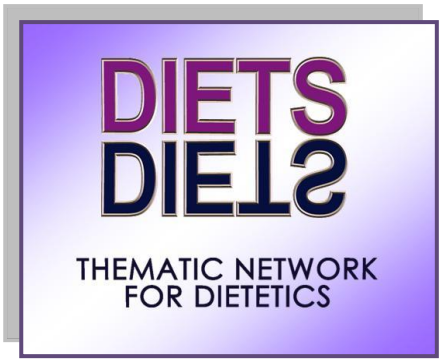

Dietitians Improving Education and Training Standards (DIETS)

Report 1: Building a Technologically Informed Information and Communication Network in Europe

2006-2009

edited by: Anne de Looy

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Major Contributors

Anne de Looy, DIETS Project Coordinator, University of Plymouth, UK

Judith Liddell, DIETS Project Manager, Germany

Inocencio Maramba, University of Plymouth, UK

Ana Catarina Moreira, Higher School of Health Technology of Lisbon, Portugal

Elina Zwickert, German Dietitian Association, Germany

and the DIETS Dissemination Group:

Rute Borrego
Clare Corish
Willem De Keyzer
Vera Ferro Lebres
Andrea Rass-Hunziker
Stefan Storcksdieck
Erisilia Troiano

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Editor: **Anne de Looy**

Copy-editor: **Terry Hyde**

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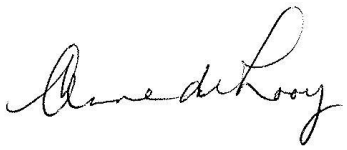
Contact address for publication requests:
Anne de Looy, School of Health Professions, Faculty of Health & Social Work, University of Plymouth, PL4 8AA, UK Telephone +44 (0)1752 238817

Contents

Summary

This report represents an extraordinary and unique exchange of information across Europe through the creation of a website and learning how to use technology more effectively. Over the three-year period the capabilities conducted as part the EU funded Thematic Network 'Dietitians Implementing Education and Training Standards' in Europe (DIETS) are presented here. The number of users registered to access the intranet (password-protected) section of the website grew rapidly from 0 at launch to 965 by the end of the third year.

A great deal of learning and change to practice has resulted as well as closer engagement between HEIs and their dietetic departments across Europe. This Network of HEIs and their dietetic colleagues will endure long after the DIETS Network has finished its work, largely due to the enhanced ITC capabilities. The ultimate benefit to the dietetic profession, their education and lifelong learning and their contribution to nutritional health in Europe will continue to unfold



DIETS Network Coordinator
September 2009.

Background

"*Erasmus networks are designed to promote European co-operation and innovation in specific thematic areas of particular importance to higher education in a European context. In this way, they contribute to enhancing quality, defining and developing a European dimension within a given academic discipline, study area, or furthering innovation and good practice on other aspects of higher education development. This is achieved by means of co-operation within the network between higher education institutions, university faculties and departments. Co-operation should also involve academic and other associations, learned societies, enterprises, and professional bodies, other partners of socio-economic importance in the public or private sector and, where appropriate, student organisations. All networks should bring together an appropriate range of relevant stakeholders concerned. Co-operation within networks is expected to lead to outcomes which will have a lasting and widespread impact on higher education institutions across Europe in the field concerned".*

Dietitians provide advice on nutrition; healthy catering and can initiate or contribute to public health nutrition strategies. They work professionally within complex frameworks of accountability, ethical and legal boundaries in a health service, private practice, industry, local government, education or research and are uniquely equipped to support initiatives such as the EU Platform on Diet, Physical Activity and Health http://ec.europa.eu/health/ph_determinants/life_style/nutrition/platform/platform_en.htm
In 2004, the International Confederation of Dietetic Associations (ICDA) defined a dietitian in this way:

> A dietitian is a person with a qualification in Nutrition & Dietetics recognized by national authority(s). The dietitian applies the science of nutrition to the feeding and education of groups of people and individuals in health and disease. The scope of dietetic practice is such that dietitians may work in a variety of settings and have a variety of work functions.
> http://www.internationaldietetics.org/

The DIETS Thematic Network focussed on harmonisation of the curriculum, practice competence and tools to ensure quality and effectiveness of practice education through face-to-face visits. It encouraged enhanced ITC skills so that dietitians and others could communicate virtually and widely: disseminating information and informing others about the role of the dietitian.
During the period 2006-2009 DIETS was funded to achieve the following aims within the 30 countries and between the 120 Partners who are members of the Network:

- To aid the Bologna and Lisbon processes through mapping and describing all areas of dietetic practice education and training throughout Europe
- To improve communications between educators and dietetic practitioners, to harmonise education and develop quality indicators. In particular in practice education, to develop courses and to publicise best practice through the development of a dedicated website and associated databases
- To facilitate sharing of knowledge and disseminated research findings amongst educators and practitioners about practice education competences and where possible work with other interested parties throughout Europe and internationally
- To develop the role of the dietitian in promotion of nutritional health through embedding lifelong learning competences in first cycle degrees

This report concerns the information and learning that was achieved though the development of the ITC capabilities amongst the DIETS Network Partners.

All of the information contained in this report is available as raw data on the DIETS website.

1.0 Introduction

The Lisbon Strategy (2000, 2005, 2009) recognised the challenges that globalisation, demographic change and meeting the needs of a knowledge society will bring in the fields of increased productivity and economic stability. Europe geographically covers about 10 million square kilometres, so there is a need for increased use of virtual meetings and distance learning technology.

Viviane Reding, (2009) EU Commissioner for Telecoms and Media has stated that a priority for digital Europe is making better use of innovative ICT solutions to meet the objectives of a low-carbon economy. If businesses in Europe were to replace only 20% of all business trips by video-conferencing, this could save more than 22 million tons of CO_2 per year (University of Plymouth, 2008).

The quality of the European dietetic workforce and especially its 'fitness to practice' is a critical component of the agreements from Edinburgh (2005) and Portugal (2007) and the relevant competent authority. Sharing of knowledge and skills across the geographical distances of Europe could be prohibitive unless dietitians, educators and their students fully embrace and exploit the use of information technology and communication skills.

A key objective of the DIETS Network is to improve the communication between educators and dietetic practitioners using new communication technologies (and promote lifelong learning through this medium). The following points were recognised as necessary to meet this objective:

- To develop a website to act as a management tool for dissemination, coordination and pedagogic purposes. The website was seen as a key and pivotal part of the proposal. Dietitians throughout Europe and others would use the site and as such it was seen as an important area for skills development
- Participants would enhance their pedagogic and ITC skills by using virtual learning environments (courses) and by making use of the website for posting and retrieval of information. This would facilitate improved communication skills between students.
- New competence skill acquisition in web-casting and video-conferencing would be facilitated. This would heighten awareness of the reduced need to travel and develop skills for effective communication strategies used by small groups/teams.
- Members would explore the dissemination potential of ITC, including the need to be culturally sensitive and to be informative and precise when posting information on the website.
- IT would be used widely as a management tool for monitoring quality and enhancing activities.

E-learning has the potential to "provide greater coherence between learning in academia and practice" (Rafferty & Waldman, 2003). The use of e-learning in placements could conceivably overcome the barriers of distance and time. The internet not only provides health information, eg there are now a number of tailored interventions for dietary change (Leonie et al, 2009), but also it offers person-to-person support through social networks, message boards, chat rooms, and virtual worlds (Jones et al, 2009).

The DIETS Network therefore established a website which was used as the primary communication channel for all members of the Network. The use of synchronous and asynchronous learning technologies was employed to improve the ITC of all in the Network, including student dietitians. Using the expertise of Partners has advanced understanding and the exploitation of this very significant technology for the 21st century. For example, one Partner has used live interactive web-casting for presentations and for student education for several years (Maramba et al, 2008). Technology used in this way has helped generate a sense of 'presence' for distant students spread across many countries (Jones et al, 2009), and for local students it has helped reduce travel time, money and carbon footprint. (For example, one class of 34 midwives saved over 3500 miles of travel for one session (Doris and Jones, 2009). However, barriers to the

use of IT include lack of equipment and lack of bandwidth in some HEIs and health service settings, and unfamiliarity with the technology.

The need to practice in a safe environment and the need for familiarisation with the whole ITC process with some support in getting started can all help to advance use. Factors such as equity of access, usability, and economic considerations all need to be taken into account.

Stakeholder meetings, consultations and daily interactions using online technologies ('virtual' meetings) were used and encouraged. The use of virtual focus groups is increasingly being used for qualitative research in health (Moloney 2003, Kenny 2005, Swinglehurst 2008).

The Network exploited online technologies and the 3rd Conference had three sessions where virtual presentations were used. The information that follows charts the creation and use of the website over a three-year period. Further, it explores projects undertaken to promote and trial the use of technology to support placement learning.

