Education and Culture DG
Lifelong Learning Programme

Virtual Portal for Interaction and ICT Training for People with Disabilities

ViPi Stakeholder Survey consolidation and comparative analysis of findings

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Glossary

AT: Assistive Technologies

ECDL: European Computer Driving License

ICT: Information and Communication Technology

PC: Personal Computer

1 Introduction

Information and Communication Technology (ICT) potentially provides many opportunities of employment for people with disabilities. However, recent findings show that many people with disabilities have a lack of even basic training in the use of ICT (Van Isacker & Goranova, 2010; Van Isacker et al, 2009 and 2010; Van Isacker, 2010), and consequently also on how to use ICT based assistive technologies. This may be for many reasons, including poor access to training buildings, inaccessible training materials, and lack of knowledge of assistive technologies among trainers. Considering the fact that ICT knowledge is core to finding a job nowadays, increasing the level of ICT skills in people with disabilities should allow them to increase their ability to gain and hold employment in the regular labour market. The 2005 strategy document from the UK Office of the Deputy Prime Minister includes reference to this by stating that "ICT changes the nature of a considerable number of jobs, in a way that allows the development of a more inclusive labour market. It introduces opportunities for home working, more flexible working patterns, better engagement in the workforce of disabled people and a range of new jobs". (Nigel Meager, Darcy Hill, Sally Wilson, 2007)

The 'Virtual Portal for Interaction and ICT Training for People with Disabilities' (ViPi) project was instigated to help address these issues. The project aims at creating accessible and flexible basic ICT skills training, designed to meet the specific needs of people with disabilities.

Whilst defining the project research methodology, research was carried out into the policy and ICT teaching accessibility in the consortium countries and Europe-wide. A survey was also devised in the early stages of the project in order to gain data about the ICT training and learning experiences of people with disabilities, the organisations representing them, trainers, policy makers and intermediaries.

The report at hand comprises the survey analysis findings related to ICT training, Community needs, relevant methodologies, pedagogical approaches, available training material, etc. Furthermore, it contains a comparative analysis, describing, assessing and comparing the national peculiarities and similarities of the end-user requirements in the different partner countries.

2 The Survey

2.1 Design of the survey

The findings from the methodology research gave rise to a necessity to identify the needs of the specific targeted stakeholders of the ViPi project in the consortium countries, in order to better tailor the ViPi outcomes. A survey of potential users of the ViPi platform in the consortium countries was undertaken in order to gain information about applied training methodologies as well as the pedagogies and subject areas where ICT training should focus.

The survey was initially prepared in English, and amended in several iterations by the ViPi consortium partners until a final survey was achieved. This was then translated by the team into the other languages of the consortium countries: Dutch, Lithuanian, and Greek.

By the above means, the survey was prepared, taking into account aspects from all five participating European countries, thus incorporating diverse knowledge and experience. Care was taken to ensure consistency throughout the four language versions of the survey to enable directly comparable findings.

The survey went live on 7th June 2011 at http://www.phoenixkm.eu/survey, and was closed for compilation of this analysis on 31st October 2011.

2.2 Selection of survey medium

LimeSurvey was selected for the development and delivery of the online survey, as it is rated highly in testing against WCAG guidelines (Web Accessibility Centre, 2008), which was desirable, taking into account the many people with disabilities we wanted to reach. In the case that anybody could not fill in the online form, a printed/e-document form of the survey was supplied and the data was manually entered into the survey software.

2.3 Stakeholder variation and question sets

The survey was designed as a means of obtaining data from multiple stakeholders in the ViPi project. Different stakeholders have different inputs to the survey – all of which needed to be captured. The survey was therefore broken up into sections, to be completed by separate relevant stakeholder groups of:

- People with disabilities
- Organisations for people with disabilities
- Trainers
- Policy makers
- Intermediaries

The survey was presented as a seamless online survey experience with an offline version available when required. The question groups were transparently addressed only to the applicable classes of users, and were subtitled as follows:

- Stakeholder interest
- ICT access to tools and services
- Carers and relatives
- ICT training and skills
- Learning preferences
- Your ViPi interest
- Organisations
- Intermediaries
- Policy makers
- Trainers
- Support networks and community
- Employment
- Personal info
- General

The final survey was captured in the form of a .php document which stores all the questions, and the conditions under which they were asked. This is available separately to this document as 'StakeholderSurveyPrintable.zip'.

2.4 Survey period

The survey entries were extracted from LimeSurvey on 31st October 2011 and entered into a spreadsheet for analysis. A total of 487 responses were collected, of which 159 were fully completed and the rest had some missing parts. Both fully completed and partially completed surveys provided useful data for the analysis, hence all collected data has been used in this final analysis.

3 General Findings of the Survey

3.1 Breakdown of the participants

Coverage of stakeholder categories: Of the responders starting the survey, 183 were representatives of organisations for people with disabilities, 117 were people with disabilities, 74 were trainers, 51 were relatives/carers, 34 were policy makers, and 33 were intermediaries (Figure 1). The responders were allowed to select more than one of the categories and would get relevant questions for each of the categories they ticked. 159 of the surveys were completed to the end, but all results are included in this analysis as the data in the incomplete surveys is considered just as relevant as those which were complete.

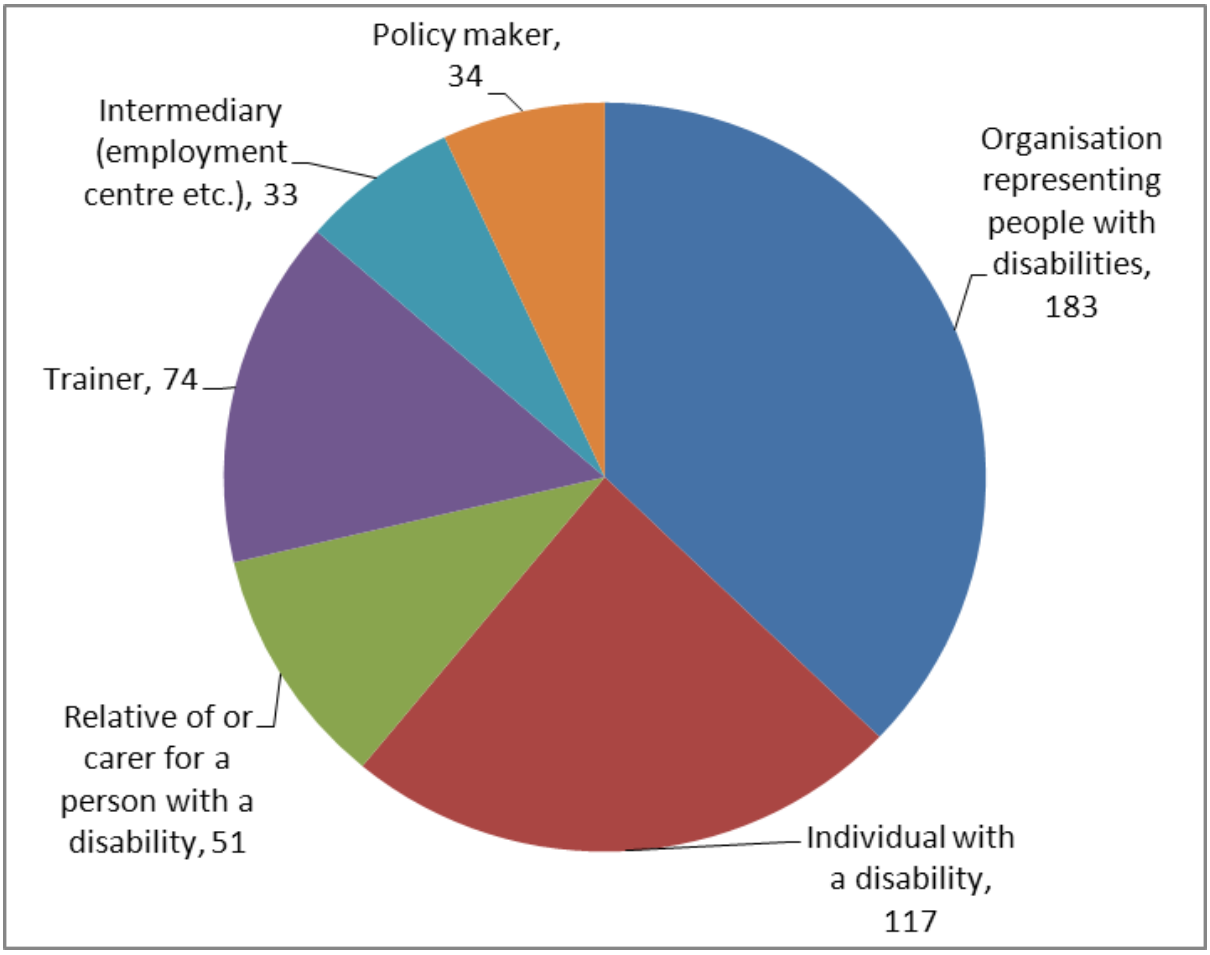

Figure 1 : A pie chart showing the types of stakeholders surveyed

There was a good spread among the disability groups, including visually impaired, hearing impaired, speech impaired, neurological illnesses, mobility impaired, chronic disease, learning difficulty, mental disability and cognitive disabilities, in both people with disabilities (Figure 2) and the organisations representing them (Figure 3).

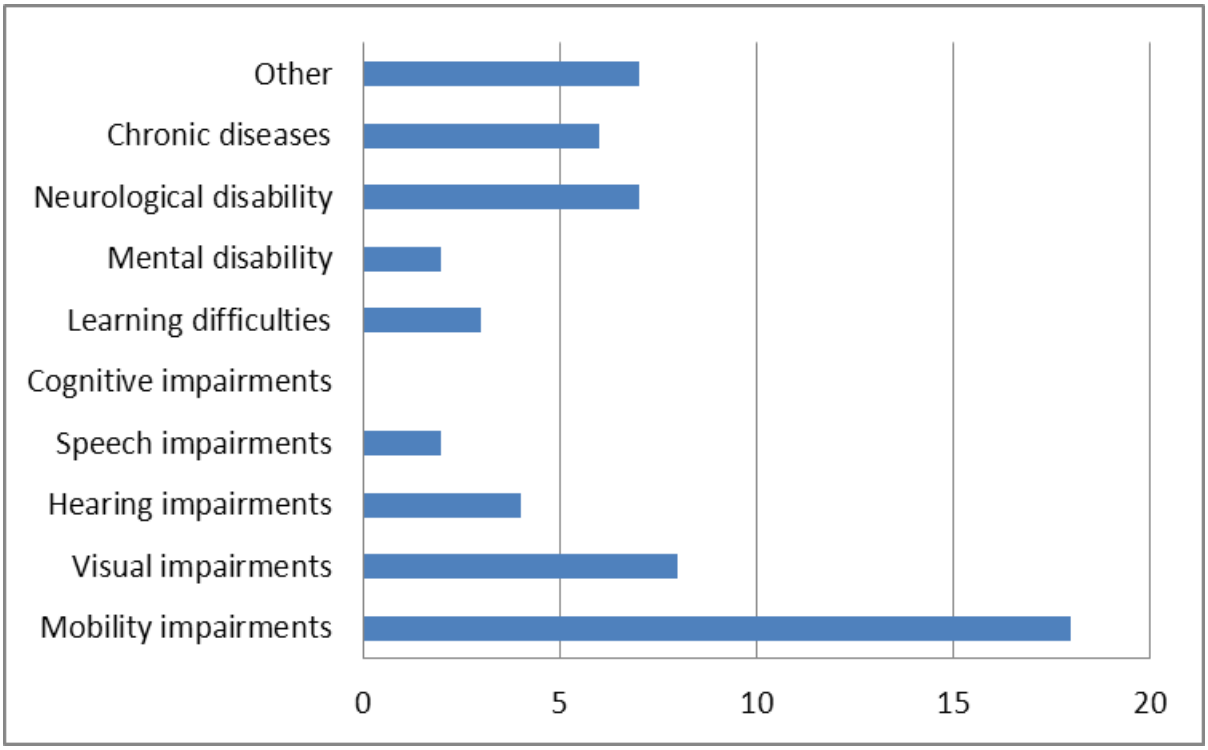

Figure 2: A bar chart showing Disability groups among people with disabilities completing the survey

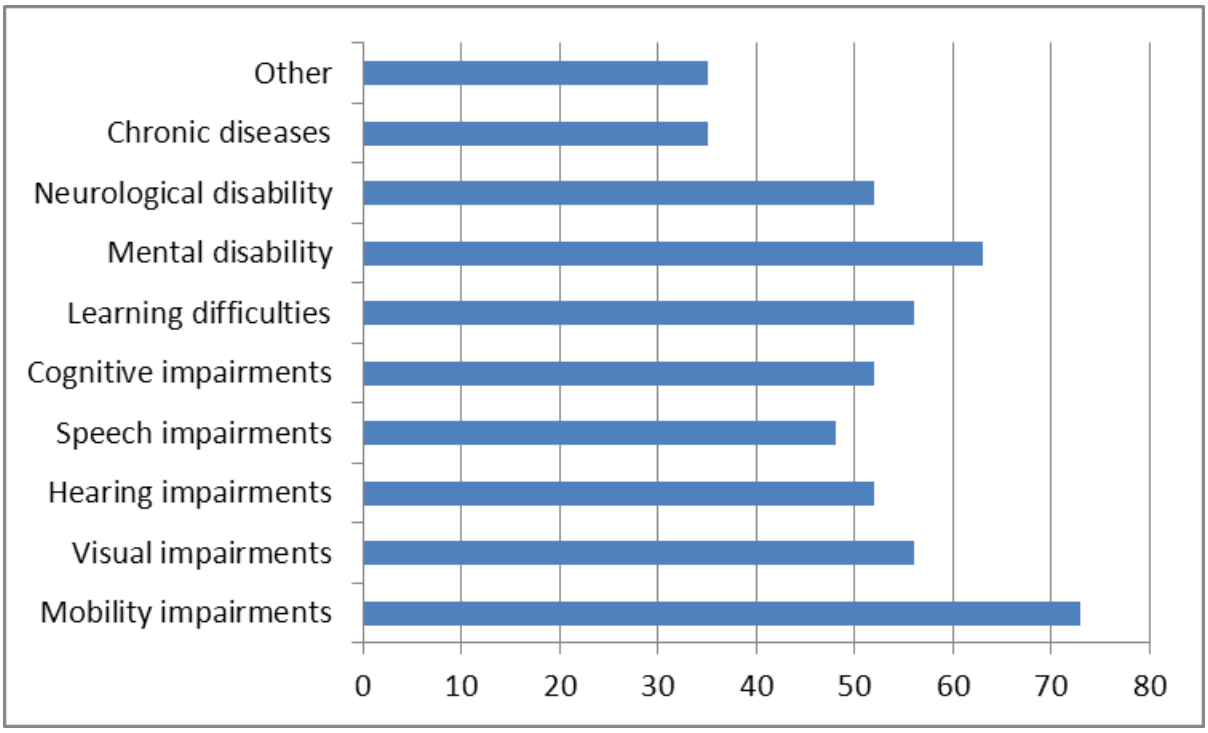

Figure 3 : A bar chart showing specialisms of the organisations of survey completers

3.2 Community needs

Encountered problems in AT and ICT training: When asked about problems they had encountered in ICT training, the most common response was that the training was too brief (29%). Other problems

commonly experienced (Figure 4) were that the price of the required software was too high (23%) and that the cost of the training was too high (20%). When referring specifically to training on Assistive Technologies, a similar pattern emerged, but the response 'the trainers lacked experience in working with people with my needs' was also rated highly.

