniques) is seen as important by 3 persons; 2 persons think it is less important; 2 persons explicitly mention the relevance of receiving personal feedback

3) collaborative learning (e.g. discussions and knowledge-sharing to working together) is seen as important by 2 persons, as less important by 1 person and as not important by also 2 persons; collaborative learning should be an option maybe, not obligatory

4) Virtual classroom is by 3 persons seen as extra, but not necessary; one person states that it should not make the course more expensive; 2 other persons think that a virtual classroom should be necessary an integral part of an e-learning platform

E-learning components considered as effective regarding e-learning content

simple learning resources (documents, PowerPoint presentations, videos or audio files) and interactive e-lessons (interactivity in the form of questions and feedback etc) are seen as extremely important by all 5 respondents

job aids (Job aids provide just-in-time knowledge e.g. technical glossaries and checklists) are by 4 persons seen as important as well; 2 persons mention specifically the option of a good dictionary

electronic simulations (Simulations are highly interactive forms of e-learning) are by 2 persons seen as very important and attractive, while 3 others see it as an interesting extra option, but not necessary
D2.1 User ICT Requirements & Specifications Report

Efficient instructional methods

Expositive methods are seen as important, especially worked examples (5x), followed by presentations and case studies (each 4x) and demonstrations (3x).

Application methods are also seen (e.g. demonstration-practice method, case-based or scenario-based exercises, role play, guided research and project work) as also seen as important (5x); job aids is seen as less important (3x) and simulations and serious games is only important for 2 persons.

Synchronous activities considered as important
chat and IM 5x important
virtual classroom 1x important (and 1x optional)
video and audio conference 1x important, 3x optional, 1x not important
live webcasting 1x important, 3x optional, 1x not important
application sharing 4x important, 1x less important
whiteboard 5x important
polls 1x important, 4x optional

Asynchronous activities considered as important
Correspondence 5x important
discussion forum 1x important, 3x less important, 1x optional
Wiki 1x important, 1x less important, 3x not important, optional
Blog 1x important, 1x less important, 3x not important, optional
webcasting 3x important, 2x not important

5.5.2.3 Accessibility – Usability – Customization issues
There is a need for personalization of the desktop of the e-platform.

5.5.3 Overall recommendations
As mentioned above.

5.6 P6-WSIIZ-Poland

5.6.1 Presentation of interview framework
For the need of the EWC project 5 in-depth interviews have been conducted about the user requirements on e-learning.

The interviewed group included:

- 3 young employees of medium-size companies located in Rzeszow: one (aged 24) operating in the IT industry, one (aged 25) in the aviation industry, one (aged 24) in a consulting company
- 2 managers of adult education companies (one specializing in IT courses, one with focus on project management and HR)

None of the persons has been disabled.
5.6.2 Basic results and findings analysis

5.6.2.1 Existing e-learning experience

Young employees:

Two had previous experience with e-learning in two ways. Firstly, in the university about 15% of the curriculum was delivered in an e-learning system; the courses were available both as web-based training and on CDs that were distributed to the students by the university. Secondly, in their work environment where some courses are available as an obligatory part of introductory training in the corporate intranet as self-study material and refer to the company organization structure, procedures and policies (e.g. health and safety, protection of information policy). One of the respondents had no e-learning experience.

Managers:

Both participated in e-learning courses. In case of the IT company it was a part of the internal certification programme (for the position of exam administrator). In case of the consulting company it was a part of blended training (an English course by one of the local language schools). On the other hand, the IT manager offers e-learning courses as a part of her business offer. The company she runs is a certified training center of one of the world’s biggest IT companies so they offer on-line training and exams.

The manager of the other company offers traditional classroom training only but considers trying an e-learning platform (provided that the company receives grant for this purpose).