While this report largely focuses on the use of ITC and the website, DIETS Report 3 (DIETS, 2009c) explores the exploitation of technology to review learning from face-to-face visits and is an important statement of how the Partners in the Network demonstrated their confident use of new technologies to link and share information on placements.

2.0 Building the Network Capabilities

2.1 Background

One of the aims of the DIETS Network has been to improve information technology and communication (ITC) skills of dietitians in Europe in order to enable them to use new technology and communication forms. These skills are considered a basis for lifelong learning and necessary to enable effective dissemination of dietetic knowledge and skills to groups and individuals such as the public, clients, patients, colleagues, and students.

It was agreed that exchange and contact between Network members and between the Network and the public should be based on several communication technologies, with the primary and most important of these being the internet. This required all Network members to have access to the internet in terms of equipment, eg adequate bandwidth and number of computers, screens etc. The internet connection should ideally be fast enough to provide download and upload speeds at a rate that enables users to gain information from websites (especially the DIETS website). Furthermore, the hardware should allow direct and synchronous communication via the internet, for example 'virtual meetings' and video-conferences.

The ITC group was – amongst others - established to support this aim in developing strategies to enable dietitians to use modern technologies. Further, it was planned to invest in technical equipment to provide DIETS Network Partners with the capability and capacity to take part in modern communication and improve the communication between the different Partners from countries across Europe. Two surveys were undertaken to establish the technical capabilities of the Network Partners:

2.2 Survey of Network ITC Capabilities in 2006 (Preliminary Survey)

In January 2006, as part of the preparation of the project proposal, 112 Partners were asked which technologies they had available to them. Each of the 112 respondents stated that they had access to email and internet. 47 Partners also had videoconferencing facilities, while 38 Partners had web-casting facilities. When asked to indicate if they had any other ITC capabilities, 10 stated that they had access to Skype, 2 could use Moodle and 1 had MSN.

2.3 Survey of Network ITC capabilities in 2007/08 (ITC Mapping Questionnaire)

The ITC working group developed the "ITC Mapping Questionnaire" in 2007 to establish which equipment Partners already owned and to explore further the baseline technical capabilities of Partners. The questions addressed the following topics:

- What kind of technology is necessary to use modern communication strategies?
- Which communication strategies does the Network want to use to advance exchange between the Partners and to spread information?
- What kind of information and communications technology will be necessary for DIETS Partners to take part fully in Network communications?
- What kind of ITC is already available?
- Which range of skills is available so that the ITC equipment can be used?

Partners were encouraged to ask a person responsible for ITC within their institution to complete the questionnaire. It was felt that a colleague responsible for ITC and familiar with computer and information systems, software and data processing would provide technological skills and information about the status of equipment that was more reliable. It was also important to establish which Partner institutions had the technical support necessary to install and maintain any equipment that DIETS might provide for the Partner.

2.4 Results and Conclusions

The results of the survey are available at Appendix A. The following is a summary:

- Basic office technology (PC and internet connection) could be provided, installed, operated and maintained by the majority of the Partners.
- Students had insufficient access to all of the technical equipment. Even the basic requirements of PC and internet access were provided by less than a third of the institutions.
- Additional communication tools could not be provided, installed, operated and maintained by the majority of the Partners.
- At the time of the survey, the majority of Partners neglected video-conferencing equipment and software tools. However, accommodation facilities for video-conferencing could be provided by about half of the Partners.
- Communication and working platforms such as Wikis were strongly under-represented.

Overall the availability of IT equipment and the incentive to use the technology was not as strong as had been indicated in a previous survey undertaken in preparation for the Thematic Network bid in 2006 (see 2.2 above). The results from this survey were primarily from HEIs and it seems that for the majority of dietitians working within the healthcare environment, IT facilities and access may be even poorer than that demonstrated above.

3.0 Changes and Innovations in the Network

3.1 Enhancing ITC skills

DIETS identified two main areas in which enhanced ITC capabilities were needed to improve the functioning of the Network. These were the need to host working group meetings virtually and the necessity to broadcast information to Partners and students using video-conferencing.

3.1.1 Virtual Meetings

Five working groups shared the work of the DIETS Network: Network Management (NMG), Dissemination (DG), Education and Practice (EPG), Visits and ITC. Membership of the groups changed throughout the three-year life of the project and 30 people from 21 Partner organisations in 20 countries participated in meetings. Face-to-face meetings were held between once and twice a year there but there was also a clear need to hold virtual meetings at other times. Initially, virtual meetings were held using Skype technology, but some users had problems with accessibility as many Partner institutions did not permit Skype to be operated on their computer systems. There were also difficulties with quality of sound and reliability of connection during meetings.

The decision was taken to use VOIP technology (Voice Over internet Protocol) to host meetings and a license was purchased to use GoToMeeting for this purpose. This proved more satisfactory. Meetings could be accessed over the internet without the need to install any software, thus overcoming the problem that some institutions faced regarding the used of Skype. There was also the possibility of accessing meetings by telephone if this was more convenient for participants. A further additional benefit was that GoToMeeting enabled participants to view documents on their PC screen while discussing them.

Over the three-year period of the project, the various working groups held formal virtual meetings 38 times. Innumerable smaller, informal meetings took place between working group members throughout the project. None of the people participating had used VOIP technology previously, but all felt confident in using it once they had tried it and many reported starting to use the technology in other areas of their working lives too.

3.1.2 Sharing Information with Colleagues and Students

This topic is discussed fully in DIETS Report 3 (DIETS, 2009c). In summary, three centres installed video-conferencing equipment that was used to enable students in six different locations to meet and discuss topics of interest. The students reported finding the experience most informative and enjoyable and all were keen to repeat the exercise. In addition, practice placement teachers and HEI staff who had participated in face-to-face visits, used ITC technology to meet each other again after the visit to discuss changes resulting from the visit. These meetings were conducted using either Skype or GoToMeeting and almost 50% of the people who had participated in geographical visits also participated in a virtual follow-up visit.

3.2 Assessment of Growth and Barriers to Using ITC

In June 2008 a discussion board was opened on the DIETS website to explore the views of users on their preferred methods of interaction with the Network. Four questions were asked and these were also mailed directly to the nominated contact person from each Partner organisation. The questions were:

1. Would you prefer to receive information directly by email?
2. Would you like to be more regularly notified of specific information or discussions on the website?
3. Have you any ideas on why the discussion boards are not being used?
4. Any other ideas for improving interactions?

Of the 26 Partner representatives who responded, 22 stated that they preferred to receive all

relevant information directly by email. However, when asked if they would like to be notified more regularly about website updates and discussions, only 10 responded positively, most of the rest stating that the weekly notification they already received was sufficient.

In response to the question about use of discussion boards the most commonly cited reason for them not being used was lack of time, followed by lack of knowledge of their presence.

When asked for ideas about improving interactions the most common response was to ask for more information by email. It seemed that in June 2008 the communication technology preferred by Partners was email.