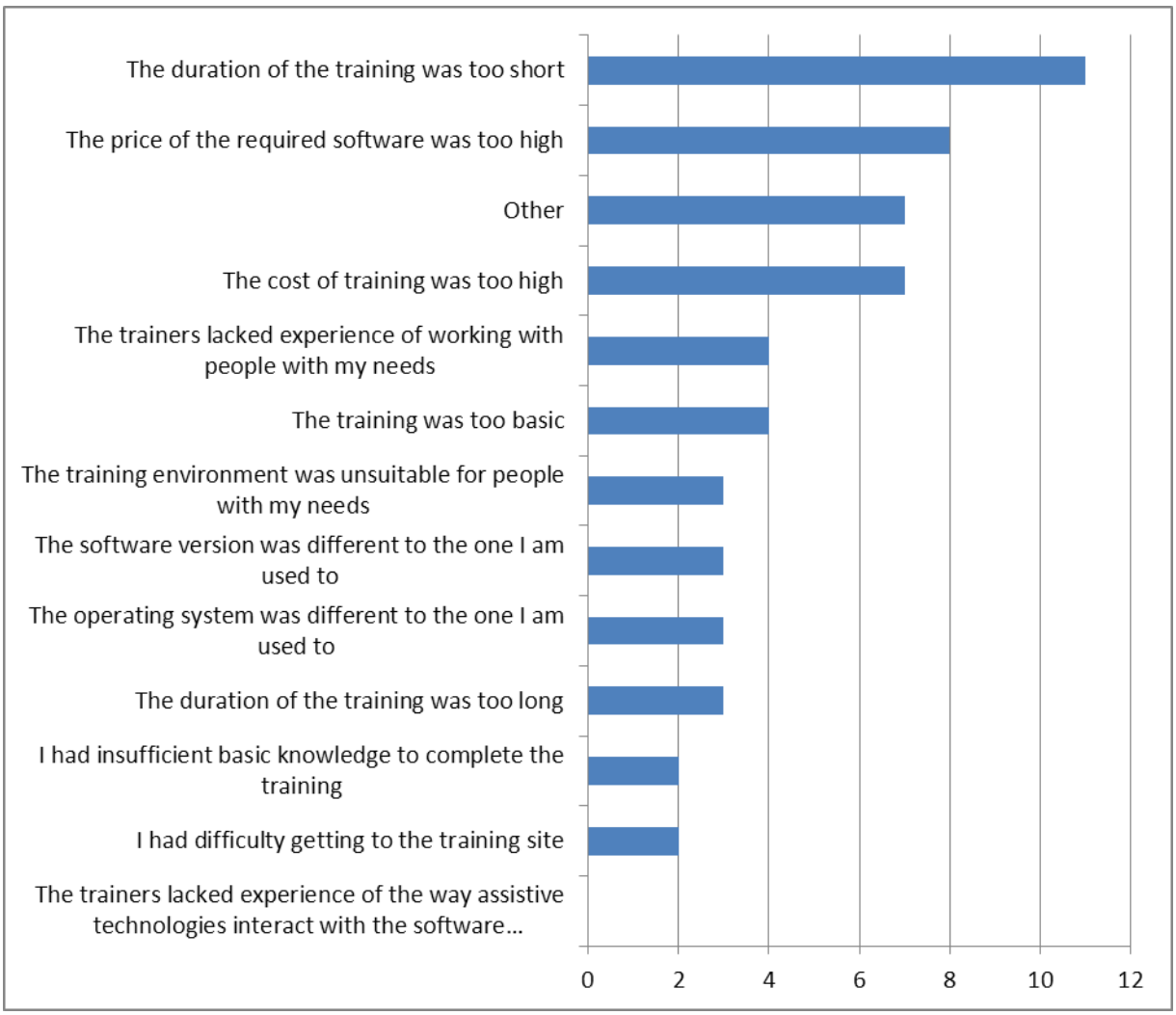

Figure 4 : A bar chart showing problems experienced with ICT training

Aspects of ICT training with which they were happy: When asked about aspects of the ICT training they had received that they were happy with, the most stated was that 'the training was reasonably priced or free'(16 responders). Other aspects which they were happy with included the trainers being experienced with the technologies (14 responders), the training being aimed at the right level (13 responders), the trainers being experienced in the person's needs (12 responders), the training site being easy to get to (12 responders), a suitable training environment, (10 responders) and similar hardware/software being available at home (8 responders). Only 4 responders were happy with the software pricing and availability, which shows strongly the need for training in open source software alternatives to become available, even when training itself is available at a reasonable price. This is specifically the case in those countries (e.g. Greece) where limited or no financial support exists for

the purchase of software and ICT based assistive technologies. The resulting data is shown in Figure 5. The findings for AT training experiences mirrored the pattern findings for ICT training.

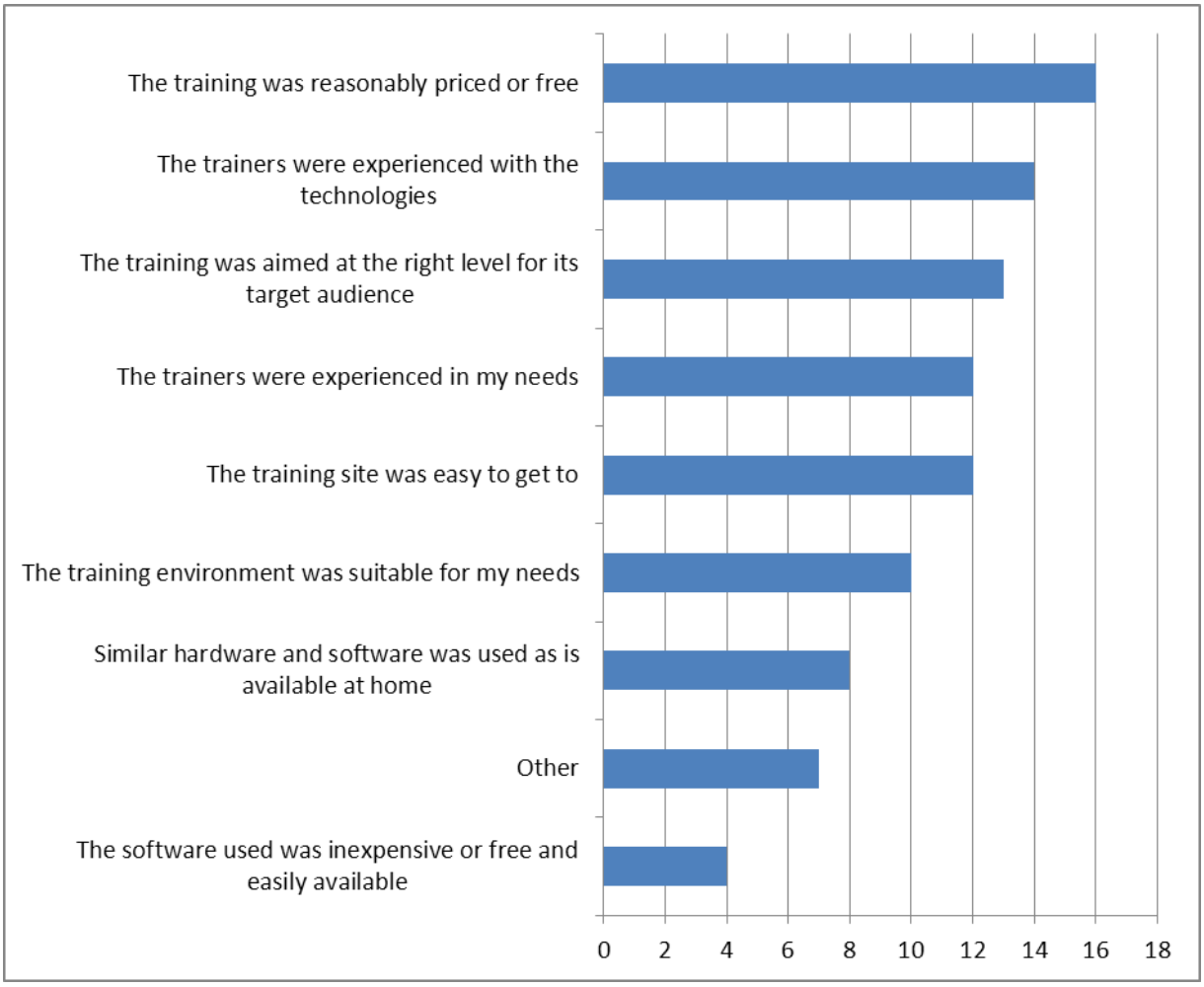

Figure 5 : A bar chart showing things people are happy with after ICT and AT training

Skills expected to enhance employability: People with disabilities who expressed a preference believed the following skills would enhance their employability: Use of an office suite (63%), databases (60%), programming (54%), web development (54%), email and communication (46%), use of internet services (40%), social media (34%) and internet browsing (31%). These findings are shown in Figure 6.

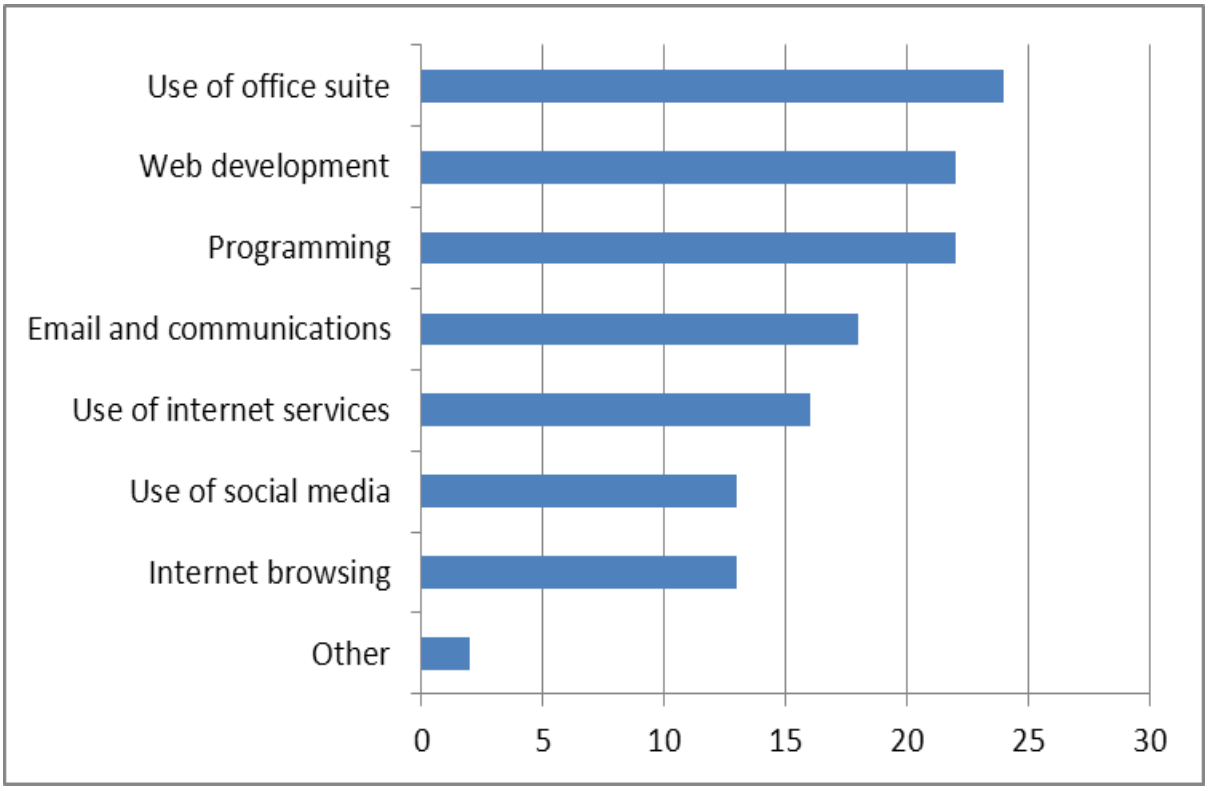

Figure 6 : A bar chart detailing the skills people with disabilities feel would enhance their employment prospects

Potential jobs people with disabilities could undertake: When asked what jobs they think they could take on, the people with disabilities surveyed selected Information Technology most often as a preference (Figure 7). This is consistent with the aforementioned advantages ICT offers for the employability of people with disabilities.

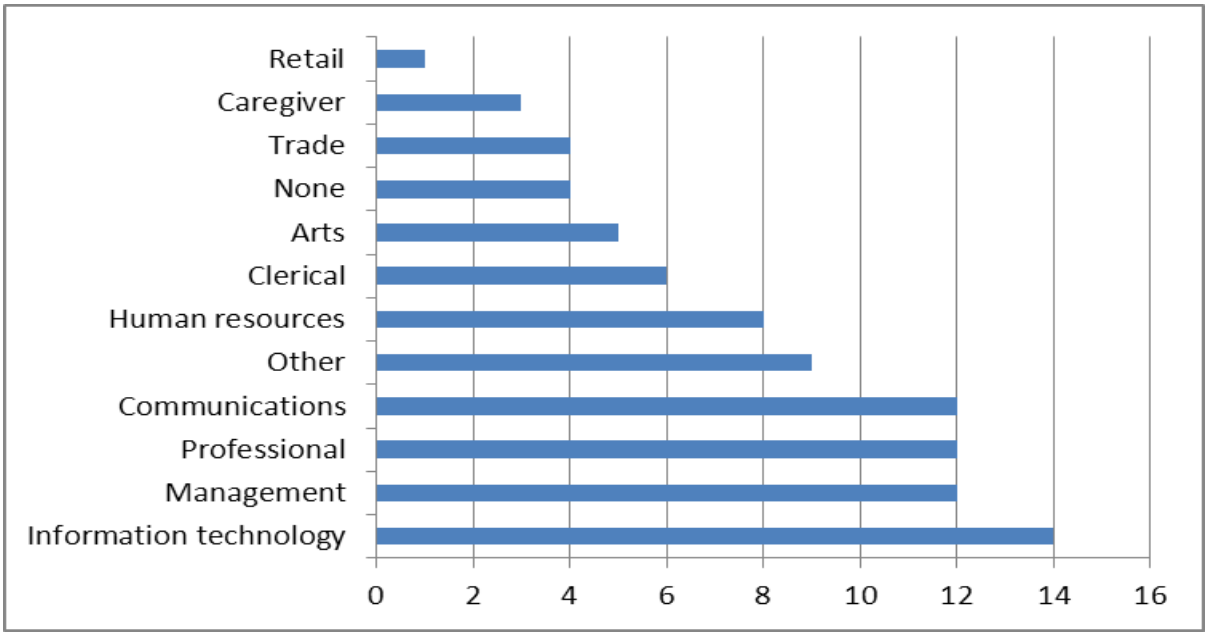

Figure 7 : A bar chart showing the job types that people with disabilities thought they were capable of doing

Potential to be employed: Of all disability experts (Organisations for people with disabilities, Trainers, Intermediaries and Policy makers) the majority (83%) think that ICT training will 'improve' or 'vastly improve' their ability to find employment.