5.6.2.2 User requirements in e-learning

The expectations of the respondents towards an effective and friendly e-learning platform and courses may be summarized in the following way:

1. General: for those who got used to traditional training frameworks e-learning may be a good way to supplement classroom courses – at the beginning of the course as an introduction to the subject, on an ongoing basis as a repository of materials, after the completion of the course as a follow-up opportunity.

2. Advantages: flexible, available on-demand, time- and cost-effective, comfortability, good prospects for e-learning especially for younger generations; possibility of simultaneous training delivery to a large number of employees in various and dispersed locations; standardized content, a tool to measure employee motivation to learn

3.Weaknesses: organisations not ready to use e-learning, low quality of courses (rather e-books than real courses), boring and unattractive appearance of the course, hardly applicable to learning some skills (negotiation skills, leadership, assertiveness, etc.)

4. Desired features of the course (followed by a number of supporting responses out of 5 respondents):
D2.1 User ICT Requirements & Specifications Report

- accessible in the Internet (5/5)
- quick transfer of data (5/5)
- interesting visualization, not overloaded with running text, not a Power Point presentation (5/5)
- including interactive quizzes (5/5) and self-assessment tests (4/5)
- possibility to go through the course progressively and to track individual progress (5/5)
- user-friendly interface (3/5)
- preferred tools for language learning: webcasts (video and audio) – 5/5, webinar with a native speaker (3/5), web dictionary 3/5, crosswords (2/5), audio recording to evaluate pronunciation (1/5)

5.6.2.3 Accessibility – Usability – Customization issues

Accessibility
As none of the users was a disabled person the issue of accessibility for users with special needs was not mentioned in the interviews.

It was mentioned, however, that the course should be available in the Internet with individual accounts. One of the respondents suggested that the course could be adapted to the needs of mobile phone users.

Usability
Remarks about the tools – see above. A friendly user interface recommended.

One of the respondents (aviation industry) suggested that the course could be designed so that it can be integrated with other company e-learning courses offered to employees as an introductory package.

Customization
The key aspect of customization was that the user should have the opportunity
- to choose the sequence of modules he/she wants to follow
- to be able to track individual progress and achievements
- to have space for individual portfolio of files / documents

5.6.3 Overall recommendations
Summarizing the above:
- attractive design, not a Power Point presentation,
- including video and audio files, interactive puzzles and tests
- possibility to track individual progress
- available in the Internet
5.7 P7-LatConsul-Latvia

5.7.1 Presentation of interview framework
Stakeholders interviewed: 2 chambers of commerce, 1 young SME employee, 1 freelancer and 1 vocational training center.

5.7.2 Basic results and findings analysis

5.7.2.1 Existing e-learning experience
Every stakeholder evaluated his experience in e-learning as positive, pointing out that effective time management is the most important advantage of e-learning, as well as accessibility for various target groups. Cost effectiveness was the other positive aspect.

Negative aspect of e-learning mentioned in the interviews: the motivation challenge and the importance of self-discipline. Lacking these two the training process is not efficient. Lack of group dynamics, engagement in e-learning process was the next mentioned disadvantage.

Regarding the e-learning platforms that target group were experienced in, the positive aspects were: free of charge, helps to optimize the work organization, individually oriented learning process takes into account the learning needs of every participant; (you don’t need to wait for the rest of the group to finish the task or proceed the training; or you can spend more time in some aspect not bothering others.)

As negative aspects were mentioned lack of individual approach – in many cases there is one general ‘downgraded’ level that does not reflect the reality. Other negative aspects of the e-learning platforms – sometimes the learning content is not updated – not based on the needs of the trainers, for example, the vocabulary of English. Technical problems that arise cause additional stress.

5.7.2.2 User requirements in e-learning
Learning content management, as well as learner engagement and management and tools and services were the most commonly chosen features that target group mentioned as important in an e-learning platform.

The most effective approach was combination (3 respondents), other respondents chose self-paced and instructor-led.

Important and effective e-learning components were mentioned e-learning content, then collaborative learning and virtual classroom.