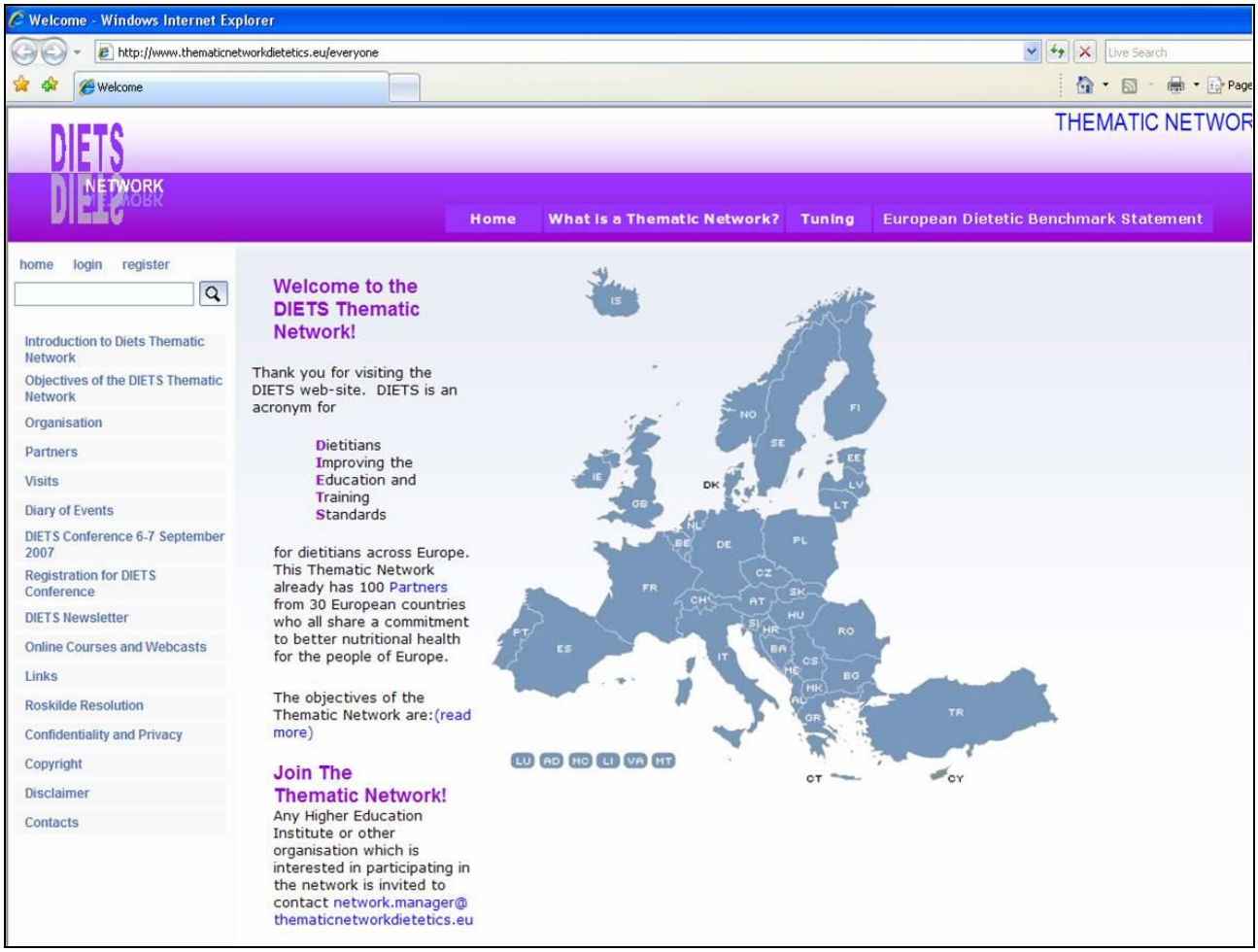
An interactive workshop at the 3rd DIETS Conference in September 2009 enabled delegates to experience participation in a web-cast. The experience proved to be popular with the participants, and was highly rated in the conference evaluation survey. It seemed that once people had experience of interaction with new technology they were quite happy to continue using it. However, overcoming initial reluctance to engage with new technology still presented a challenge.

4.0 The Website

4.1 Website Design and Structure

An integral part of the DIETS Network was the implementation of a website providing information about the scope of the project. The website was also designed to serve as a communication and working platform for all Diets Partners. One of the key features of this site is that all registered users could upload information that could be accessed by all other Partners.

Figure 1 The DIETS Website Home Page 2006-2007



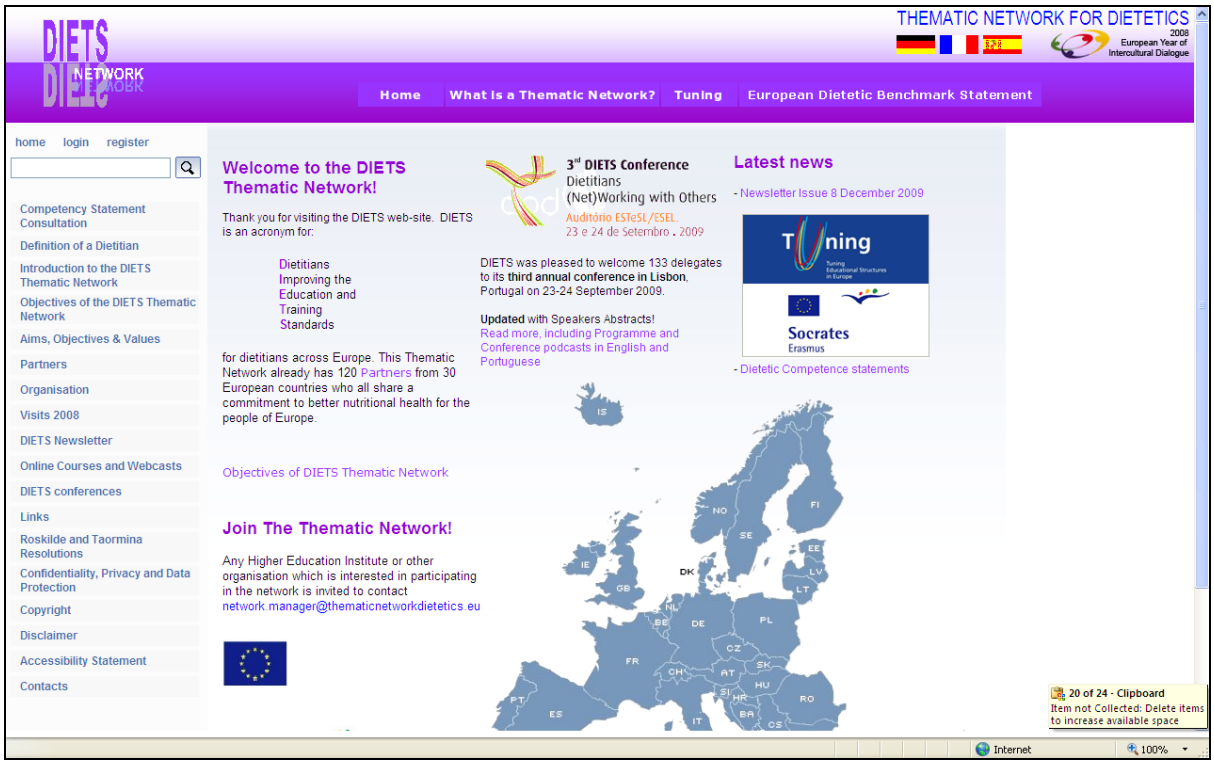
At launch in March 2007 the public area of the website contained:

- DIETS & Socrates logos
- Introduction to the Thematic Network
- Objectives of the Thematic Network
- Information about each working group
- List of Partners
- Information about visits
- Diary of events
- Conference details
- Newsletter
- Copyright and confidentiality information
- European Dietetic Benchmark Statement
- Information about Tuning

At launch the password-protected intranet contained:

- Guidelines on how to use the website
- Address book, with photos and contact details of registered users
- Copy of project documentation
- Information about reimbursement of expenses
- Diary
- Minutes of work group meetings

Figure 2 The DIETS Website Home Page September 2009



By September 2009 the website content had increased greatly.

The European Dietetic Competence Statements, in 15 languages, had been added to the public pages. Seven newsletters were available for the public to download, as were abstracts of the presentations and poster abstracts from the DIETS conferences. However, the main area of growth had been in the intranet.

In total 40 separate intranet users had uploaded varying amounts of information. This ranged from copies of documents used during student practice placement, to re-usable learning objects, to distance learning and funding opportunities. 943 people had registered to use the intranet. Their contact details were available to all other registered users through the “address book”, enabling effective communication within the Network.

Weekly notifications were sent to all registered users to inform them of all updates that had been made to the website each week. From log-in data it could be seen that these notifications stimulated increased interest in the website content on a weekly basis.

4.2 Disability Discrimination Act (DDA) Compliance and Web Accessibility

Shortly after the launch of the website, DIETS addressed the need to ensure equality of access by all users of the website. In the UK there is a legal requirement under the Disability Discrimination Act (1995, 2005) to ensure that all users can access websites. It demands that websites are created in a way that is accessible to people with disabilities and is thus DDA -compatible.

The World Wide Web Consortium (W3C) http://www.w3.org/Consortium/ extended the concept of 'accessibility' in a much more expansive way, as follows. Full accessibility requires that a website be designed taking into account the needs of people with physical and/or mental restrictions that complicate their use of the internet in general and of specific websites in particular. Web accessibility requires that everyone can use the internet, irrespective of any physical and/or technical difficulties

Accessibility also requires independence from the platform: websites should also be usable with/by a screen, PDA or mobile phone and should function independently from the user's operating system and from browsing software.

Equally important as the technical requirements is the need for websites to provide information (content) in a simple and clear manner, with regard to language and graphics.

These standards and guidelines aim to create a worldwide web that is easily accessible by everyone. The DIETS Network recognised the value of providing an easily accessible website and upgraded the website to meet the newest requirements as far as was practically possible. An accessibility statement was published on the website with contact information where users could get help if necessary.

Further information on this topic and details of the steps taken to ensure that the public pages of the DIETS website were accessible to all users are given in Appendix B.