Membership in social networks and other communities: Of 61 people with disabilities and their relatives and carers who completed the online survey, 72% have a Facebook account, 20% are on Linked In, and 8% are on Twitter. Very few of them were on any of the other social network sites listed in the survey.

3.3 Relevant methodologies

Experienced and preferred types of learning: The survey showed that the majority of people with disabilities had experienced self learning, classroom learning, personal tutors, as well as e-learning (learning using electronic means). When asked about the methods they prefer to learn by, the respondents with disabilities most frequently selected personal tutoring, with self learning, classroom tutoring and e-learning close behind. A number of those surveyed, however, suggested that virtual classrooms and virtual tutoring would be a preferred method – even though they had not yet experienced this (Figure 8).

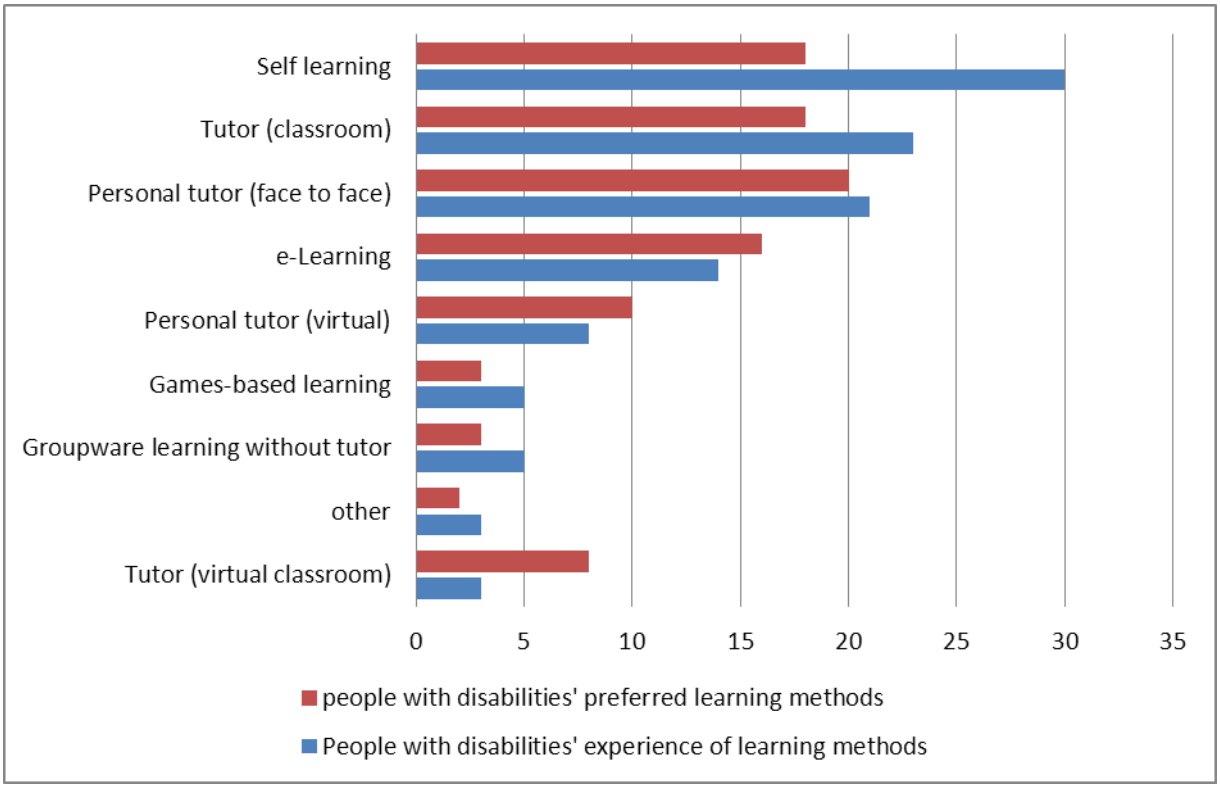

Figure 8 : A bar chart showing preferred learning methods against experience of learning methods among people with disabilities

3.4 Pedagogic approaches

Pedagogic approaches: The trainers surveyed were asked about their preferred pedagogic approaches. The top responses were "discussion", "drill and practice" and "presentation" each

coming from some 65% of the trainers surveyed who expressed a preference. “Tutorials”, “collaboration”, “demonstration”, “interaction” and “games-based learning” were the next most preferred each being used by around 50% of those surveyed (Figure 9).

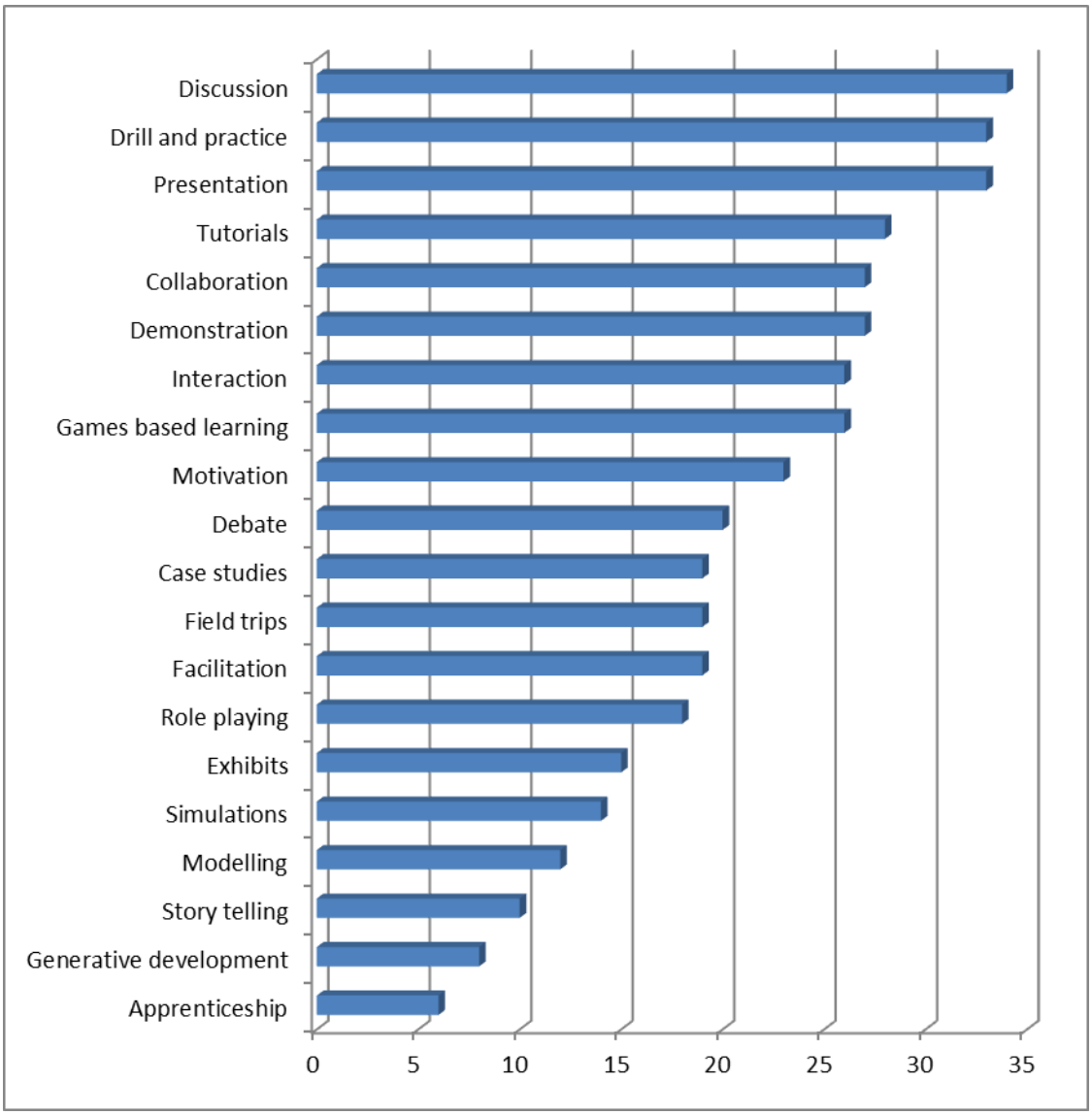

Figure 9 : A bar chart showing the preferred pedagogic methods employed by trainers

3.5 Curriculum content

Curriculum content: The content of the curriculum developed for ViPi needs to reflect the views of the surveyed stakeholders. As such, both people with disabilities, and experts in education and training were asked what skills would enhance the employment prospects of people with disabilities. Experts indicated that basic ICT skills such as the use of an office suite, the internet, email and communications software were priorities. The people with disabilities surveyed, however, also thought higher level skills such as web authoring, programming and databases would be of help.

This suggests that a higher level of course modules, apart from the Basic ICT skills curriculum developed in ViPi, is needed. This could tie neatly into the ViPi portal currently being developed.

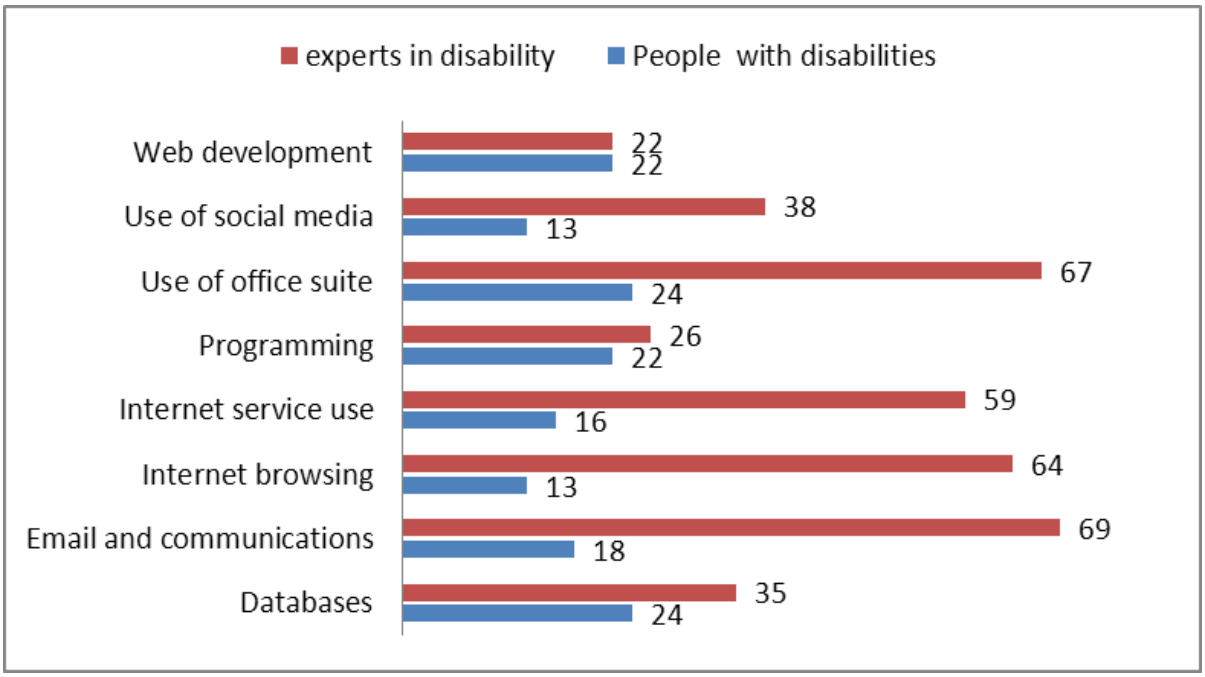

Figure 10 : A bar chart showing the breakdown of skills stakeholders thought would improve the employability of people with disabilities

3.6 Accessibility of training

Accessibility of Training Rooms: The data collected from trainers suggests that the infrastructure for supporting training of people with disabilities is still in many cases not good enough. The data represented in Figure 11 shows the trainers' responses about accessibility of their training rooms. In 17% of cases there were no fully accessible rooms at their facility. In approximately half of those that do have accessible rooms, they also have some that are not accessible.

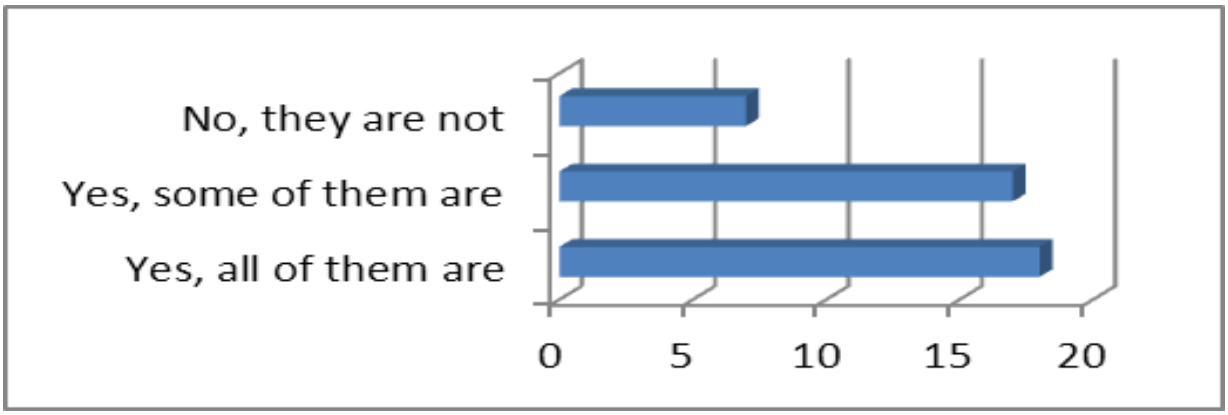

Figure 11 : A bar chart showing the results of the question "Are your training rooms fully accessible for people with disabilities?"

3.7 Support and employment

Social Networks: The data collected shows that by far the most widely used social network amongst people with disabilities and their carers across the consortium countries is Facebook (72% based on the completed surveys received). A small percentage of them also use LinkedIn (20%) and Twitter (8%). There was little or no use of the other common social networking sites among the respondents.