Regarding the e-learning content, the most effective e-learning components were mentioned interactive e-lessons, as well as job-aids and electronic simulations.
D2.1 User ICT Requirements & Specifications Report

Between the instructional methods the most efficient were expositive methods, as well as application methods.

Chat, webcasting, video and audio conference, polling – were mentioned as important synchronous activities. Still, one respondent argued that there is no value and need for the chat or application sharing – that is not important for the training process and helps only to maintain the communication. The importance of the guided chat was mentioned –otherwise the false answers and solutions will start to circulate that could cause the miscomprehensions.

Within the asynchronous activities the correspondence was the most important in e-learning, as well as Wiki.

Feedback, Cycle of the learning events were mentioned as the most important sessions of the on-line course.

5.7.2.3 Accessibility – Usability – Customization issues

Every respondent stressed the importance of the user friendly aspect of the e-learning training. That should be tested and piloted on the potential target group.

First step approach was mentioned – when the trainee enters the page and without the registration he/she can start to use the platform/course and that doesn’t provide the additional reading/watching the tutorials. Wide use of visual material is suggested, instead of texts and explanations, as well as direct links etc. Materials should be downloadable and easy modified, so you don’t need to download additional programs to use the material. Still, the possibility to storage the learning materials on-line is important as well (then the materials should open in another window).

User customization is important. Starting screen should be divided for two target groups: first time users and regular users. For the first time users the starting screen should be with general information, mostly visually expressed, but for the regular users the interface and the starting screen should include the newsfeed, updates, tutorials and case studies of how others are using the platform.

Regards the personal space, 4 respondents argued that there is no need for user’s personal space, but 1 mentioned that personal space is important.

5.7.3 Overall recommendations

Based on information we gained during the interviews, the most common suggestion and expectation from the new e-learning platform was the importance of user friendly factor. People won’t spend the time to learn how to use the platform or participate in training, they expect the trainer to demonstrate or if there won’t be the tutor and the platform won’t be user friendly, they will not spend additional time to learn how to use it.
5.8 P8-CREA-Spain

5.8.1 Presentation of interview framework

CREA has interviewed six stakeholders:

- Three professional associations which are members of CREA:
  - CEZ – Confederación de Empresarios de Zaragoza
  - CEOS CEPYME Huesca - Confederación Empresarial de la Provincia de Huesca
  - CEPYME Aragón - Confederación de la Pequeña y la Mediana Empresa de Aragón

All of them design and develop training programmes for jobseekers and employees, both online and face-to-face.

- Three young SME employees (from different SMEs) with previous experience on e-learning (organized by the company they work at or on their own).

5.8.2 Basic results and findings analysis

5.8.2.1 Existing e-learning experience

We can find different answers about the positive and negative aspects of e-learning for both types of respondents; associations and SME employees. Whereas associations coincide on the lower cost, ease of adaptation to companies’ needs and ease of monitoring of the e-learning. SME employees stress, above all, the freedom and flexibility of the e-learning: learn at your own pace and taking the time you need, also they can spend more time in some subjects and less in other that they already know, you choose the time of learning, and for that reason, it is easy to adapt to work schedule and personal situation.

Among negative aspects, most of them coincide in the difficulty to keep students motivation and attention. Students need a strong self-discipline. And also communication among students and teachers is not ideal and could cause multiple misunderstandings.

Positive aspects of e-learning platforms are interactivity, a well-organized syllabus, easy access to materials and easy use, as well as easy access from different computers. They must be also intuitive.

For the negative ones, lack of dynamism and of interactivity, and problems with system compatibility are stressed by all respondents. Other has added that some platforms she has
used did not let her to download (nor print) materials and had to study them online (which is very tired and discourage the study). One association said that the lack of a webmaster lengthen the solution of any working problem.