4.3 Website Confidentiality, Copyright, Privacy, Data Protection and Disclaimer

The website became the central point of communication for the Network: acting as an information source, a repository for activities and outcomes and an interactive media tool for use by the Partners. It was therefore important to establish some priorities for the use of the website for Partner members and other users. The ITC developed statements about copyright, confidentiality, privacy, data protection and a disclaimer that were published on the website. Further details about these statements are given in Appendix C

4.4 Evaluation of Use of the Website

The level of acceptance and the use of the DIETS website were evaluated over different periods throughout the project. The initial work of the ITC group was to design and implement a functioning website that could meet all the dissemination and communication requirements of the Network. The website was launched in March 2007 (Figure1).

Google Analytics was set up in May 2007 to track website access. For purposes of comparison it was decided that three data sets should be used, one for each of the three years of the project. As the tracking system was started in May 2007 and the project ended in September 2009 it was decided to use data collected from May to September for each of the three years (2007 to 2009). It is possible that using these time frames does not accurately reflect website usage throughout the year as most European HEIs take a long summer recession at some point during the period May to September. Consequently it is reasonable to suppose that total website access figures in other months of the year were higher than those shown here.

4.4.1 Public Pages - Visitors and Users

Table 1 Origin of Visits to the Website

	01/05/07 – 30/09/07	01/05/08 - 30/09/08	01/05/09 - 30/09/09
Number of countries/territories from which visits originated	68	118	112
Continents from which visits originated	1. Europe 6,538 2. Asia 800 3. Americas 104 4. Africa 9 5. Oceania 9	1. Europe 7,251 2. Asia 541 3. Americas 380 4. Africa 53 5. Oceania 52	1. Europe 5,211 2. Asia 482 3. Americas 396 4. Oceania 105 5. Africa 61
European countries from which most visits originated	1. Italy 1,215 2. Netherlands 923 3. United Kingdom 916 4. Greece 572 5. Turkey 560 6. Sweden 501 7. Portugal 368 8. Belgium 353 9. Germany 254 10. Spain 239	1. Sweden 725 2. Portugal 634 3. Netherlands 612 4. France 601 5. Spain 600 6. United Kingdom 564 7. Greece 541 8. Germany 537 9. Italy 357 10. Switzerland 331	1. United Kingdom 623 2. Portugal 600 3. Spain 565 4. Belgium 432 5. France 417 6. Greece 393 7. Germany 380 8. United States 260 9. Netherlands 218 10. Ireland 193

The DIETS Network had Partners in 30 EU countries, but the website was accessed by people from 68 countries or territories in 2007, 118 countries in 2008 and 112 countries in 2009. This indicated that interest in the project extended further than just the Partners. While the majority of visitors were from European countries, between 12% (2007, 2008) and 17% (2009) of visits were from Asia, the Americas, Africa and Oceania.

The European countries from which most visits originated changed throughout the project. In 2007 most visits came from Italy and The Netherlands, then in 2008 from Sweden and Portugal. In 2009 most visits came from the UK and Portugal. The reasons for these changes cannot be definitely given, but it could be supposed that they resulted from increased promotional activities in each of the countries concerned. As a large number of dietetic competence consultancy questionnaires were returned from Sweden in 2008 and the 3rd DIETS Conference was held in Portugal in 2009, this might account for the popularity of the website with visitors from these countries.
The disproportionate interest from Italy in 2007 has not yet been explained.

Table2 Number of Visits to the Website

Activity	01/05/07 – 30/09/07	01/05/08 - 30/09/08	01/05/09 - 30/09/09
Number of visitors	4853	5,633	4,148
Number of visits	7462	8,285	6,260
New visit	4,844 (65%)	5,141 (62%)	3,818 (61%)
Return visit	2618 (35%)	3,144 (38%)	2,442 (39%)
Number of page views	20,739	22,821	14,605
Average number of page views per visit	2.78	2.75	2.33
Average time on site (minutes)	2.04	1:57	1:42

Comparison of the frequency of website access over the three years shows that the number of visitors in 2007 and 2009 was similar while there was an increase in visitors in 2008. This is probably as a result of a consultation exercise conducted in 2008 to elicit the views of practising dietitians regarding proposed "European dietetic competence statements". This was the first time that practising dietitians had been individually approached and asked to access the website. More than 1000 questionnaires were completed and uploaded during this consultancy and this could account for the increased number of visitors in 2008.

The proportion of return visits increased steadily from 35% to 39% over the duration of the project. This shows that as the project progressed, more users were returning to access information. In addition, fewer pages were being accessed in each visit, indicating that users knew what they were looking for and were not simply browsing. However, the total number of new visits during the three 5-month reporting periods was almost 14,000. By extrapolation it could be calculated that over 30,000 people accessed the DIETS website at least once during the project.

Table 3 provides information on the pages most frequently visited. This shows that most visits started on the homepage. Thereafter the most popular pages were those giving information about DIETS conferences and DIETS newsletters. There was also interest in the Partners, the Network management structure and the "definition of a dietitian".

Table 3 Website Pages Most Frequently Visited (in descending order)

01/05/07 – 30/09/07	01/05/08 - 30/09/08	01/05/09 - 30/09/09
Homepage	Homepage	Homepage
Newsletter	Partners	Conference
Conference	Visits	Definition of a dietitian
Network management organisation	Definition of a dietitian	Newsletter

Overall, it is interesting to see that the results stay similar throughout the project. While a greater increase in number of visits would have demonstrated an increased awareness of the project throughout the world, the steady level of access throughout the project indicates a continuous interest in the website and the project.

4.4.2 Intranet - Visitors and Users

Evaluation of the use of the DIETS intranet (password-protected area) was more difficult as Google Analytics could not be set up to log usage of a password-protected area. Internal logging revealed that the number of registered users increased steadily throughout the project, as shown in Table 4.

Table 4 Registered users and Number of Items on Website

Date	Registered Users	Number of Items
Jan 07 - start	7	20
May 07	214	294
May 08	592	520
May 09	894	688
Sep 09 - finish	943	745

When the intranet was first developed in January 2007 only seven people were registered to use it. This number had increased to 943 registered users by the end of September 2009.

By the end of the project, 40 of the registered users had uploaded information and 41 Partner organisations had created links from their websites to the DIETS website.

By September 2009 the number of items available on the website was 745, with 1250 attachments. The total volume of data uploaded onto the website during the project amounted to 1.9 Gigabytes.

4.4.3 Users Survey Report

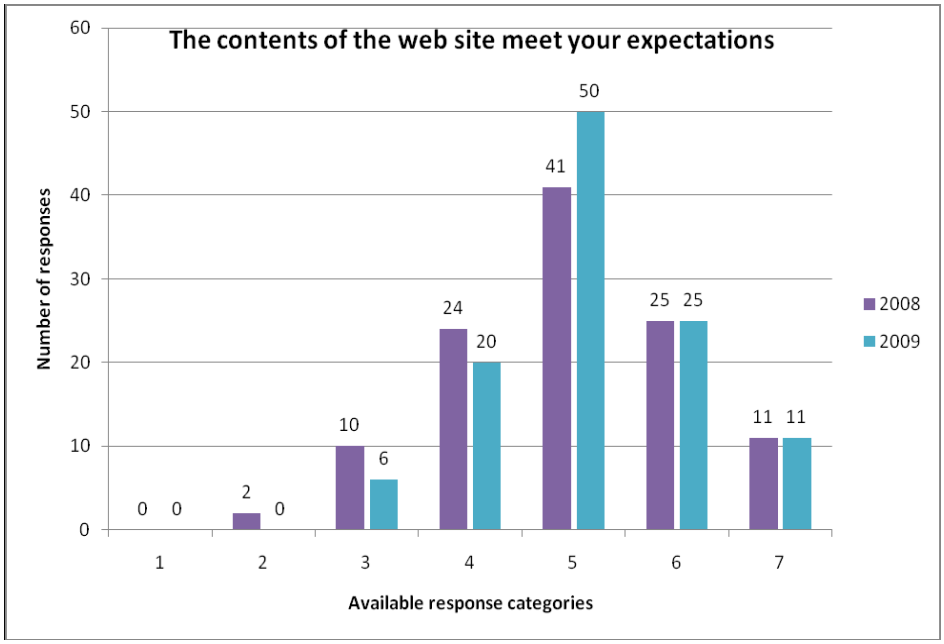
To evaluate the level of satisfaction with the website, registered users were asked to complete an online questionnaire. The questionnaire contained six statements (seven in 2009) and visitors to the intranet were asked to rate the statements using a Lickert scale from strongly agree to strongly disagree. The statements were:

1. The contents of the website meet your expectations
2. The contents of the web pages adequate for your needs
3. The website look good
4. It is easy to find the information you want
5. You plan to change how you work as a result of the information on the website
6. You already changed how you work as a result of information on the website
7. Have you used any items from the DIETS website for teaching purposes?

Respondents were asked to rank their view from 1 (strongly disagree) to 7 (strongly agree). Agreement with a statement was assumed if the respondent chose a number higher than 4.