The data collected shows that by far the most widely used social network by organisations for people with disabilities across the consortium countries is also Facebook (65% based on the completed surveys received). A smaller percentage of them also use LinkedIn (6%) and Twitter (16%). Again, there was little or no use of the other common social networking sites among the respondents.

Online Communities: Only 19% of those people with disabilities/carers surveyed who answered the question used an online support community.

Employment: The sorts of jobs the respondents with disabilities thought they could undertake are represented in Figure 12. Information technology is the most prevalent, followed by management, professional and communications.

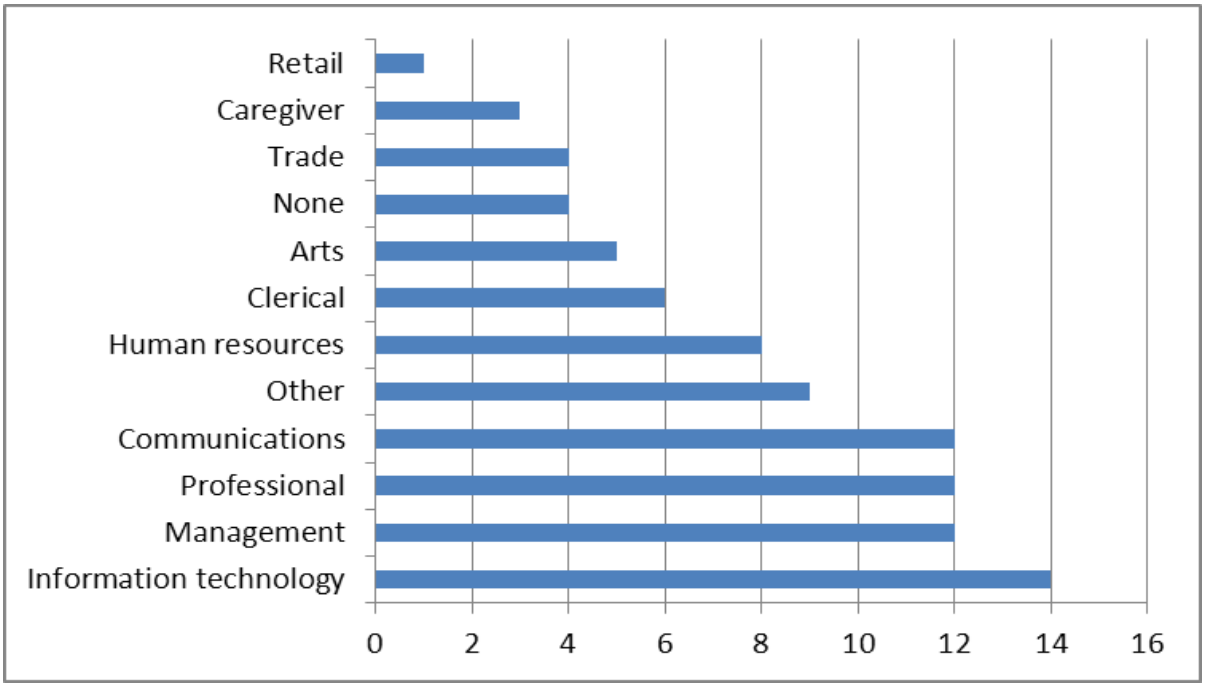

Figure 12 : The types of jobs people with disabilities thought they could take on

3.8 Available training material as suggested by respondents

The survey asked trainers about the curricula and training material they used, and asked them to provide links if possible. The results of this information gathering exercise will feed directly into the portal allowing ViPi to provide links to the relevant material to guide both tutors and students. The

materials available will be assessed in terms of the ontology so that the Web 3.0 search interface will be able to guide users to individually tailored resources.

The ViPi Curriculum has an element called 'What is there for me?' which will include these resources and also the ones independently identified by the ViPi team. The following is a list of links to the materials available, as suggested by respondents:

European

- ECDL (The European Computer Driving License) http://www.ecdl.org/ . ECDL / ICDL is delivered in 148 countries / territories through a network of nationally appointed partners ('operators'). Each operator is responsible for implementing the programmes on a national level. There are individual materials available for each country.

UK

- Microsoft Digital literacy – Learn essential skills with the Microsoft digital literacy curriculum. http://www.microsoft.com/About/CorporateCitizenship/Citizenship/giving/programs/UP/digitalliteracy/eng/default.mspx . Current modules are:
    - Computer basics
    - The internet and the world wide web
    - Productivity programs
    - Computer security and privacy
    - Digital lifestyles
    - Digital literacy certificate test
- JAWS – a tutorial for blind users is available on the Jaws CD
    - http://atto.buffalo.edu/registered/Tutorials/jaws/index.php A tutorial designed for a sighted user to teach a blind user how to use JAWS
- ECDL – in the UK the ECDL is delivered by BCS (The British Computer Society) http://www.bcs.org/category/14424 and they provide four courses:
    - ECDL Essentials
        - IT user fundamentals
        - Using Email and the Internet
        - Security for IT users
    - ECDL Extra
        - Word Processing
        - Spreadsheet software
        - Presentation software
        - Improving productivity using IT
    - ECDL Advanced
        - As Extra but with databases
    - ECDL
        - All of the above
- Microsoft Office http://office.microsoft.com/en-us/training-FX101782702.aspx .Training is available on:

- Access
- Excel
- Lync
- OneNote
- Outlook
- PowerPoint
- Project
- SharePoint
- SharePoint Workspace
- Visio
- Word

Belgium

- ECDL courses
- Courses available via workshops by K-Point (KHKempen – Kansengroepen, Projecten, Onderzoek – Ontsluiting, Inclusie – Informatie, Netwerken, Technologie) (October 2011 onwards) by the Research centre ICT and Inclusion from the Katholieke Hogeschool Kempen, Geel. More information on http://onderzoek.khk.be/domein_ict/project_InclusieICT/. Running initiatives:

- WAI-NOT

WAI-NOT promotes ICT and Internet use in the training and support to people with intellectual disabilities. WAI-NOT is thus further narrowing the digital divide so as to support social inclusion.

WAI-NOT offers people with intellectual disabilities the opportunity to surf the Internet in an accessible-to-them online environment (www.wai-not.be). The WAI-NOT Internet Amusement section is available within this environment. This custom site is educational, (re) creative, informative and interactive.

The website for teachers, teachers, counsellors, parents : www.wai-not.org

- Internet Inclusief

In this study they want to achieve a better understanding of the expectations of adults with intellectual disabilities on the use of websites and results-oriented recommendations for the design and use of websites.

More information:

http://onderzoek.khk.be/domein_ict/project_InclusieICT/KHKempenInte

rnetInclusief.htm.

- ICThelpt

ICThelpt provides information to teachers, parents and other supervisors on new customized / customizable software, hardware, websites and support for children, adolescents and adults with special needs in a sustainable manner.

ICThelpt offers a partnership and a person within the field of ICT applications for people with disabilities, particularly in education, where teachers and interested parents can receive specific and practical information.

ICThelpt wants to bring together research initiatives and research on ICT applications and accommodation for people with disabilities and the applied relevance.

ICThelpt wants to bring together and stimulate training initiatives on this theme.

More information:

http://www.khk.be/khk04/onderzoek/sociaal/ICThelpt.asp.

- Tutorials have been made by organisations individually as well, and by teachers.

Lithuania

- http://moodle.bka.lt/
- http://www.vma.eurolingvija.eu
- Utena College of Health and Social Care - Faculty of teachers
- www.tmd.moodle.lt

Cyprus

- ECDL – www.ecdlexams.com.cy

Greece

- ECDL – http://www.ecdl.gr (the certifying authority of the leading international computer skills certification programme)
- Training material provided by the Pedagogical Institute
- Training material provided (freely) by the Ministry of Education, Lifelong Learning and Religious Affairs (http://www.e-yliko.gr/default.aspx)

- Edu Portal (http://www.eduportal.gr/) Educational Portal with information and teaching material for primary and secondary education
- e-Portal for Education (http://pekp.gr/) provides content and games-based education
- Education and Lifelong Learning digital repository (http://repository.edulll.gr)

4 National Variations and Similarities in End User Requirements

4.1 Breakdown of the participants

Language: The language used when completing the survey was: English 142, Greek/Cypriot 62, Lithuanian 113, and Dutch 116. As no specific country of residence question was asked of all participants, and as many participants did not complete the survey as far as the personal section with a question regarding nationality, and also many respondents did not answer the question on nationality of their organisation, language of survey completion is the best guide we have as to where the responses originated.

The language used when completing the survey was therefore used as a guide to the location of respondents. We can see from the analysis below that in Greece and Cyprus there were fewer responses from organisations representing people with disabilities, but there was a more significant number of trainers than elsewhere. This could be down to people from organisations classifying themselves as trainers. It can also be seen that in Belgium and the UK, there were more responses from people representing organisations of people with disabilities. The Lithuanian pattern of responses broadly follows the averages achieved (Totals column in **Error! Reference source not found.**).

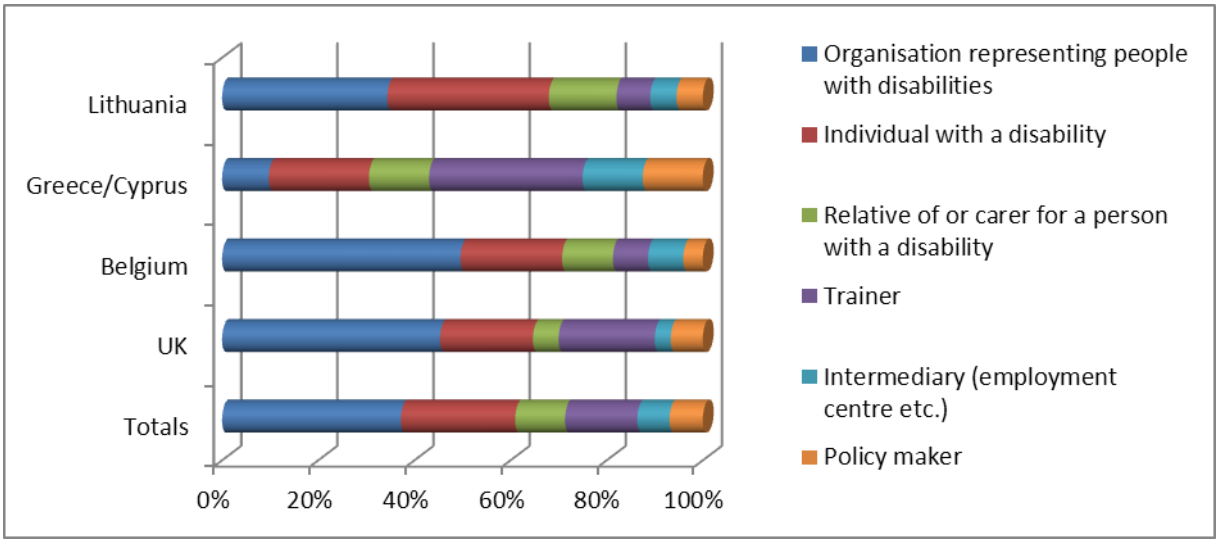

Figure 13 : A comparison of the percentages of respondents in each stakeholder group by country (language)

Range of disabilities surveyed: The different disability specialisations of the organisations surveyed covered the range of disability types well in each country as can be seen in Figure 14. The range of disabilities of those respondents with disabilities however was more limited in certain countries (Figure 15). In Greece/Cyprus there was a focus on people with visual impairment, as well as, mobility impairment, and in the UK mobility and neurological impairment. The UK's specific target

group within ViPi is on people with learning disability, who would of course find completing the survey difficult. This goes some way to explaining the low number of UK respondents with disabilities.

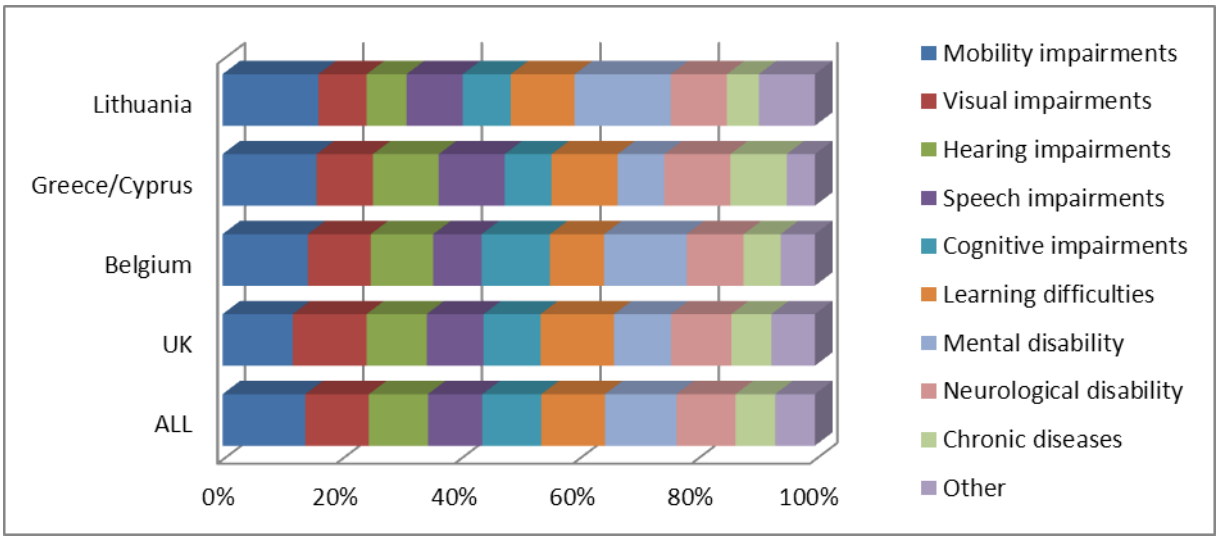

Figure 14 : Specialisation of organisations by country

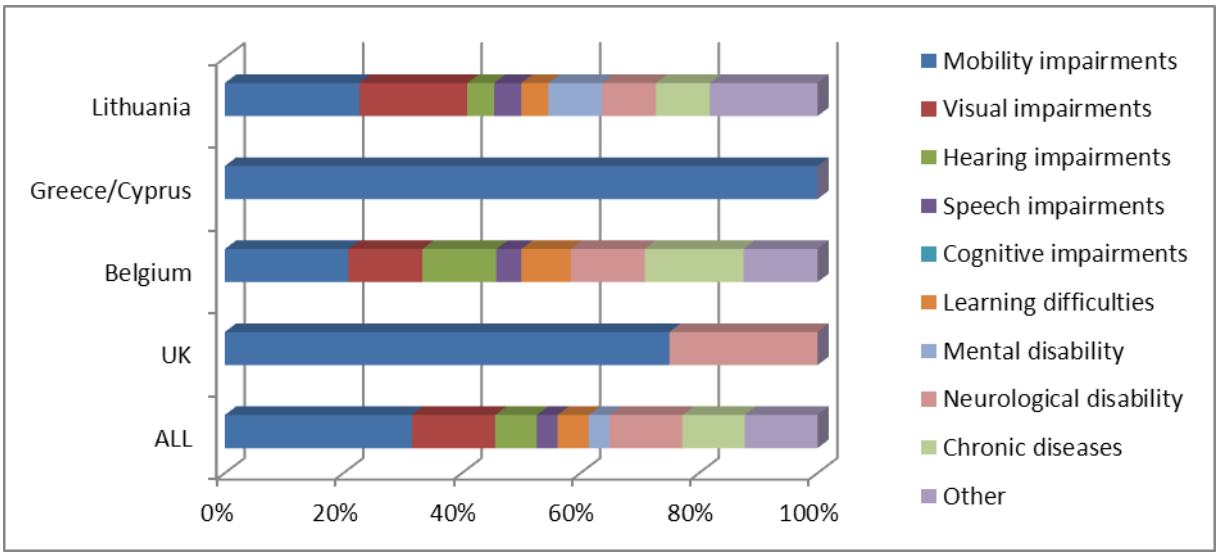

Figure 15 : Disability of respondents by country

Age of respondents: The age range of the respondents was broadly similar in each of the countries surveyed. There appears to be limited participation from the youngest and oldest age groups across the consortium countries.