5.8.2.2 User requirements in e-learning

Question 3. These are all the features respondents find important for an e-learning platform:
- Dynamism, interactivity, speed, flexibility and a system that catches student’s attention.
- Planning of activities, calendar and content. Clear and well organized contents. Easy and coherent distribution of the content. Easy access and use.
- Good monitoring of student progress.
- Group discussions with the tutor (to guide the subjects of discussion, to moderate them).
- Compatibility with different operating systems.
- Ability to redesign the platform depending on students’ needs and experience.
- Good tools to promote the communication between tutors and students. Chats or Skype meetings to ease the communication.

It seems that the combination of self-paced and a tutor is the more convenient approach for all interviewed people. The tutor will help to lead the method and the rhythm, and also to solve doubts.

Question 5. E-learning components.
3 out of 6 respondents answered that interactive sessions and e-tutoring are the most important and effective e-learning components. Virtual classrooms are also declared to be important, so any interaction with colleagues and/or with tutor seem to be the preferred component of the e-learning.

Then some said that the feedback to learners and the possibility to share opinions and knowledge among users are extremely important in order not to lose the interest, avoiding the sense of being alone and also to check your own evolution.

Again they repeat that a quality content and a easy access to it is vital, and suggest as a good idea to include sections with more information, links, other materials, etc.

Four out of six respondents thought that the selection of these components depend on the subject. Nevertheless, simple learning resources are proved to be effective for all subjects.
D2.1 User ICT Requirements & Specifications Report

Video and audio files are suitable for technical subjects or for learning languages, and could be a good complement.

Then, practical exercises to check the progress (self-evaluation) are also popular. And technical glossaries have been useful for two participants, instead of look for the meaning in other external sources.

Question 7. Instructional methods.
According to respondents’ experience, it will be a combination of application and expositive methods. Indeed, one association said that it also depends on the subject, as for example, learning languages requires application methods, whereas for other subjects like environment, quality, etc., expositive methods are enough.

One participant (SME employee) gave an example of a course she performed. The course included interactive presentations with multiple answers that lead the user to different results.

Question 8. Synchronous activities.
Virtual classrooms, video and audio conferences and chats were referred to be the most effective. Although one association added that video and audio conferences are only useful for tutoring.

Interactive whiteboard is becoming more popular and the association and the employee that used it said that the results were very effective, especially if the content has a technical or visual component.

Question 9. Asynchronous activities.
Some of them think that these kind of activities are not as important as synchronous activities. They are seen as a complement to them.

Discussion forums could be interesting if they are coordinated in some way (by a tutor, e.g.). Also correspondence between users and tutors is useful to share doubts and documents.

Finally, two associations consider blogs as a useful tool for e-learning courses, but from their experience, users don’t take the most of them and the participation tends to decline at the end of the course. Maybe it is not necessary to make a blog just for one course, but for several courses that share subjects or objectives.

Question 10. Sessions.
Here all share the same idea, that a good pre-course activity to explain the objective of the course, how the platform works, evaluation parameters, etc. is extremely important. If someone is not able to attend to that event, a manual containing that information could be uploaded on the platform. Also feedback is vital, as well as a final assessment (test, reports, evaluations, etc.).
D2.1 User ICT Requirements & Specifications Report

Just two participants said that a kickoff event could be important to meet the other users in an informal environment.

5.8.2.3 Accessibility – Usability – Customization issues

Question 11. Ease of access.

A simple platform that can be used by multiple people with at least a general/basic knowledge of IT. Or by people that have not used other online tools before. Simplicity, clarity and good structure of information.

All of them said that adaptation to people with special needs is very important.

Question 12. Ease of use

Intuitive and simple, people don’t spend too much time looking for the material they want. The speed in downloading the content is also part of the ease of use.


User customization is part of any user friendly environment. All of them think that it is essential, because maybe the content is perfect, but if it is not well adapted, users won’t follow it properly. And it could be difficult and boring.

Question 14. Features in a starting screen.