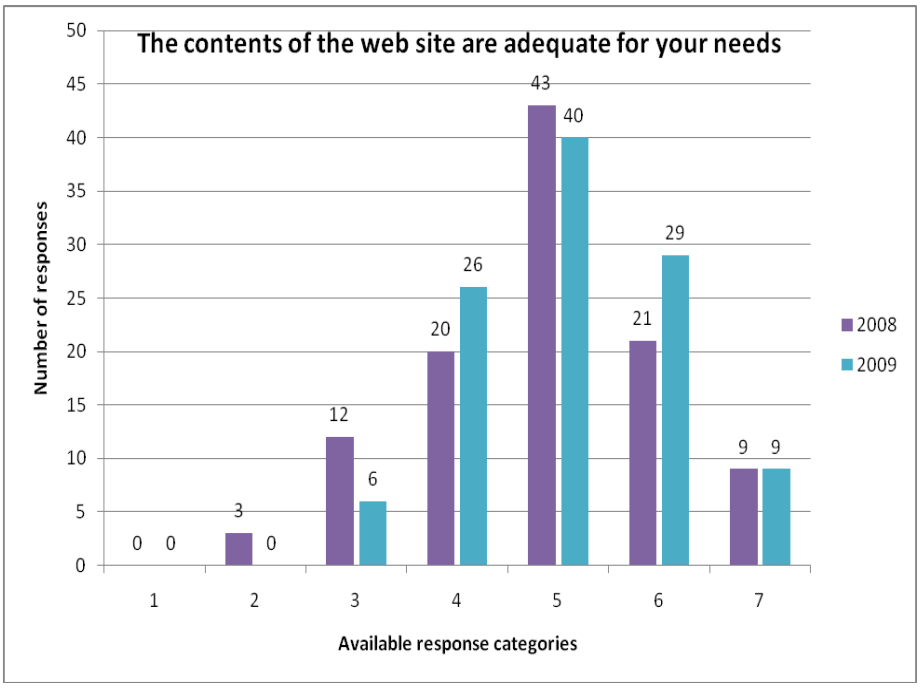
The questionnaire was published on the opening page of the intranet so that each time a user logged into the intranet they were given the option to answer the questionnaire. The questionnaire was posted on the intranet twice: in August 2008 and again in May 2009. This was to enable results to be compared and to track any variation after changes to the website. 113 people answered the first questionnaire, 104 answered the second. The results from the seven statements are as follows:

Statement 1:



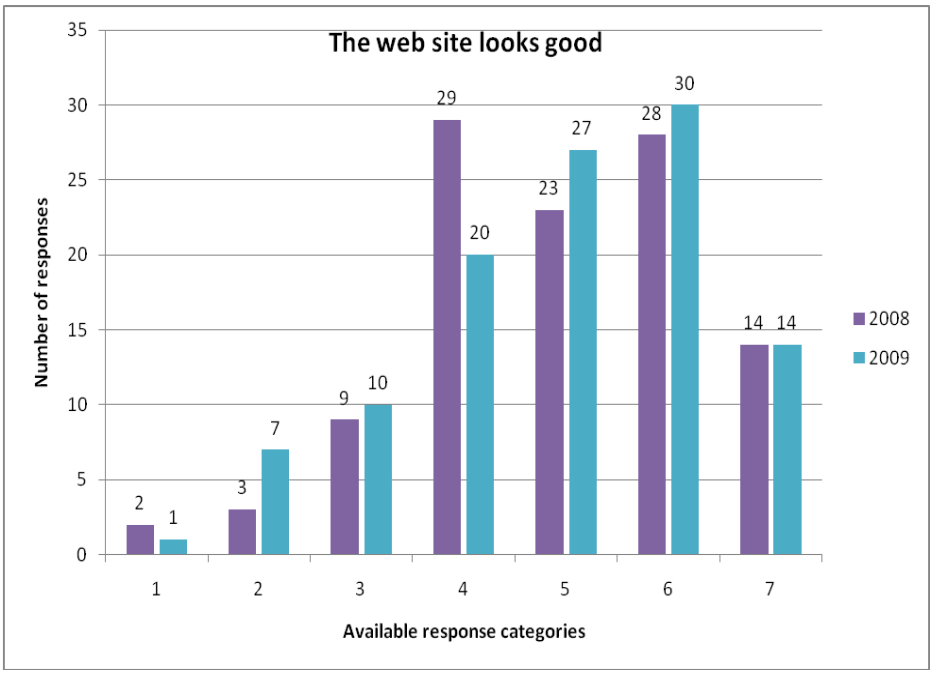
Of respondents, almost 80% (2008) and 85% (2009) classified this statement positively, and in both years more than 20% ‘strongly agreed’.

Statement 2:



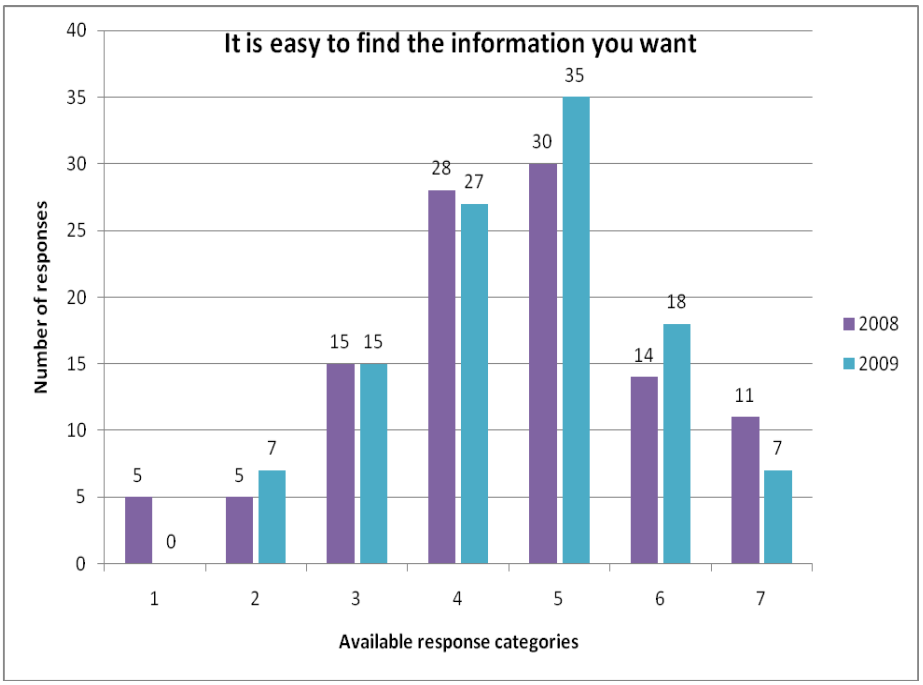
Here 65% of respondents reported that the website was adequate for their needs in 2008. This figure had risen to 75% by 2009. This could be a result of the changes made to improve DDA compatibility, or it could be as a result of the increasing amount of data that was stored on the website.

Statement 3:



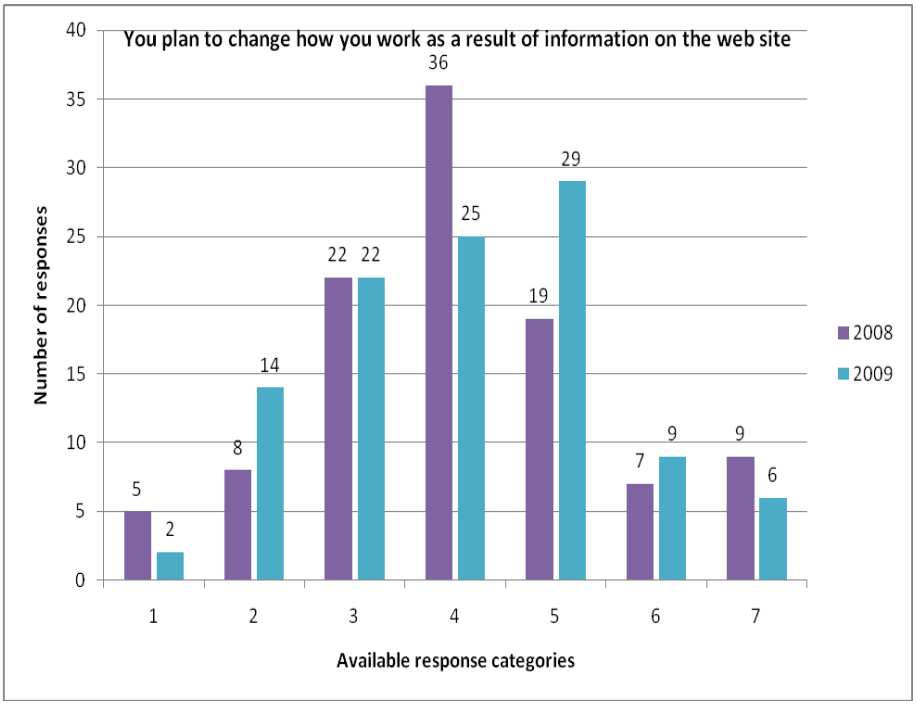
Respondents indicated that the design of the website had improved throughout the project, with slightly more respondents reporting being satisfied in May 2009 than in August 2008. In 2008 approximately 57% were satisfied and by 2009 the number had risen to 63%. Additionally the most frequently selected classification was 5 in first survey and 6 in the second.