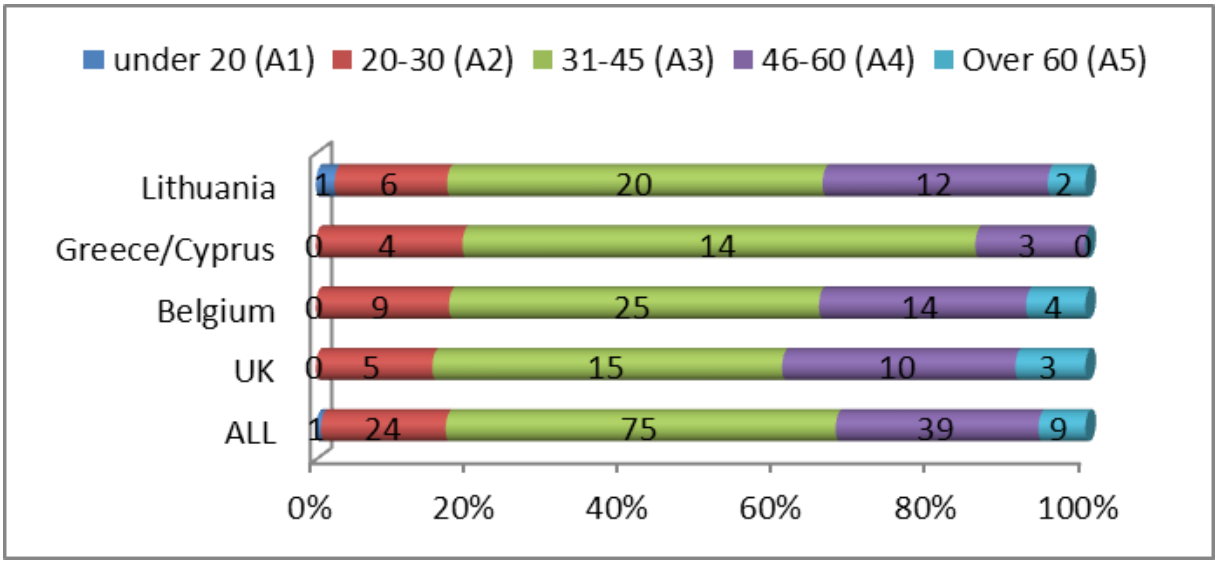

Figure 16 : Age of survey respondents

4.2 Community needs

Positive and Negative aspects of ICT Training: Due to the small sample sizes when the data is broken down into so many subsets – e.g. people with disabilities… who have had ICT training… from a specific country, it is difficult to extract much meaningful data regarding local happiness/unhappiness with aspects of ICT training. It does appear however (see Figure 17 and Table 1) that similar advantages and problems are experienced across the consortium countries, suggesting that the application of similar strategies across the consortium countries will be advantageous.

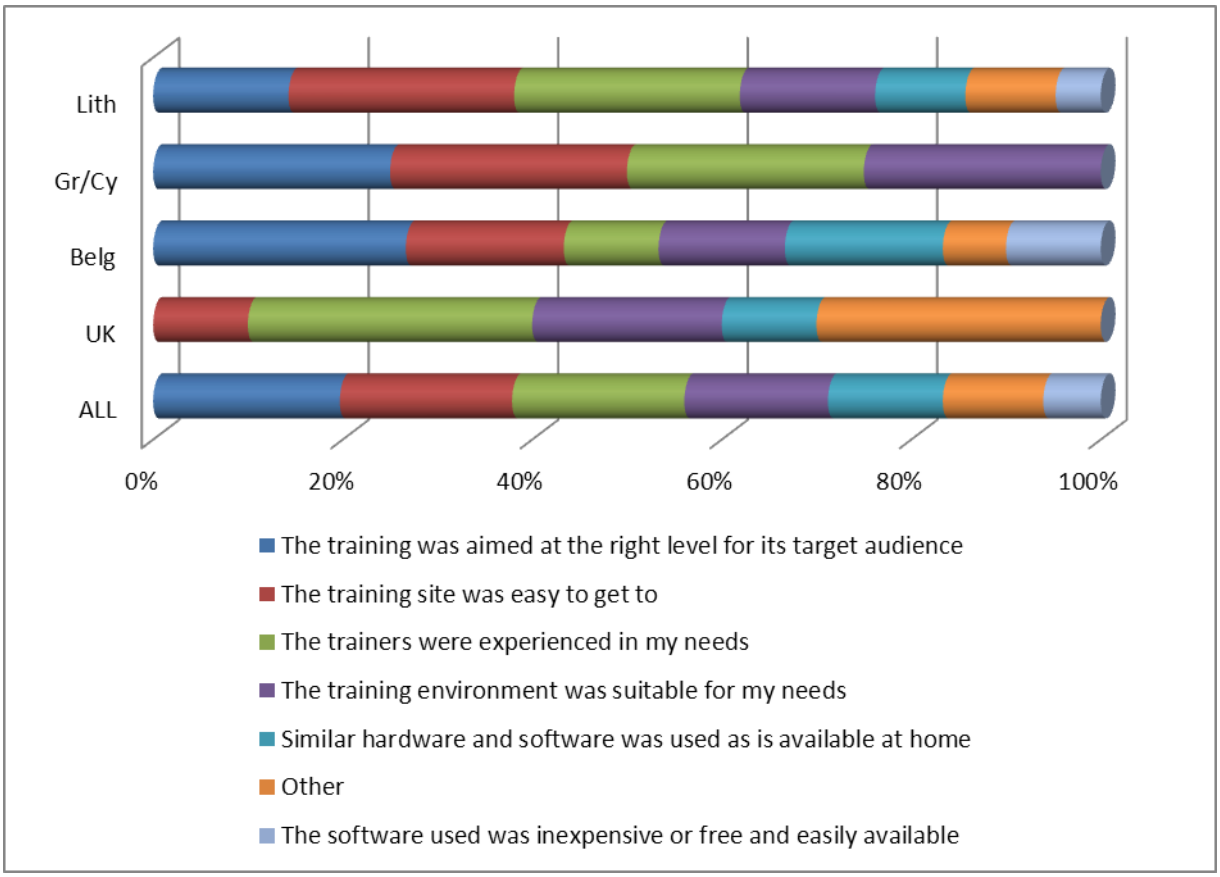

Figure 17 : Positive aspects of ICT training experienced by people with disabilities

Below table shows instances of negative aspects of ICT training being experienced in the different countries.

Table 1 : A table showing instances of negative aspects of ICT training being experienced by country

Answer	ALL	UK	Belgium	Greece / Cyprus	Lithuania
I had difficulty getting to the training site	2	1	1	0	0
I had insufficient basic knowledge to complete the training	2	0	1	0	1
The duration of the training was too long	3	0	2	0	0
The operating system was different to the one I am used to	3	1	1	0	1
The software version was different to the one I am used to	3	1	1	0	1
The training environment was unsuitable for people with my needs	3	0	3	0	0
The training was too basic	4	2	1	0	1
The trainers lacked experience of working with people with my needs	4	1	3	0	0
The cost of training was too high	7	3	4	0	0

Answer	ALL	UK	Belgium	Greece / Cyprus	Lithuania
Other	7	2	4	0	1
The price of the required software was too high	8	1	6	0	1
The duration of the training was too short	11	2	4	0	5

Access to devices and internet: Questions were asked in the survey to determine the access people had to devices such as smartphones and computers. They were given the options daily, weekly, monthly or never. The percentage bar charts in Figure 19 and Figure 18 show the access. It is worth noting here that the survey was primarily an online one – with optional printed copies on request, which is likely to put a bias on it being filled in by people with access to these machines and the internet. It does appear however that Belgian access to smartphones for people with disabilities is currently low, and that there are still a significant number of people with disabilities in the UK - or who respond in English at least – who do not have regular access to a PC.

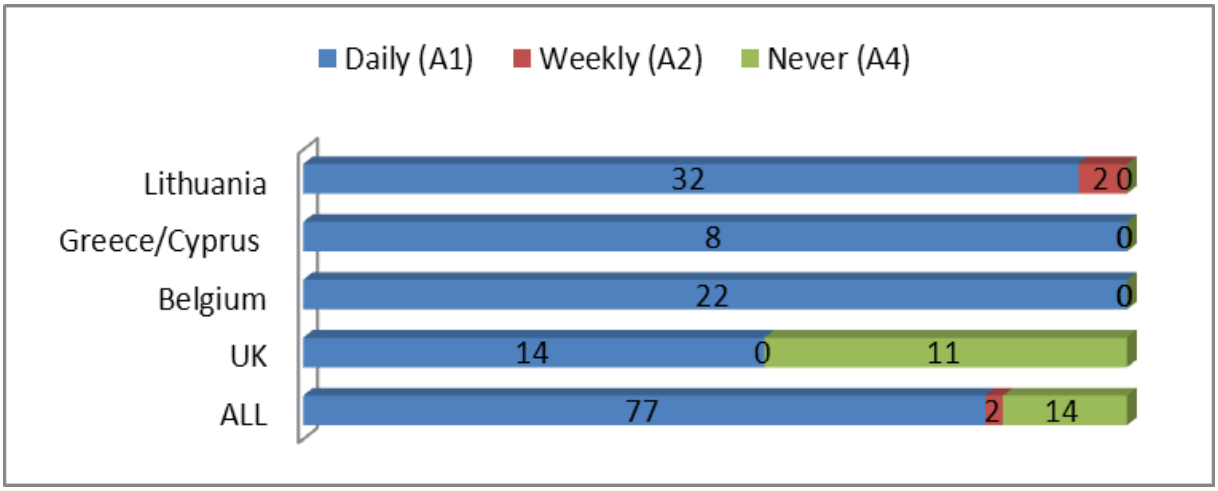

Figure 18 : Access to a PC by people with disabilities who answered the question

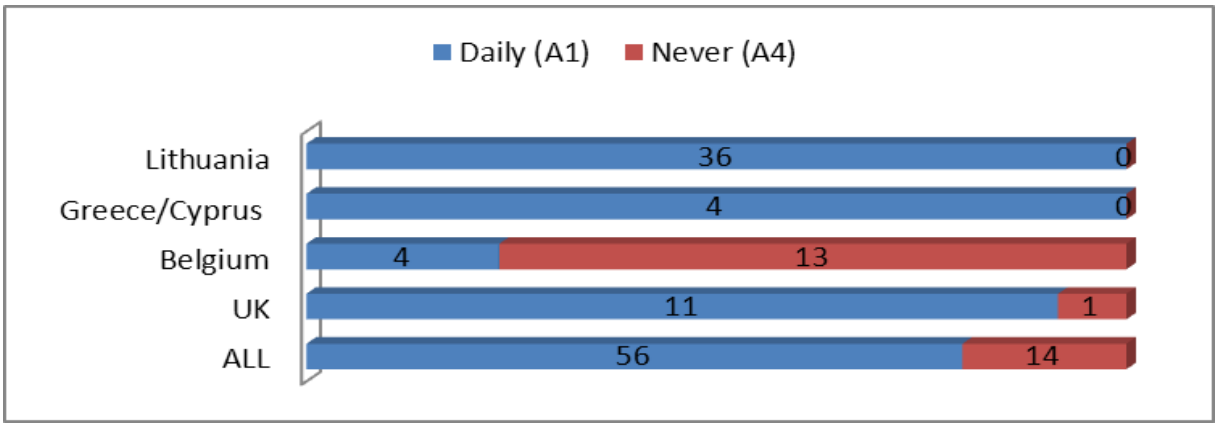

Figure 19 : Access to smartphones by people with disabilities who gave an answered the question

We can see from the collected statistics (Figure 20) that the breakdown of location where people with disabilities access a computer is similar across the consortium countries with around 60% accessing it at home, 30% at work, and 10% in a public building, such as a library.

Figure 20 : Where people with disabilities access a PC by country

55% access the internet at home, with 30% at work, and 15% accessing the internet elsewhere (Figure 21). This suggests when comparing to the PC usage statistics that only a small proportion of those who have a PC at home have to go elsewhere to access the internet. Again the distribution is similar throughout the consortium countries. It may also be noted that in the Greek speaking countries there may be less public internet access availability/usage.

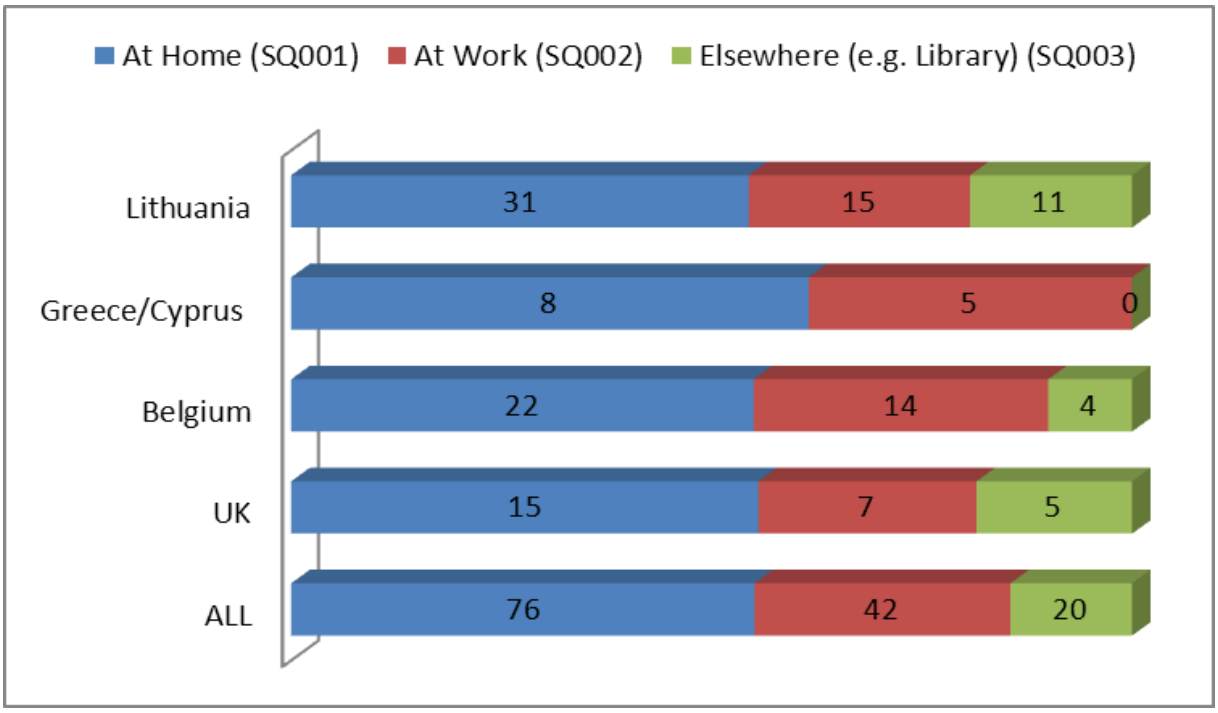

Figure 21 : Where people with disabilities have access to the internet

Assistive Technology Use: When asked if they use Assistive Technology when accessing a PC, 32% of the people with disabilities surveyed responded 'yes' (Figure 22). There appears to be some possible

discrepancy between different countries in this data, but the size of the surveyed sample does not permit i a correlation study between country and disability types.