- Direct links to contents, case studies, help session/section, FAQ and to contact to tutor or technical support.
- Information about which other users are online (to contact them).
- Information about the update of content and exercises, also about completion of the progress.
- Direct link to the content of the last session.

Question 15. Personal space.

All of them don’t see this feature as important. It could be interesting but not essential, as users can save documents on their own computers.

5.8.3 Overall recommendations

E-learning is a very good option for adult learning, not only for working people, but also for unemployed people with dependents, students, etc.

There is no doubt that the quality of the content and its adaptation to end users are extremely important. But an e-learning course can fail if users find the platform difficult to use, or the content is not well organized. Therefore there are some characteristics that any e-learning course provider must take into account:
D2.1 User ICT Requirements & Specifications Report

- The platform must be intuitive, simple and easy to use for people with an average level of IT knowledge. Catch users’ attention.
- There must be a person (e.g. a tutor) that monitor users’ progress and involve users in the development of the course. Encourage communication and participation, and also to solve doubts and problems that may arise during the course.
- Communication is very important. Peer to peer, peer to tutors, etc. Students need to feel they are not alone. It implies dynamism.
- The combination of simple presentations and application methods is the most effective instructional method.
- A pre-course learning event will help students to have an idea of the objectives, the progress and the platform development.

5.9 P10-SPACE-Belgium

5.9.1 Presentation of interview framework

Stakeholders interviewed: i) Vocational training centers/association/Chambers of commerce that offer training programs ii) Young SME employees/Freelancers with previous experience on e-learning

4 Young SME employees / Freelancers and 3 Vocational Training centers were interviewed.

5.9.2 Basic results and findings analysis

5.9.2.1 Existing e-learning experience

The respondents find that e-learning offers effective time management (self-determination of when and where and how you are studying) and is very efficient for distance e-learning. Other advantages are that you cannot lose your material, you don’t have to organize it by yourself, easy access, it works faster, you have a direct confrontation with native speakers, it’s easy to combine with work and you have the opportunity to review prior results and outcomes.

Among negative aspects is the absence of a teacher / coach and that you have no direct personal contact with other students. No direct help and support and some aspects are difficult to learn on your own. Other negative aspects are that the course is not well structured which makes the revision difficult and that it’s not tailor-made.

5.9.2.2 User requirements in e-learning

All persons think that learning content management is very important for an e-learning platform. Learner engagement and management and curriculum mapping and planning are also seen as important, but by less people. A combined approach of e-learning (self-paced and instructor-led) is considered as the most important by almost every respondent. Two
respondents think that it strongly depends on the design of the course. One respondent think that various factors influence the design: participants, teacher, course content, etc.

E-learning content as well as e-tutoring, e-coaching and e-mentoring are seen as the most important components in an e-learning approach. Collaborative learning was also considered, but by fewer persons.

Simple learning resources, like documents, PowerPoint presentations, videos or audio files) and interactive lessons (interactivity in the form of questions and feedback, etc.) are seen as extremely important by all 7 respondents. One respondent mention that you should always bridge an online course with ‘in case-on the field’ work cases. Electronic simulations is also seen as being important, but by fewer respondents. Of all respondents, one person thinks that nothing beats practical exercises.

Application methods are seen (e.g. Demonstration-practice method, case-based or scenario-based exercises, role play, guided research and project work) as important by all 7 respondents. Instructional methods like expositive methods are also seen as important. One respondent considers a combination of all methods is the way to go – they call it ‘blended area’.

Synchronous activities like application sharing, live webcasting and video and audio conference are seen as very important by most of the respondents. Chat & IM, virtual classroom and whiteboard just by 2 or even 1 person. All 7 respondents consider a discussion forum as very important as an asynchronous activity. Wiki and Webcasting were also mentioned.

All our respondents consider the final assessment as the most important for an online course; a final assessment with bigger tasks. Two persons consider pre course-learning important for an online course. And one person also thinks it is important to have a correct background of all the attendees. Each person starts with another background and other expectations. It’s necessary to know what the attendees expect, so you can play on that.