Statement 4:



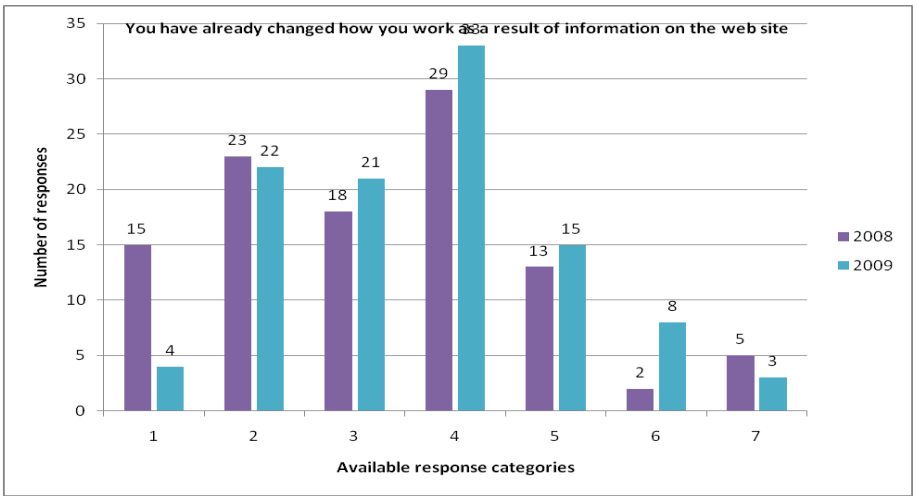
Respondents did have some problems finding the information they wanted; with slightly less than half (48%) reporting they were happy in 2008. This figure rose to 56% in 2009, despite the fact that even more information was available, but obviously room for improvement remained.

Statement 5:



In 2008 only 35 respondents claimed they planned to change their method of working because of the information on the website. By 2009 this figure had risen to 44.

Statement 6:



The number of respondents who claimed to have already changed their working practices as a result of information on the DIETS website rose from 20 in 2008 to 26 in 2009, demonstrating that the website did contribute towards the achievement of at least one of the main DIETS objectives, namely to generate change in practice. This result might be due to increased efforts during 2009 to publish practical working material for teaching, learning and research on the website and to the increasing amount of data on practice placement education generated by the visits and uploaded throughout the project.

Statement 7: Have you used any items from the DIETS website for teaching purposes? (2009 only):

Yes: 55 responses (51%)
No: 52 responses (49%)

One of the aims of the Network was to create a resource of re-usable learning objects for use by teachers of dietetics throughout Europe. Another was to provide website users with downloadable information about the Network, such as power point presentations and printable posters, so that they could promote the Network within their own environments. It is encouraging to note that 55 people claimed to have made use of these resources.

4.5 Discussion

Results indicate that the website increasingly fulfilled the expectations of the users. This could be as a result of the increased amount of data, multiple files and research databases that were created during the project.

In light of the difficulties usually encountered when introducing change to academic curricula it is both surprising and gratifying to note how many respondents not only planned to make changes but claimed to have already introduced changes as a result of information on the DIETS website. The use of materials from the DIETS website for teaching and assessment proposes will contribute to a harmonization of dietetic education and training in Europe.

Most of the information generated by the Network remains exclusively accessible to Partners, who are registered to use the website intranet. Given the large number of visits from those outside the Network, there is a potential for this information to be disseminated and exploited more widely in future.

Despite the mainly positive responses of respondents there is still a need to improve the accessibility of the website. Thought should be given to this aspect before the information is “rolled out” to others.

5.0 How To Use ITC Support Practice Placements: A Research Project

5.1 Introduction

The best mix of internet methods for professional and patient communication depends on several factors. These include work patterns, time differences, command of the language and IT systems used as well as personal preferences. However, the adoption of e-learning technologies is no guarantee of success. There should be sound pedagogical and operational reasons for the introduction of a learning technology. Consequently, stakeholder consultation is important for a successful implementation of a learning technology. Stakeholder consultation using online technologies (virtual focus groups) is increasingly being used for qualitative research in health [Moloney (2003), Swinglehurst (2008), Kenny (2005)]. In placement learning there may also be technical barriers (firewalls) as well as organisational (time, access, support). DIETS will conduct a stakeholder consultation on using online technologies for placement learning. An online synchronous method (interactive web-casting) and an online asynchronous method (web-based discussion board) will be used for the consultation.

Synchronous methods have the following advantages and disadvantages:

- They take place at a specified time, and so may be easier to schedule.
- They may provide greater “connection” and “engagement” as participants interact in real time with each other, mimicking a real life conversation.
- The immediacy and urgency of a synchronous activity may not give time for participants to reflect and properly word their responses.
- Technology failures have consequences that are more drastic in synchronous activities.

In contrast, asynchronous methods allow more time for reflection and allow easier division of various discussions into “threads”. However, these methods may be less “engaging” to the participants.

5.2 Aims and Objectives

The aims of this research project were:

- To obtain the views of stakeholders about how to best implement e-learning for placements in dietetics
- To compare synchronous and asynchronous methods, in particular taking into account the English language abilities of the stakeholder participants

The objectives were:

- To determine, via stakeholder consultation, views on how to introduce web-casting and web discussion boards in placement learning
- To document the factors necessary for conducting a successful focus group discussion via interactive web-casting (synchronous method) and web-based discussion board (asynchronous)

5.3 Research Questions

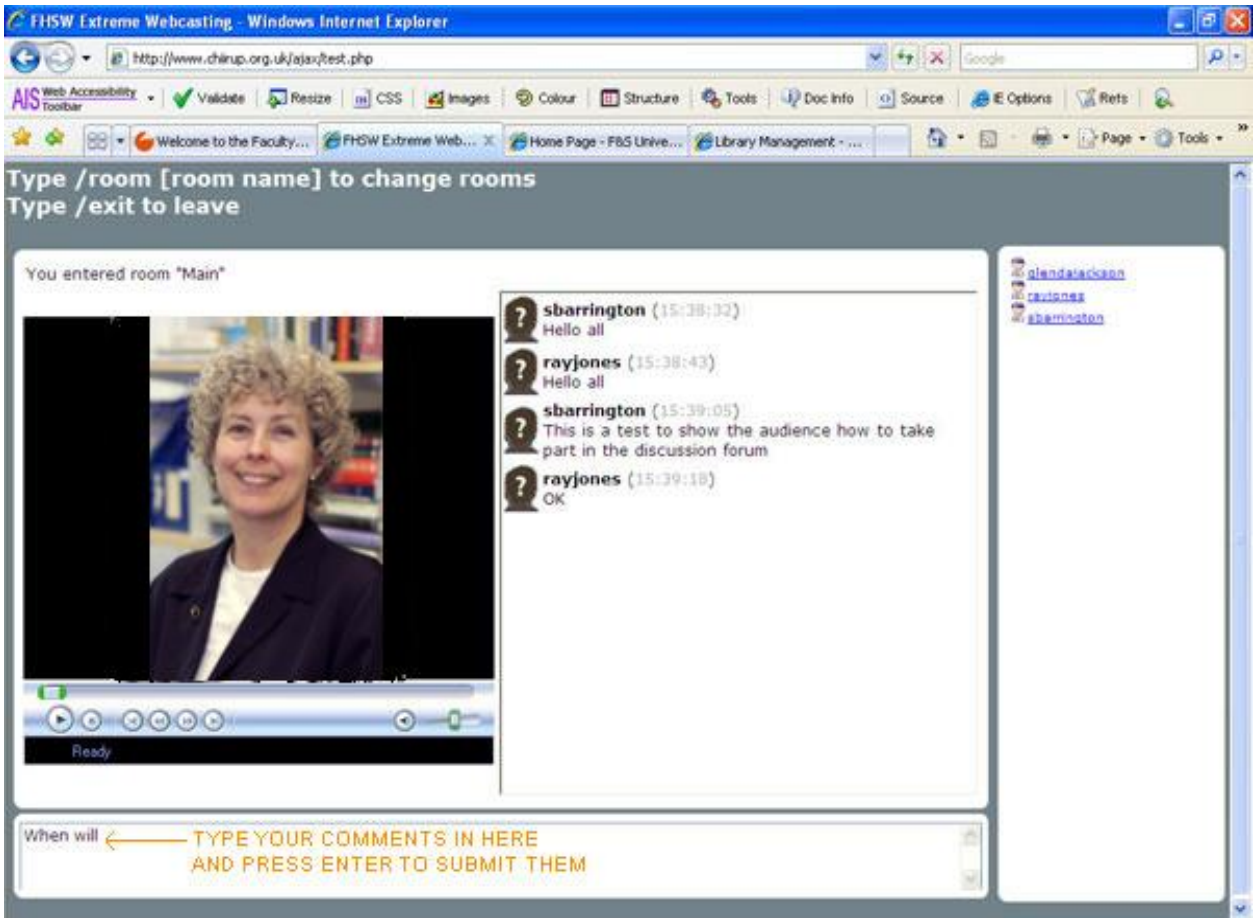
- Is it possible to successfully conduct a stakeholder consultation using online technologies?
- What are the advantages and disadvantages of the synchronous (web-casting with interactive chat) and asynchronous (web-based discussion board) methods for stakeholder consultation and how do these depend on having good command of the same language?
- What are the views of stakeholders about the best technologies for placement learning in Dietetics?
- What factors influence the choice? What are the barriers / enabling factors?