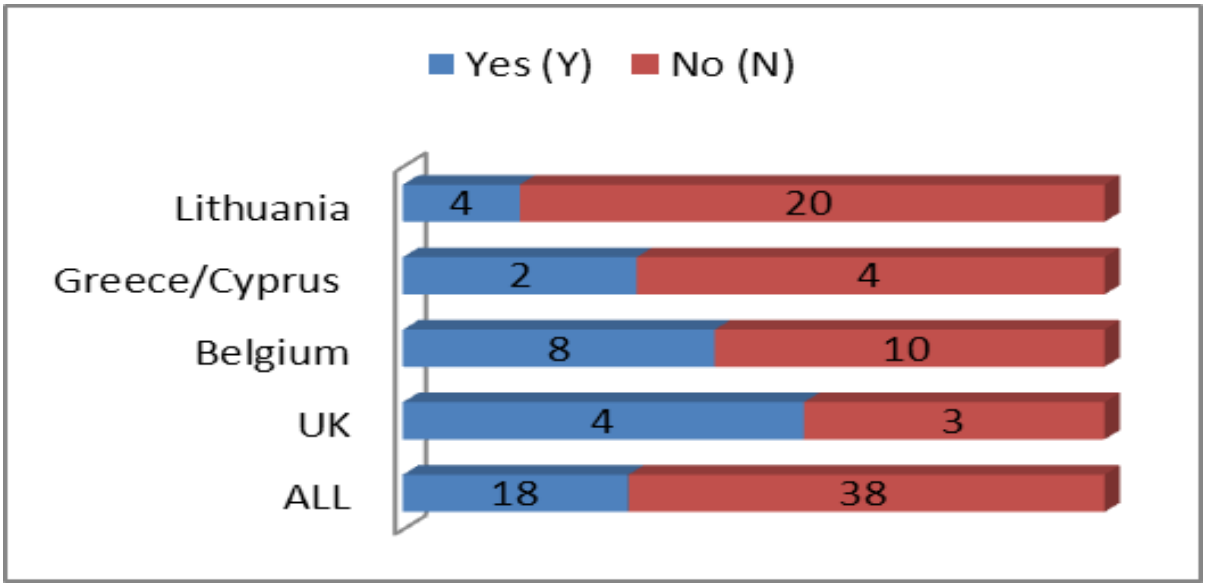

Figure 22 : Uptake of Assistive Technology among the people with disabilities using a PC

Uptake of assistive technologies on smartphones appears to be significantly higher amongst English language speaking responders (See Figure 23). This may be due to the greater availability of English language screen readers on smartphones, and could also account for the lower penetration of smartphones amongst users with disabilities in other surveyed countries. Figure 24 shows that assistive technology uptake for use of the internet is higher in the UK and Belgium, but much more limited in Greece and Lithuania. This may again be caused by language / character set restrictions in the software. Uptake of assistive equipment/software in order to interact with devices also appears higher among the UK and Belgian responders (Figure 25), possibly for similar reasons.

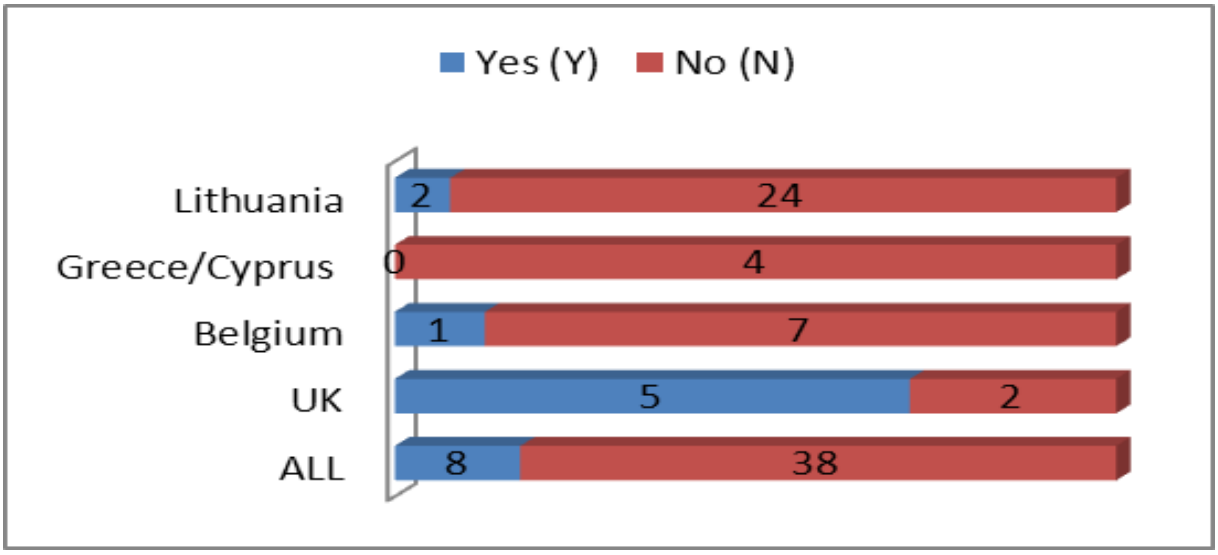

Figure 23 : Uptake of assistive technologies when using a smartphone

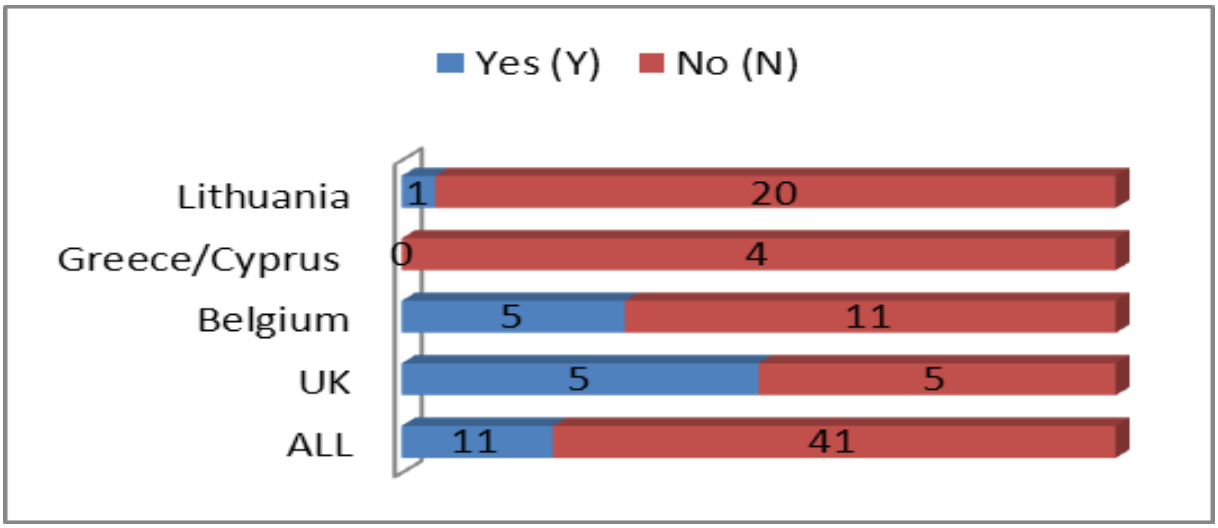

Figure 24 : Uptake of assistive devices to browse the internet

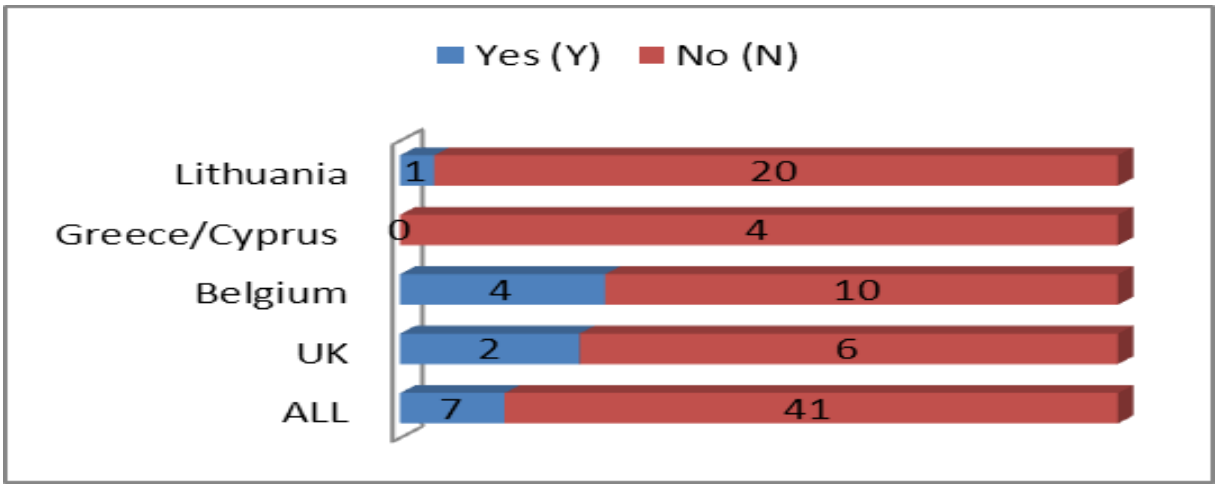

Figure 25 : Uptake of assistive equipment/software to interact with devices

4.3 Relevant methodologies

Learning Preferences: When asked about the learning methods they had experienced and also the learning methods they thought they would prefer, respondents with disabilities were given a checkbox list of learning methods from which they could select one or multiple entries. The data in Figure 26 refers to the percentage of the total number of checkboxes ticked by all recipients in the said country. In most countries there was high experience of self-learning methods (28% of all responses) with a lower preference for it (19% of all responses). There was however more of a preference for virtual classroom (3% experienced but 8% preferred), virtual tutors (7% experienced but 10% preferred), and e-learning methods (13% experienced but 17% preferred) (Figure 26). These could be potentially explained by the removal of a requirement to access a training building, and/or a removal of the need to work in front of others where potentially embarrassing or uncomfortable situations may arise. Locally the data only shows minor variations between countries. It shows a high use of classroom teaching in Belgium, and a high occurrence of self-learning in Lithuania. The data shows a high preference for e-learning in Lithuania. The data also suggests a higher preference for

self-learning in the UK than in the other countries. The number of responses from the Greek speaking countries was too small to draw any conclusions.

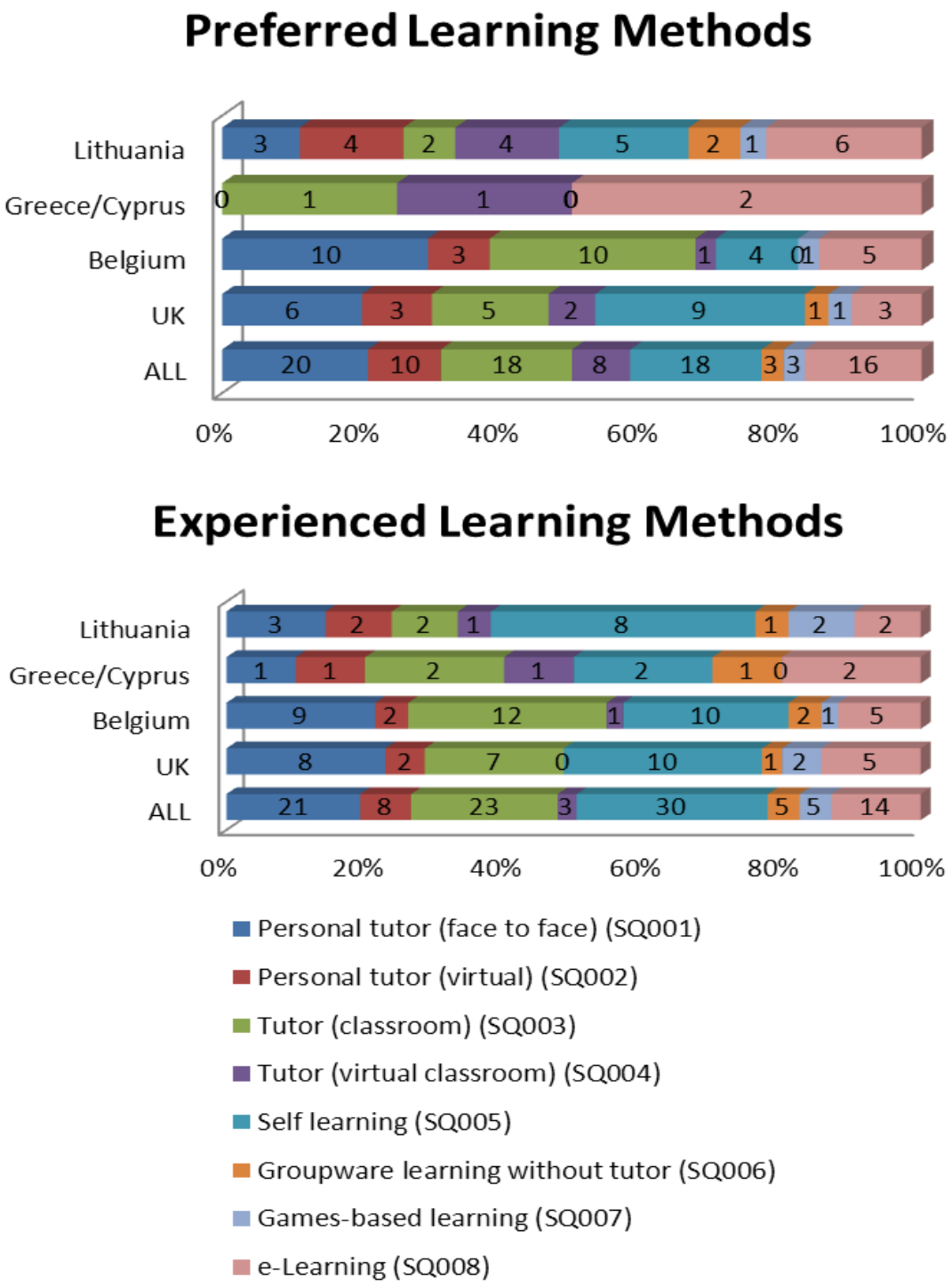

Figure 26 : Preferred compared to experience of learning methods in people with disabilities by country

The responders with disabilities were asked explicitly if they would be happy to receive professional ICT training via the internet. 71% responded yes across the consortium (Figure 27).