5.9.2.3 Accessibility – Usability – Customization issues

The respondents define easy access as very important, BUT it will be very difficult as well to develop specific tools for specific needs and it’s probably very expensive.

Also ease of use is very important. It just may take a few clicks to find what you need, otherwise you scare teachers and people away.

User customization is not that important following our respondents. One respondent drops the idea that courses and / or platforms change so fast that it’s almost impossible to keep up customizing for your own overview. The platform should deliver a good overview by itself, more than 90% will never customize it or they will miss features.
D2.1 User ICT Requirements & Specifications Report

Newsfeed of teachers and direct links to the content on the starting screen is very important for our respondents.

The respondents don’t think personal space is an important feature of an e-learning platform. A plethora of tools is already available (dropbox, SkyDrive etc.)

5.9.3 Overall recommendations

All of our respondents think an e-learning course is important for several reasons, but keep it simple. The used platform should employ a common user interface and has to be easy in use and has to have easy access. Newsfeed of teachers, help and support has to be provided. Also simple learning resources and application methods are very important. And all of our respondents consider a final assessment as the most important for an online course.

5.10 P11-BDA-Bulgaria

5.9.1 Presentation of interview framework

Six target users were interviewed:
- 3 of them were HR managers
- 3 managers of private sector

5.9.2 Basic results and findings analysis

In regard to positive aspects of e-learning, the respondents find that it is very convenient since it reduces travel costs and time spent from and to courses. Users are able to use it according to their personal and professional needs, whenever they have free time, willingness and motivation to do so. In general, e-learning is effective in regard to costs and time aspects.

However, in respect to negative aspects, the respondents think that e-learning is an uncontrolled process since there is no instructor or trainer to direct and manage the learning process, to assess the progress of the learner and to fill the knowledge gaps. Therefore, e-users are usually less motivated than learners in real course settings. E-learning also requires language and computer literacy.

Participants in the interview survey find as positive aspects of e-learning platforms they have used the accessibility of the e-courses in accordance to their personal needs and available time. The respondents also used predominantly platforms that were cost-effective, fast and efficient. Participants also enjoyed the possibility to navigate the learning process in their own pace and order – staying on a lesson (module) as long as they feel the need to do so.

Some participants find as a disadvantage the time-limitedness of these platforms since many of them are paid and have an expiry date. The respondents also didn’t like about
the platforms they used the lack of direct interactions or support from an instructor, and therefore, felt they have some knowledge gaps.

5.9.2.1 Existing e-learning experience

All the respondents consider important for an e-learning platform learner engagement, and management and learning content management. As less important features participants rated tools and services and curriculum mapping and planning.

Participants identified the combined approach as the most effective approach of e-learning.

Bulgarian respondents consider most important and effective components in an e-learning approach e-tutoring, e-coaching, e-mentoring as well as e-learning content and as less important virtual classroom.

Regarding effective e-learning components in e-learning content, participants agreed on simple learning resources and examples. However, almost all respondents said that all listed components like interactive e-lessons, electronic simulations and job aids are important. They pointed to the fact that learners differ in their learning styles and preferences since some learners are practice-oriented and prefer more interactive methods and simulations of e-learning while others prefer more standard methods of e-learning like documents, PowerPoint presentations etc.

As most efficient instructional methods, the respondents identified application methods and expositive methods. Only one participant rated as most efficient the collaborative methods.

Most preferred synchronous activities among respondents were virtual classroom and webcasting while most preferred among the asynchronous activities were discussion forum and correspondence.

The respondents find as most important the following sessions: Cycle of learning events, Final assessment, Feedback and conclusion. As less important but still necessary they find the Kickoff event and Pre-course learning activity sessions.