5.4 Method

All Partners of the DIETS Network were invited by email to take part in a web-casting to discuss the advantages and identify the anticipated difficulties of sharing and discussing information using ITC. Respondents completed an online questionnaire to record the demographics and information about learning styles.

A web-cast was designed and is available on the website; Figure 3 shows the screen. Those responding were invited to take part in either a synchronous discussion or asynchronous chat room.

Figure 3 The Screen of the Webinar



A recording of the webinar was then transcribed and data grouped according to topic.

5.5 Results

From a potential population of 120 Partners, 36 participants (dietetics lecturers, placement tutors, and dietetics students) expressed interest in trying web-casting and a discussion forum. Of these, 24 completed the baseline questionnaire and 19 took part in live web-castings where they discussed the advantages and disadvantages of synchronous (web-castings) and asynchronous (discussion forum) communication for placements. Some of the advantages of web-casting were thought to be:

- ability to have scheduled sessions so that students and teachers could use the computer clusters in their institutions
- being 'forced' to do a task at a stated time without procrastination
- the interactivity

Asynchronous methods were thought better for being able to answer in your own time especially if English was being used. There follows a more detailed analysis below grouped into five themes identified from the transcripts.

5.51 Best Use of Technologies

- Synchronous methods are more appropriate during work hours; they allow use of institutional computers.
- They allow one to focus on the task at the stated time
- They allow more interaction than written information.
- Asynchronous methods are useful during evenings and when students are not in the institution.
- They are more useful for placement (no reason given, possibly no computers at placement site).
- They are used for group discussions and as a method of peer assessment of group case studies.

5.52 Topics That Can Be Discussed Using E-Learning During Placements

- implementation of health improvement strategies
- treatment updates
- dealing with patients from different countries
- aspects of culture
- assessment methods
- learning outcomes for specific placements/settings
- monitoring student progress
- updating placement trainers on current teaching methods and content
- sharing of current practice with university staff
- recommended literature and software and interactive programs updated for EU

5.53 Personal factors that may or may not affect the implementation of e-learning

- Agreement that the sex of participants is not a factor that affects e-learning implementation.
- Personal scheduling is a factor.
- Need for good IT skills
- Older health practitioners may not have access or time for computer use.

Comments included:

- *Identification of a time to suit all who wished to participate in synchronous methods would not depend on their sex.*
- *I don't know if personal factors would affect implementation, from the student point of view I think many aspire to this learning style.*
- *Difference in gender, I don't think so.*
- *Language, yes if it would be across borders*
- *No I do not think that there is a sex difference here but you do need to have good IT skills & a good backup facilities for web-casting.*
- *Our students have the confidence but older health practitioners may not have access or even much time to use a computer.*

5.54 Which personal factors might affect synchronous/asynchronous e-learning?

- *Web-casting is good for mindmapping*
- *Asynchronous is easier for clinical setting*
- *Some prefer listening / talking to text chat or reading and writing asynchronously*
- *Written English (as opposed to spoken English) is better for those whose native language is not English*
- *Text chat or asynchronous may be better*

5.55 Organisational factors that may affect the implementation of e-learning

- *Access to a computer for a synchronous activity can be difficult in a hospital. Asynchronous would be better.*
- *Problem with downloading special software for use in institutions.*
- *Asynchronous e-learning can solve some problems with scheduling. Synchronous requires more flexibility with timetables.*
- *E-learning can be useful for students who are overseas.*

5.6 Discussion

The participants in the study identified key factors that could inhibit or support the use of IT in enhancing communication and exchange of information. The major concern was for those whose first language was not English and who may not be of a generation to have ”grown up” using IT. It was thought this group would prefer asynchronous communication. Another factor that may reduce accessibility is the high level of firewall protection in the computer systems of some institutions. Synchronous learning provides some flexibility in scheduling. Accessing online materials asynchronously is preferable. There was agreement on the importance of more discussion on placement learning and the ability for practice placement teachers, academic staff and students to share. This was practicable only if technology could be accessed and language difficulties could be overcome.

6.0 Conclusion

The IT Mapping Survey undertaken early in the project showed a Network of Partners that was not rich or comfortable with IT, neither in equipment nor in expertise. However, over the course of the project, Partners learned a great deal about using technology as a communication tool and three Partners invested further to enhance their IT facilities.

The use of technology to communicate with other Partners in HEIs and in practice, with dietitians and students synchronously or asynchronously was debated online and 'virtual' student seminars were held. This represents valuable learning, enhancement of skills and a commitment to keep developing ITC expertise was expressed.

Following continuous development over three years, the DIETS website now offers a rich resource of multiple files and research databases. These contain information to promote the work and knowledge base of dietitians and others working in dietetics and public health nutrition across Europe. The extensive address book enables rapid and widespread dissemination of new information and supports the functioning of the Network.

Most of the information generated by the Network remains exclusively accessible to Partners, who are registered to use the website intranet. Given the large number of visits from people outside the Network, there is a clear potential for this information to be disseminated and exploited more widely in future.

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Appendix A
ITC Mapping Questionnaire Results

Partners were asked if the following technical equipment was already available in their institution. (If not, they were asked if they had the necessary technical skills available to install and maintain such equipment):

- pc
- internet connection
- webcam
- microphone / headset
- video camera
- digital camera
- video recording / editing software
- audio recording / editing software
- Skype/ other voice chat software
- instant messaging software
- video-conferencing equipment
- video-conferencing camera and console / bridge
- video-conferencing screen / monitor
- sound card for every pc

Results and Outcomes

All 112 of the DIETS Partner institutions were asked to take part in this analysis and 32 institutions responded. Approximately 75% of the respondents had nominated an ITC specialist to respond to the questions. This meant that the information was as reliable as possible. The following represent the key outcomes to the questionnaire:

a) Provision of technical equipment
Basic office technology such as personal computers and an internet connection was provided by most (83%) of the Partners. The level of additional communications technology varied among the Partners. Generally, soundcards, digital cameras and microphone/ headsets were present in the majority (or at least half) of the Partner institutions. Webcams, video cameras, video and audio recording/editing software was less common: between 45% and 54 % of the Partners reported that they did not provide this technology.

b) Ability to install technical equipment
Between 50% and 60% of the Partners stated that the specified communication hardware and software could not be installed locally. In addition, approximately 30% of questionnaire participants did not answer all questions regarding the ability to install equipment, so it is possible that an even higher percentage of institutions could not install technical equipment. It is not known if this was due to legal or technical barriers.

c) Operation of technical equipment
According to the questionnaire, the majority of respondents could operate basic office and communication technology as PCs, internet connection, web camera and soundcards (PCs 71%, internet connection 68%, web camera 58% and soundcards 61%). Between 44% and 55% of the respondents stated they had the capability to operate specific communication technology as microphone/headsets, video cameras as well as audio and video recording and editing software. Again, the percentage of non-respondents was comparatively high, varying between 22% (PC) and 39 % (audio and video recording and editing software).

d) Maintenance of technical equipment
Basic technologies such as PC and internet could be maintained by 71% / 68% respectively. 55% could maintain communication technology such as video/audio recording/editing software and Skype/chat. 45% could maintain video-conferencing equipment (camera, console/ bridge, monitor) and software. Non-response ranged between 19% (PC) and 39 % (audio and video recording and editing software), which implied that an even higher proportion could not maintain technical equipment.