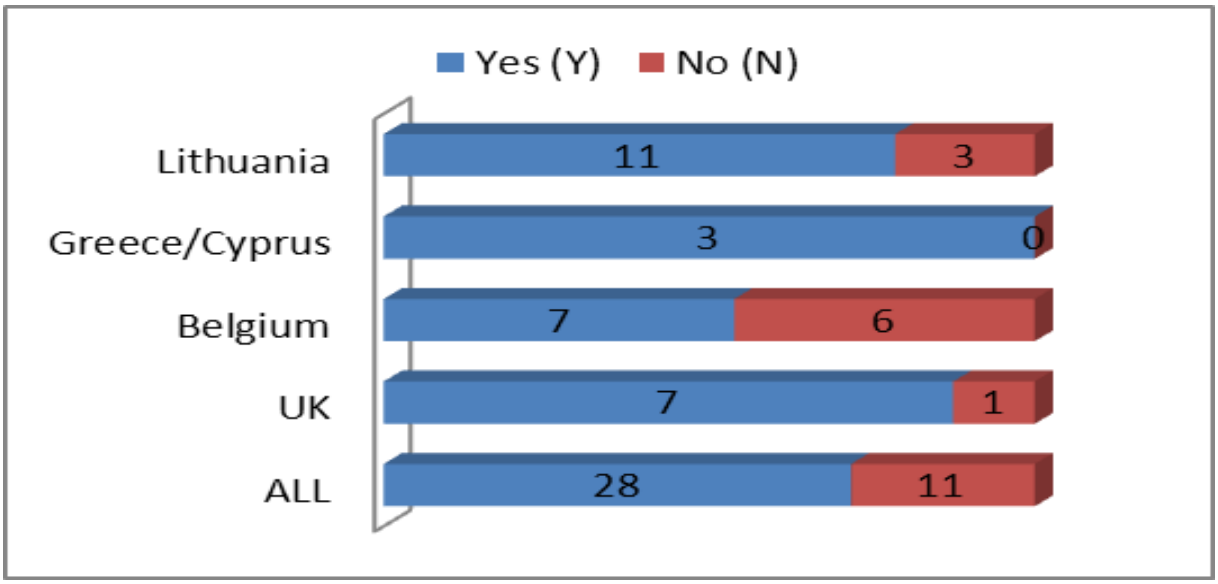

Figure 27 : Would people with disabilities be happy to receive professional ICT training via the Internet?

4.4 Pedagogic approaches

The pedagogic approaches applied in the consortium countries are represented in Figure 28. Broadly the pedagogic approaches used in teaching ICT are similar across the consortium countries, encompassing a wide range of established pedagogical practices. Noticeable differences are present and are highlighted below:

- Belgium has higher than average use of drill and practice methods, motivation and collaboration
- The UK has higher than average use of discussion and demonstration
- Lithuania has higher than average use of tutorials, exhibits and generative development
- Greece has higher than average use of debate and story telling

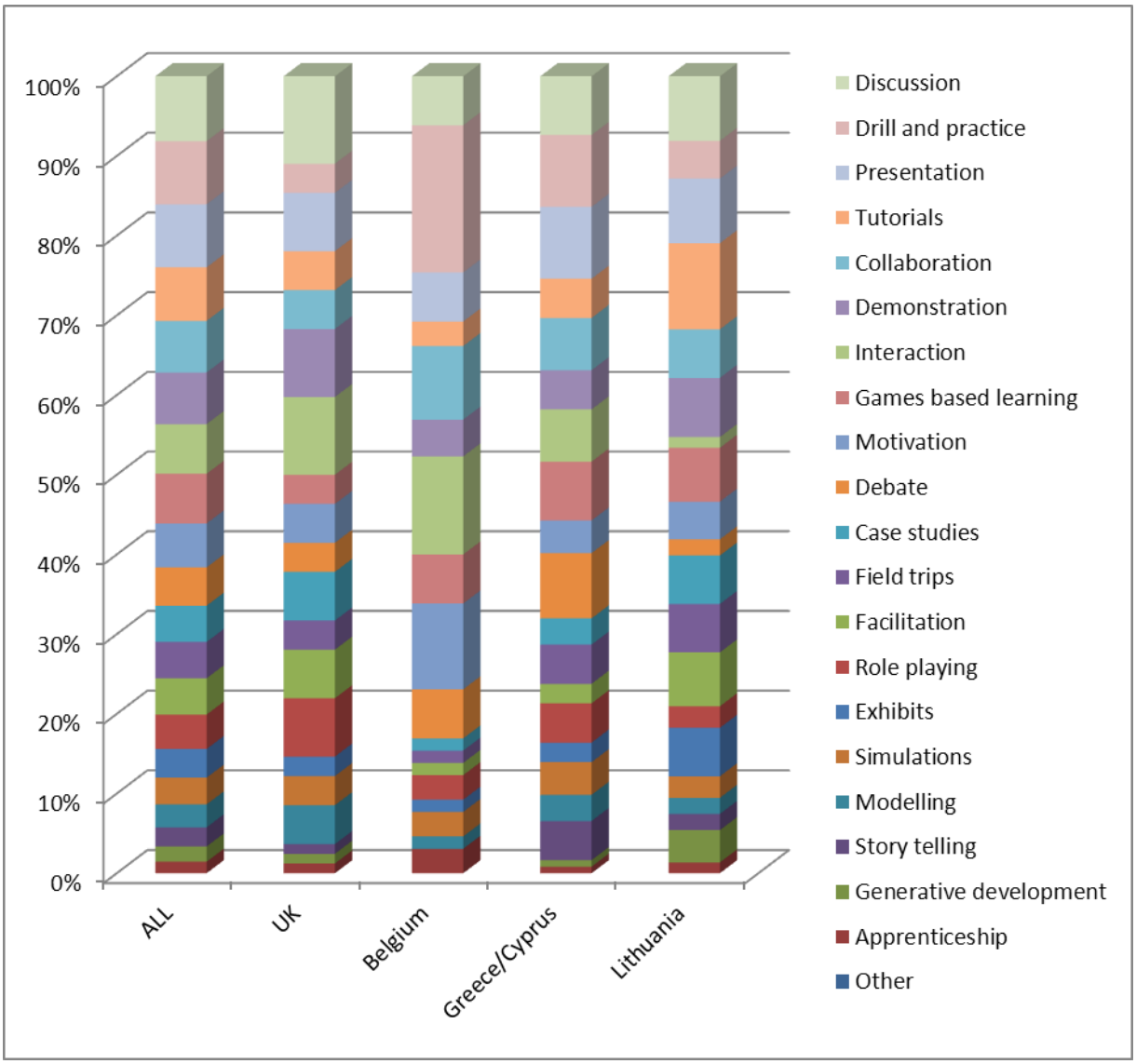

Figure 28 : Pedagogic methods employed in ICT training by country

4.5 Curriculum content

Curriculum content: The content of the curriculum developed for ViPi needs to reflect the views of the surveyed stakeholders. As such both people with disabilities, and experts in their education and training were asked what skills would enhance their employment prospects. The results are given in Figure 29 and Figure 30 by country. As previously observed in Section 3.5, the experts most frequently select the lower end ICT skills of email and communications, use of internet services, internet browsing and use of an office suite (Figure 29). This data set shows a good correlation between the countries, suggesting the same skills are favoured by the experts across the consortium countries. The respondents with disabilities selected the same skills, but a similar number also selected databases, programming and web development (Figure 30), and again this pattern was mirrored across the consortium countries.

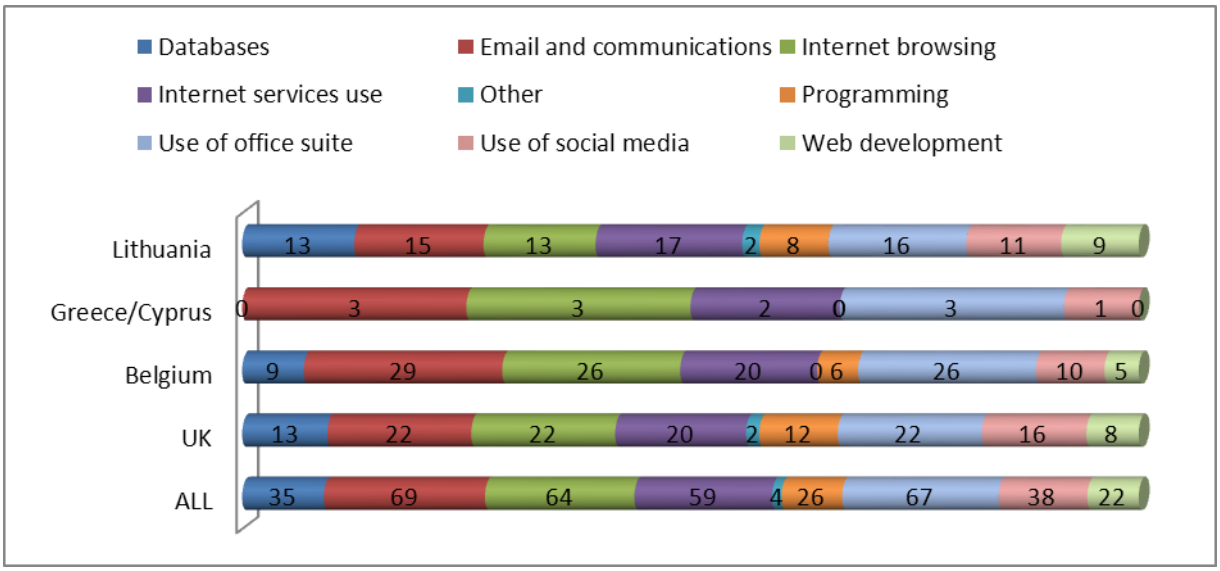

Figure 29 : Experts opinion of what skills would increase the employability of people with disabilities

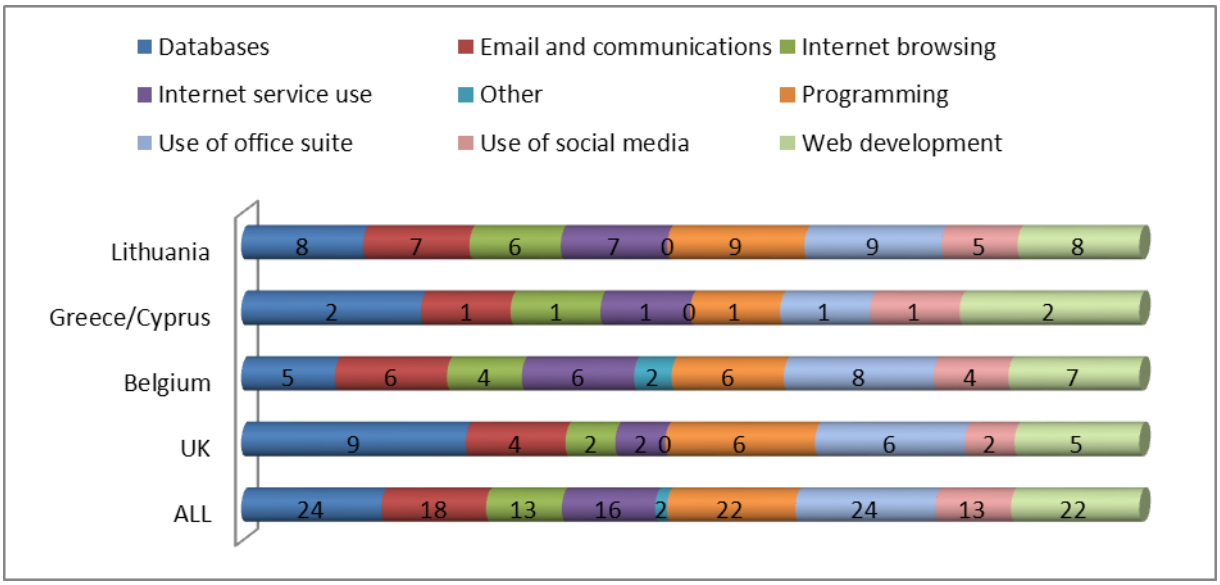

Figure 30 : Skills people with disabilities think would enhance their employment

4.6 Accessibility of training

Accessibility of Training Rooms: The data collected from trainers suggests that the infrastructure for supporting training of people with disabilities is better in the UK and Belgium than in Lithuania and Greece/Cyprus in terms of fully accessible training rooms (Figure 31). The averages are 43% all rooms accessible, 40% some accessible rooms, and 17% inaccessible rooms. The data does however show that around 57% of training facilities across the consortium countries have at least some inaccessible training rooms.

Assistive Technology Provision: The provision of assistive hardware and software appears to be higher in Belgium with around half of training rooms equipped with both assistive hardware and

software, where it is more like a third of rooms in the other countries have assistive hardware and a fifth have assistive software (Figure 32 and Figure 33).

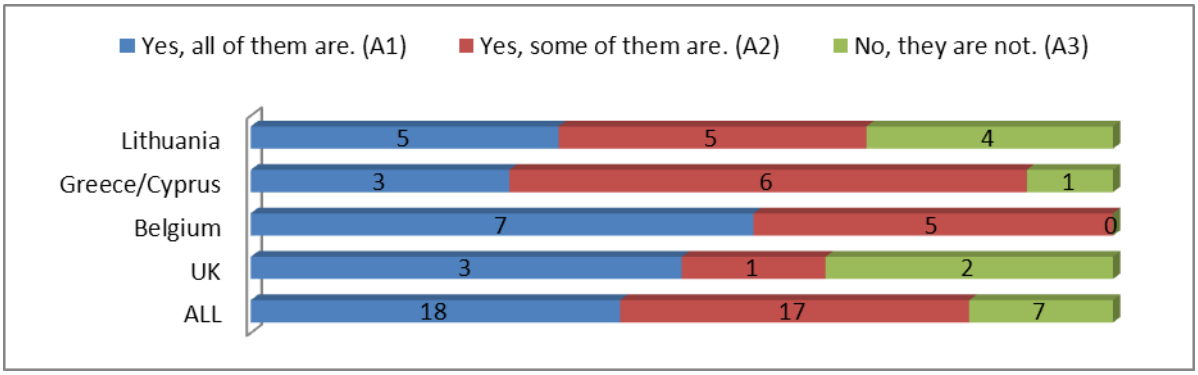

Figure 31 : Are our training rooms accessible?