5.9.2.2 User requirements in e-learning

One respondent defined ease of access as “accessibility to the e-learning platform whenever I want – at work, home – in general, everywhere I have an access to the internet or computer”. Another participant defined it as “easy to use and affordable online registration”. Two participants think that ease of access mean “simple to navigate (and easy to understand)“.

Some participants consider it important that people with special needs have access to e-learning platform since it increases their inclusion and job opportunities. But they also agreed that it should be weighed against additional costs and specifics of the disability.
D2.1 User ICT Requirements & Specifications Report

The respondents defined *ease of use* as easy to download the desired/necessary materials, easy to install the program, easy navigation, interface structure, and direct links to contents.

In general, participants believe that user customization is important if the e-learning platform have a very specific target group of users. However, most e-learning platform needs to be accessible for a wide range of people (customers) willing to learn new things and develop new skills. So, specifically if not aimed at specific target group user customization is not important.

The respondents consider direct links to content material as the most important feature to be included in the starting screen of an e-learning platform (so as to make it more usable). However, they also consider as important features newsfeed and content updates.

5.9.2.3 Accessibility – Usability – Customization issues

Based on our findings and participants’ responses, we recommend and suggest the following for an e-learning course development:

- The course should have direct links to content material
- The course should have interactive e-lessons
- The course should assess the progress of the learner
- The used platform should employ a common user interface
6. Conclusions

6.1 Literature Review per Country

The user ICT requirement and specifications report comprises of three parts. The first part is the literature review part which includes a presentation of the existing national provisions and applied standards on user’s accessibility, in each of the participating countries. Based on those reports, it could be concluded that the majority of the participating countries do not have a complete legislative framework regarding accessibility for disabled people. In most cases the legislative framework is still under development, with regard to specific European guidelines on this matter. However, in several countries, a number of projects, regarding assistive technologies were identified.

6.2 International Provisions and Applied Standards

The second part of the report focuses on international standards and provisions on web accessibility. This part of the report consists of a presentation of the international framework regarding web accessibility, as well as of a quote of international guidelines, on web accessibility. These guidelines could be used as a reference, for the development of an accessible online platform.

6.3 In depth Interviews

The third part of the report, consists of the presentation of the findings of the in-depth interviews, which were conducted in all the participating countries. The in-depth interviews were divided in four parts: i) a description of the existing e-learning experience from the respondents, ii) identification of the user requirements from e-learning, iii) a presentation of various accessibility, usability and customization issues and iv) overall recommendations on e-learning. Regarding the first part, all the interviewees evaluated as positive their overall experience with e-learning. More specifically, the main positive aspects pointed out were the fact that e-learning offers a great flexibility to the learner and that it can be organized so as to fit the work schedule of the trainees. Among the negative aspects of e-learning described, were the absence of teacher and the lack of motivation on behalf of the trainee. Furthermore, another negative aspect of e-learning mentioned was the fact that some users were not familiar with new technologies and had difficulty using the e-learning. Thus, the e-learning platform should be designed so as to be user friendly and simple in use. Regarding user requirements on e-learning, the majority of the respondents mentioned that the learning content management and is the most important feature of e-learning. Furthermore, e-learning content and e-mentoring were considered as important components of an e-learning course. Regarding users preferences in synchronous and asynchronous activities, the majority of users mentioned that they prefer asynchronous activities but instructor-led / facilitated. Furthermore, the respondents selected all the selected asynchronous activities as
important. Regarding instructional methods, the users mentioned that they prefer expository methods such as case studies and worked examples. Furthermore, the users considered interactivity to be an important aspect of e-learning. In this context, the training material could include questions and feedback. The respondents also mentioned the importance of audio and video files in the e-learning course. Finally, the users mentioned that an assessment at the end of an online course is an essential element. Regarding user accessibility – usability and customization, the majority of the respondents mentioned that the online platform should be simple in use, should provide easy navigation to the training material as well as clear structure of the training material. Furthermore, the platform should have accessibility provisions for people with special needs. Customization ability of the platform was considered important by the majority of the users. The term “customization” mainly referred to the ability of the user to select which links and contents of the course appear in the start screen of the platform. Finally, a personal space was not considered important by the users. Based on the overall recommendations made by the users, the online platform should be easily accessible, easy to use and provide access to a well-organized content. Furthermore, there should be guidance by a tutor throughout the training period. The training material should be provided in a modern way, using interactive means such as interactive questions, video and audio lectures. Finally, it is important to implement a final assessment at the end of the training course.
APPENDIX 1 - In depth interviews questionnaire