e) Access of teachers to technical equipment
68% of respondents had access to PC and internet connections. For all the other specified communication technologies, it is of note that less than half of respondents had any access to them. Access to video-conferencing equipment and software was especially low, ranging from 10% to16 %. The access to audio and video recording and editing tools was slightly higher ranging from 16 to 19%. It has to be emphasised that the rate of non-response regarding video-conferencing equipment, camera and console/ bridge and video-conferencing screen / monitor varied between 48% and 52%.

f) Access of students to technical equipment
61% of the Partners reported student access to personal computers and 58% to the internet. This meant that almost half of the Partner institutions could provide internet access to their students. Roughly one third of the Partners did not offer access to any additional communication technology for students. Generally between 50 and 60% of the institutions did not answer the questions regarding student access to communication technology. It can be assumed that this exceptionally high rate originated from uncertainty regarding access conditions.

g) Speed of bandwidth
While half of the Partner institutions provided a bandwidth of 2 megabits/sec or greater, 10% of respondents stated a lower bandwidth. 23% did not answer this question.

h) Average internet speed in megabits/sec
The average bandwidth of institutions with a bandwidth higher than 2 megabits/sec is 71.8 megabits/sec with a minimum of 10 megabits/sec and maximum of 128 megabits/sec.

i) Operating Systems (OS)
The following list shows the proportion of institutions using each OS as a percentage of the total number responding

Operating System	Percentage of Institutions
Microsoft Windows XP	64.5%
Microsoft Windows 2000/200 x server	22.6%
Microsoft Windows Vista	19.4%
Microsoft Windows 98/ME	6.5%
Apple Macintosh OS	6.5%
Microsoft Windows NT	3.2%
Not completed	25.8%

j) Room/ Hall for Video-conferencing
58 % of the Partners reported having facilities suitable for video-conferencing, while 19% did not have adequate facilities. Remarkable here is that only 3% did not answer the question.

k) Accommodation for Video-conferencing
The Partners reported facility capacities between 5 and 180 people for video-conferencing. Average facility size could accommodate 40 people.

l) Provision of Wiki or Discussion Board Site
10% of the institutions had a Wiki or Discussion board site which could be linked to the DIETS website. 45 % did not have adequate platforms. 26% did not respond to the question.

Appendix B
Disability Discrimination Act Compatibility and Web Accessibility

The DIETS Network worked towards complying with Priority 1 of the W3C Web Content Accessibility Guidelines by continually making improvements to meet these guidelines. The public areas of the website were designed with the following accessibility guidelines in mind:

Page Structure

- Web pages were designed so that they could be viewed at a screen resolution of 1024 x 768 pixels.
- Page structure was conveyed using header elements.
- A style sheet was used and relative font sizes on all text with the exception of graphical text.
- Text could be increased or decreased in size by using the browser "view" option.
- Images that conveyed important information had alternative text.
- Where an image was used for a decorative purpose the alternative text was left blank.
- No information was exclusively conveyed using colour.

Downloading pdf Documents

To read PDF documents with a screen reader it was possible to link to the Access Adobe

Browser Compatibility

The standard supported browser versions were:

- Windows Internet Explorer v7.0
- Firefox v2.0
- Netscape 6.2+

On the public pages, access for general users was modified to enable the following to be implemented:

Target Group	Arrangements	Aim
Screen reader users	Use of on page headings Heading must be labelled as a heading within the HTML-Code	• to help understanding structure of web page • to call up a list of on-page headings and jump to the section of the page in which one is interested
Screen reader users Screen magnifier users	Descriptive link text List of on-page links	• to identify easily and quickly the destination of the link (not like “click here”- text without any information) • to provide the possibility for screen reader users to browse through web pages by activating links
Screen reader users	Lists within the html code (using the >li > tag)	• to help to know what to expect when hearing a list of items
Screen reader users	Logical linearization	• important information should always be placed towards the top of the page • (because screen reader users have to listen from start to finish, top to bottom, left to right)
Screen reader users	Short, succinct ALT text	• alternative text for images which is read out to screen reader users • short informative text to make surfing time easier and more effective
Screen reader users Screen magnifier users	Short front loaded paragraphs Placing conclusion first	• to put the main point first in a paragraph eases the decision about listening/reading a text or not

Screen reader users Screen magnifier users	Descriptive page title	• to provide information what the web page is about (first text that screen reader users hear)
Screen magnifier users	No text embedded in images	• to prevent text becoming blurry and pixelated esp. when it is of low quality • download time is greater
Screen magnifier users	Clearly separation of different sections of the web page (by using different backgrounds colours, borders etc.)	• to enable easier orientation in the web page
Screen magnifier users	Clear and descriptive headings	• to provide information what the web page is about (first text that screen reader users hear)
Screen magnifier users	Avoid scrolling and flashing text	• to enable user to read text in his/her own time (not being pressed by an animation)
Usability for older users	Communication of the websites design: Needs of scrolling	• to show that a site is not finished
	Avoid technical terms or explain them easily understandable	• to provide useful information • to ease working in the internet
	Consistently and obviously designed links	• to ease recognition
	Colour changing of visited pages	• to provide orientation
	Provide an HTML-version of as much content as possible Do not require users to install software (even Adobe Acrobat) in order to be able to access information	
	Provision of a “make a writing bigger” link with accompanying illustrations/icons	
	Using high contrasts	• to display text
	Provision of explicit instructions by using the imperative forms of verbs	
Motor impaired users (limits or no ability to use a mouse) / Keyboard-only users	Provide the largest possible area for links expand the width and/or height of the clickable area	
	Focus state for links achieved with the following CSS code: a:active, a:focus {background: yellow;}	• to help to orientate by highlighting links/texts when tapping on it
	Provide a visible “skip to content” link	
	Have users opt in for audio	• to avoid conflict with voice recognition software
	No change of tab order (unless it is really necessary)	
	No use of access keys	
Colour blindness		
Hearing-impaired users	Provision of subtitles or written messages if audio content is part of the web page English as second language so avoid complicate language / vocabulary	
Epileptic user	Be careful to avoid seeing flickering between 2 and 55 Hz	

Users with learning difficulties	Website should have consistent appearance and functions	
	Avoid non-lateral expressions /easy understandable expression/text)	
	Avoid using abstractions, eg provide a link to a telephone number rather than to 'Contact us')	
	Break information into small, simple chunks and illustrate them visually wherever possible	
	Always provide an obvious way for users to get back to simpler content if they find themselves on a page above their reading level	
	Increase the spacing between lines of text and between paragraphs	
	Increase the distance between the text and the underline in links	

Reference: http://www.webcredible.co.uk

Appendix C
Website Statements on Confidentiality, Copyright, Privacy, Data Protection and Disclaimer

The following is an outline of the priorities, guides and information given to users regarding confidentiality, copyright, privacy, data protection and a disclaimer statement

Confidentiality
a) Usage Data
It is possible to use the DIETS website without giving personal data/information. During a visit, the web server registers impersonal usage data like IP-addresses.
b) User Data / Personal Data
If users chose to leave personal data on the DIETS website it is treated in accordance with data protection laws. Users can correct, to update or to delete their personal data.
c) Right of Access to Personal Data
In accordance with the Data Protection Act (UK), users are entitled to know about any personal data held by DIETS and to correct false statements.
d) Safety
All necessary arrangements have been taken to protect information about visitors. If visitors sent sensible information via the website, they were protected in online and offline status.
e) Announcements about Changes / Modifications
Changes to procedures regarding privacy protection are published on the website to inform visitors continuously which data would be collected, what it would be used for and if it would be given to a third party. Should it be decided to use personal data in a different form than announced at the time of the data collection, this would be stated explicitly by email or on the website. Visitors could refuse any new procedure for usage of their data. Data is only used in a manner that is consistent with the level of confidentiality with which the data was collected.

Copyright
All contents published on the website (layout, text, pictures, graphs, etc.) are subject to protection under copyright law. Where the copyright in a specific item on the website is owned by a third party, permission is sought to include that item. This refers especially to printing, translation, saving, processing etc of the contents of databases and other electronic systems. Photocopies and downloads of websites can be kept for private, scientific and non-commercial usage.

Citation of documents and other website content is permitted. Partners are encouraged to establish links between the DIETS website and their own. Visitors are asked to contact the DIETS Network Manager if they wish to create a link. Links are not permitted to any website that contained illegal, indecent or offensive content, or if the link could in any way have a negative impact on the reputation of DIETS.

Links
The DIETS website contains links to other websites, advertisements and promotions of third parties. DIETS does not assume any responsibility for the content provided by these other parties or for content of visitor's books, mailing lists and chat rooms.

Disclaimer
A disclaimer statement is published on the website stating that DIETS will assume no liability for correctness, completeness or actuality of the website. Users are informed that they could send corrections, comments and questions to the Network management.