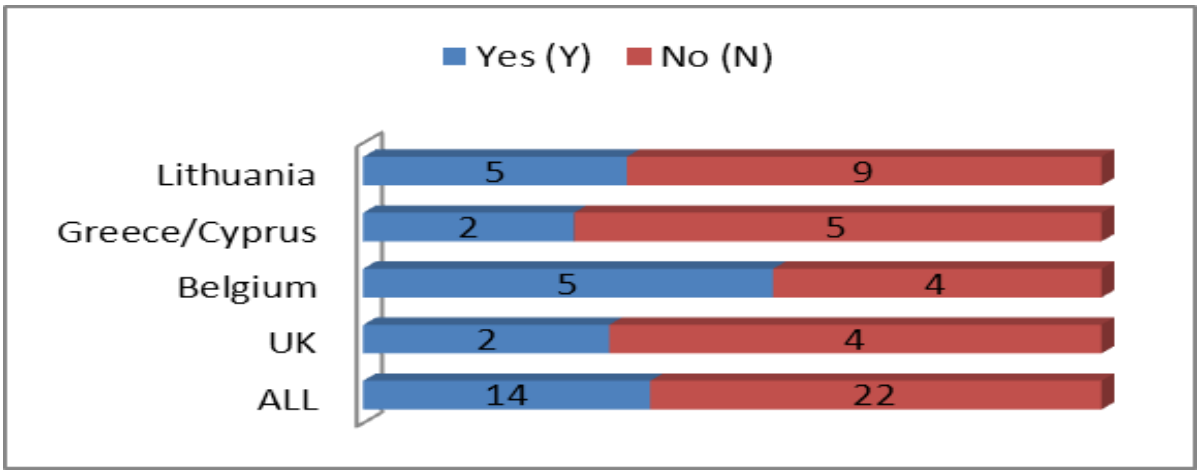

Figure 32: We provide assistive hardware in our training rooms

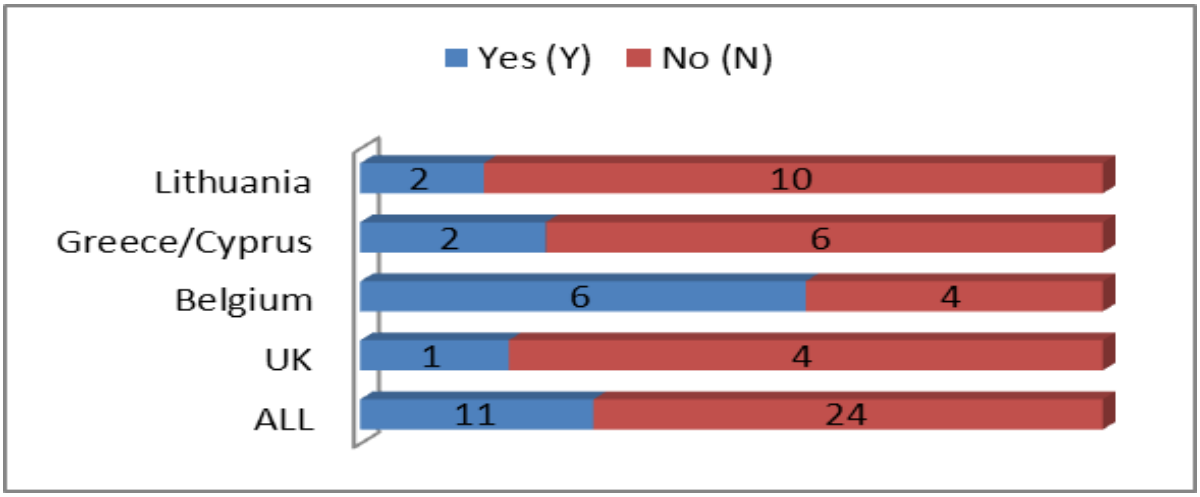

Figure 33 : We provide assistive software in our training rooms

4.7 Support and employment

Social Networks: The data collected shows that by far the most widely used social network amongst people with disabilities and their carers is Facebook which is used in each country. There are some differences between the less widely used networks however, with LinkedIn being the most common career-oriented social network in the UK, Belgium and Greece, but not showing in the Lithuanian data set. A similar pattern emerges for Twitter usage. MySpace appears also as a local anomaly, in only the UK data set.

Online communities: According to our small data set (39 total responses) specific online support communities are used, but infrequently by people with disabilities and their carers in Lithuania, Greece, Cyprus and the UK, but they do not appear to be at all prevalent in Belgium (Figure 34).

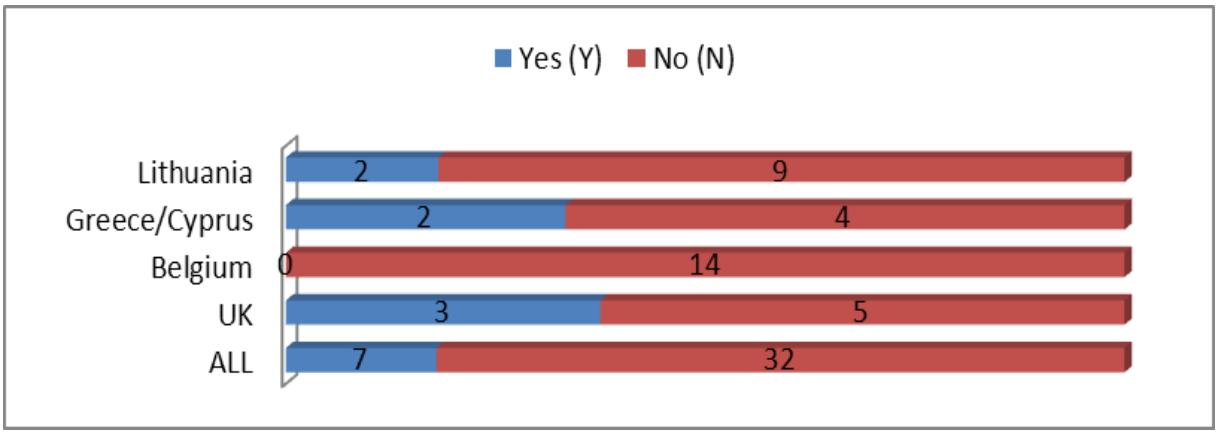

Figure 34 : Responders with disabilities answers to 'I am a member of online communities'

Employment: The only noticeable features of Figure 35 that separate the aspirations of the people with disabilities in the different countries are:

- There appears to be a higher proportion in Belgium who would like to take ICT jobs.
- There appears to be a higher proportion in the UK who would like to take jobs in communications.

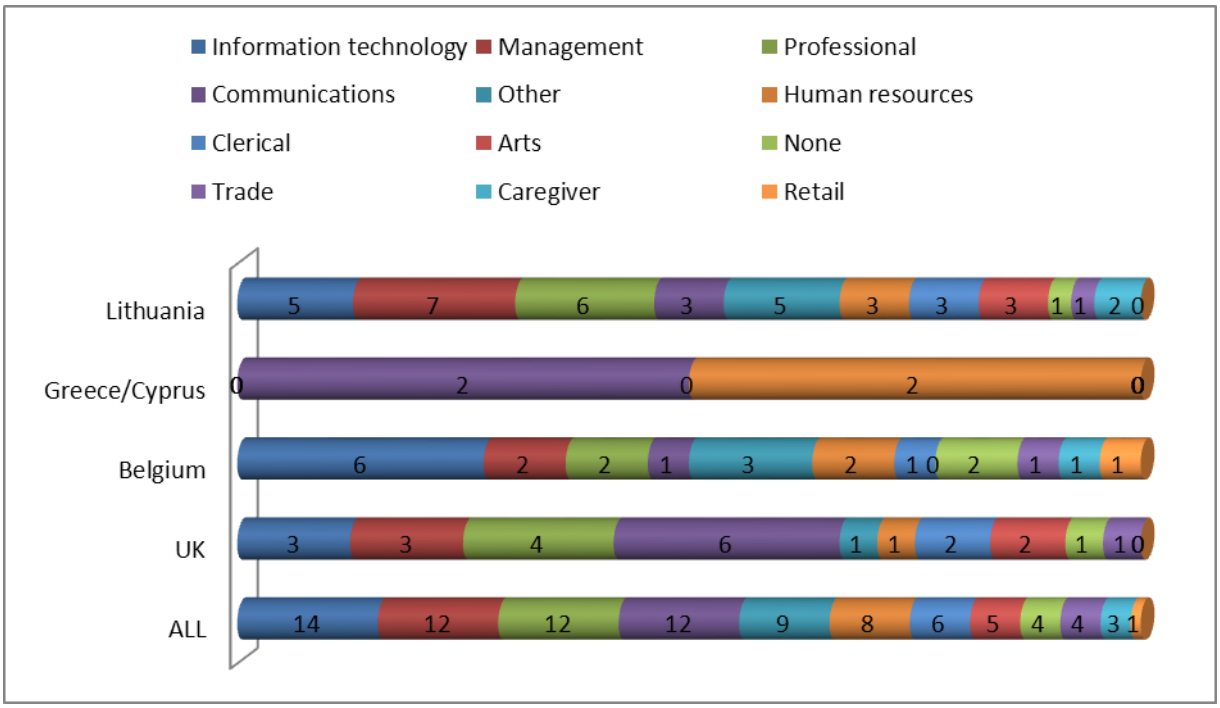

Figure 35 : Job types that people with disabilities think they could take on

5 How does ViPi Address the Findings of the Survey

5.1 Introduction

The following section analyses the data described in sections 3 and 4 to determine how ViPi can affect the end users and stakeholders. It summarises the areas where ViPi's deliverables and curriculum content will be able to improve on the basic ICT teaching and training situation of the survey respondents. It also analyses whether selected ViPi methodologies and pedagogies fit in relation to current expert opinions.

5.2 Community needs

The people with disabilities surveyed expressed that the main problems they experienced relating to ICT training were those of cost and availability of software, the cost of training courses and the training being too brief. ViPi addresses each of the problems by making training materials accessible for free, either offered as Open Source software, or made available under a Creative Commons license scheme, while the ViPi Web platform with its e-learning environment will have free access, allowing users to work at their own rate by using e-learning resources.

ViPi can also in fact provide all of the listed criteria with which people stated they had been happy in both their experiences of ICT and AT training. Training delivered online through an online accessible learning environment, with the possibility to extract it for offline training addresses the discrepancy between types of software available at home and on the training site, because the end-user would make use of the software on his own PC. The comments referring to the trainers not being experienced in the needs of people with disabilities will also be addressed as assistive technology aspects will be provided in AT training material that will be developed by experts in the complimentary ATLEC Leonardo funded project (Assistive Technology Learning through a Unified Curriculum) (ADAM, 2011) which is running in parallel with ViPi from 01/01/2012 till 31/12/2013.

5.3 Relevant methodologies

The experience of self-learning methods was high in all countries but less preferred, indicating a potential problem with the way the self-learning materials are being delivered. The same responders suggested that virtual classrooms, virtual tutors and e-learning methods would be preferable to methods they had experienced, suggesting that it is not the remote nature of the self-learning material that is the problem.

ViPi can provide self-learning materials with synchronous or asynchronous communication support from an individual trainer or groups of trainers, by way of the online learning environment and the Web 2.0 community it will establish, and an e-learning repository, holding relevant learning objects, to enhance the course and reinforce the learning. ViPi aims to offer an acceptable and accessible blended learning approach, taking the convenience of self-learning via readily accessible materials which can be worked through at the student's own rate, and blending this with:

- a support network of other learners and trainers (via the Web 2.0 ViPi community),
- an e-learning environment supporting a repository of learning objects,
- fully accessible training materials,
- a semantically enhanced search engine to find relevant learning objects (utilising a domain-specific ontology),
- comprehensive links to other available materials.

5.4 Pedagogic approaches

Of the pedagogic approaches currently favoured by the trainers, it is of interest that the top responses are the ones best embraced by the ViPi methodology, with tutorials, presentations and demonstrations supported by the modular teaching approach, collaboration supported by the e-learning platform and Web 2.0 components, interaction and discussion supported by the web 2.0 elements of the platform, and games-based learning and drill-and-practice being supported by the rich media learning objects being developed.

5.5 Curriculum content

The basic ICT training in ViPi can address a lot of the training that people with disabilities stated they believed would enhance their employment prospects. The ViPi curriculum covers use of an office suite, internet use, social media and email skills. The platform will be able to support additional higher level modules possibly becoming available from later projects. It cannot, at this stage, address specifically programming and web development. These higher levels of ICT training for people with disabilities were shown as a requirement. ViPi can however provide pertinent links to courses already available online in various higher level subject areas.

5.6 Support and employment

The fact that the people with disabilities surveyed prioritised Information Technology as a suitable job type clearly suggests a need for the basic ICT skills training that ViPi aims to provide.

The high level of usage of Facebook found among people with disabilities surveyed, suggests that the plan to incorporate Facebook linkage within the platform will be a useful addition to the project, and has the potential to act as a self-promotion method for the ViPi platform.

The low uptake of support networks amongst people with disabilities discovered may be due to the diverse methods and systems in which such communities may be set up. An approach whereby multiple disability groups can be brought together with a single platform supporting the creation of such groups may have the potential to establish a common approach to setting up such communities, and a standardised way of discovering and accessing them. The Web 2.0 aspects of the ViPi platform hope to address this.

6 Conclusions

The methodology and the research undertaken at the early stages of the project, allowed for creating a common understanding of the addressed area, that is, the education and employability of people with disabilities in the consortium countries and beyond, in Europe. The recorded results illustrate discrepancies among the Member States, however, safe conclusions were made about the overall picture and the trends.

On a second level, the ViPi stakeholders' survey provided a rich source of information to enable ViPi consortium to take safe decisions on the focusing of its deliverables. The survey analysis shows that the research has value and that creating an accessible set of resources for trainers and content for people with disabilities will benefit the ViPi stakeholder community. It shows that the training methodologies initially selected for the ViPi project are well supported among the current trainer population and that the project stakeholders believe that an improvement in ICT literacy among people with disabilities will improve their employment prospects. It also showed that a high proportion of people with disabilities feel that they could find employment in the ICT sector.

The survey results and statistical analyses in the Member States suggest that ICT training can enhance the skills and employability of people with disabilities. This is supported by the recent and current policy directives in Europe promoting ICT training for all, such as in the Lisbon Strategy and the Digital Agenda.

The ViPi platform will be focused on the need to train and support people with disabilities. If it can successfully address these issues then it may be possible to improve the currently poor correlation between education and employment of people with disabilities.

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