User Requirements on e-learning

Target Group – Stakeholders: i) Vocational training centers/association/Chambers of commerce that offer training programs, ii) Young SME employees/Freelancers with previous experience on e-learning

Sample size: At least three (5) stakeholders interviews nationally.

Please choose affiliation and state your country:

Young SME employees/Freelancers

Vocational training centers/association/Chambers of commerce

Country

Section 1: Existing e-learning experience

1. In your opinion which are the positive and negative aspects of e-learning? (e.g. cost, time, effectiveness)
   i) Positive aspects
   ii) Negative aspects

2. Which are the positive and negative aspects of e-learning platforms that you have used?
   i) Positive aspects - characteristics
   ii) Negative aspects - characteristics

Section 2: User requirements in e-learning

3. Which features would you consider important for an e-learning platform?
   [e.g. learning content management (creation, storage, access to resources); curriculum mapping and planning (lesson planning, personalized learning experience, assessment); learner engagement and management (learner information, progress tracking); tools and services (forums, messaging system, blogs, group discussions)]

4. Which approach of e-learning would you consider to be the most effective? (e.g. Self-paced, Facilitated/Instructor-led, Combination etc).
5. Which e-learning components would you consider important and effective in an e-learning approach?

[1) e-learning content (e.g. simple learning resources, interactive e-lessons), 2) e-tutoring, e-coaching, e-mentoring (individual support and feedback to learners through online tools and facilitation techniques) 3) collaborative learning (e.g. discussions and knowledge-sharing to working together) 4) Virtual classroom]

6. Which e-learning components would you consider effective regarding e-learning content?

[e.g. simple learning resources (documents, PowerPoint presentations, videos or audio files), interactive e-lessons (interactivity in the form of questions and feedback etc), electronic simulations (Simulations are highly interactive forms of e-learning), job aids (Job aids provide just-in-time knowledge e.g. technical glossaries and checklists)].

7. Which instructional methods would you consider more efficient?

[1) Expositive methods (e.g presentations, case studies, worked examples, demonstrations); 2) Application methods (e.g. demonstration-practice method, job aids, case-based or scenario-based exercises, role play, simulations and serious games, guided research, project work); 3) Collaborative methods (guided discussions, collaborative work and peer tutoring)]

8. Which synchronous activities would you consider important in an e-learning course? (e.g. chat and IM, virtual classroom, video and audio conference, live webcasting, application sharing, whiteboard, polling etc)

9. Which asynchronous activities would you consider important in an e-learning course? (e.g. correspondence, discussion forum, Wiki, Blog, Webcasting etc)

10. Which sessions would you consider important for an online course? (e.g. Kickoff event, Pre-course learning activity, Cycle of learning events, Final assessment, Feedback and conclusion)

Section 3: Accessibility – Usability - Customization

11. How would you define ease of access in an e-learning platform? Is provision of accessibility for people with special needs, important?
12. How would you define ease of use in an e-learning platform (e.g. downloadable material, view online the material etc)?

13. How important is user customization potential of an e-learning platform? (e.g. organize the user interface structure)

14. Which features should be included in the starting screen of an e-learning platform, so as to make it more usable? (e.g. newsfeed, content updates, direct links to content material)

15. Would you consider a user's personal space an important feature of an e-learning platform? (e.g. disc space where each user can host documents)