Network of Excellence in Professional Learning

PROLEARN

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Annual Report on PROLEARN Education and Training measures: Summer School, Doctoral Consortium, Mentoring, Junior faculty advising, TEL Master's

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Abstract:

This deliverable reports on the education and training events organised by the PROLEARN Academy in 2006. A review of the two major events: PROLEARN Summer School 2006 and the

first Doctoral Consortium organised within the framework of the EC-TEL conference are provided. Both events incorporate junior faculty counselling and coaching events and mentoring. The deliverable provides an update in the progress made towards the development of a TEL Master's programme.

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1 Introduction

The first key service issue for the PROLEARN Academy is to create an institutional culture, bonding distributed researches across Europe into one virtual entity, and cultivating a spirit of membership. The Academy orchestrates strong, consolidated interactions between PROLEARN core and associate partners, working in the disparate fields of TEL, thus helping to frame European research and academic endeavour into a single management structure. Its principle activities include education and training: summer schools, doctoral consortium, mentoring, junior faculty training, collaborative course production, Master's programme; and scientific leadership: flagship conferences, scientific publications, specialised workshops, complete on-line courses in TEL.

This deliverable reports on the education and training events organised by the PROLEARN Academy in 2006. A review of the two major events: PROLEARN Summer School 2006 and the first Doctoral Consortium organised within the framework of the EC-TEL conference are provided. Both events incorporate junior faculty counselling and coaching events and mentoring. PROLEARN Summer School 2005 which brought together researchers from all the NoE TEL research domains had a significant impact on initiating cross-domain collaboration across the PROLEARN network and provided rich networking opportunities for the future generation of researchers in TEL. PROLEARN Summer School 2006, building on achievement of Summer School 2005, was successful in enhancing research relationships between PROLEARN core and associate partners as well as ties between PROLEARN and the PRO-LC cluster. Another important feature of Summer School 2006 was the tight interweaving of the event with the Academy technology platform to foster working relationships before and after the summer school. Thus, pre-Summer School workshops were organised with Flashmeeting to introduce students to the conceptual modelling tool Conzilla, PROLEARN TV was used throughout the summer school to rebroadcast live and record the lectures, and post-Summer school Flashmeetings were organised to follow up on workshops.

The first PROLEARN Doctoral Consortium which took place on October 2nd, in Heraklion, Crete, was a logical follow up to the PROLEARN Summer School. While the Summer School is designed for early stage PhD students who are developing their research questions and research methodologies, the PROLEARN Doctoral Consortium provides an opportunity for later stage PhD students to present their research before a panel of international professors and peers for the purpose of fine tuning their thesis and eventually incorporating other relevant research. The Doctoral Consortium took place during the first EC-TEL conference (See deliverable 9.4) providing, like the summer school, rich networking and mentoring opportunities for TEL researchers. These two events will be repeated in 2007. PROLEARN Summer School 2007 will take place from May 27th through June 2nd in Fréjus, France, and PROLEARN Doctoral Consortium will take place again at the EC-TEL conference September 17th and 18th, in Greece. The Academy is elaborating a sustainability plan to perpetuate these events in 2008 and after.

This deliverable also reports on the progress to date that has been made in developing a joint TELP Master's degree. It provides descriptive information about the TEL Masters degrees that are currently offered at the OUNL and the OUUK. A group of PROLEARN partners submitted a proposal for funding a Marie Curie RTN. This document describes the nature of courses that could be provided at PROLEARN institutions to make up a complete multidisciplinary programme. The proposal can be found in Annex 2. This deliverable also provides an updated set of course descriptions, from deliverable D9.1.2 to be included in the PROLEARN TEL

Master's. These courses have been developed more especially during annual PROLEARN Summer Schools.

2 PROLEARN Summer School 2006

Internet:
http://www.prolearn-academy.org/Academy%20Events/SS06/

2.1 Introduction, Objectives, Venue

The second PROLEARN Summer School ran from June 5-9, 2006 in Bled, Slovenia at the Hotel Astoria.

The aim of the second PROLEARN summer school was to build qualitatively on the successes of Summer School 2005 the objective of which was to contribute to the creation of an institutional culture, integrating distributed researchers across Europe into one community. Another important goal of Summer School 2006 was to actively involve institutions beyond PROLEARN core partners in view of establishing the most important TEL Summer School as a cornerstone for sustaining the PROLEARN initiative.

The summer school offered a unique opportunity to foster cross-domain training and collaboration among researchers in Europe and beyond, working in the disparate fields of expertise which promote the advancement of TEL at the workplace. The range of topics for lectures included: Workplace Learning; Collaborative Learning; Personalized Learning; Authoring; Learning Repositories and Infrastructures for Learning; Semantic Web, Metadata and Learning; Usability; Privacy and Security in Learning. The programme included lectures from leading professors, industrialists, and experts in the field, trans-European tutoring, mentoring, and joint research opportunities. Additionally the school offered practical sessions in research methodology and the basics of Technology Enhanced Learning. Advanced PhD students were identified to present their research at the EC-TEL 2006 Doctoral Consortium in October in Greece (extended deadline: June 14, 2006).

2.2 Organisation, Programme Committee

The summer school was hosted by Jozef Stefan Institute, a PROLEARN Core Partner, and took place at the Astoria Hotel in Bled, Slovenia. The setting provided the perfect venue for implementing a rich schedule of activities. All participants appreciated having their rooms and the restaurant in the same facility as the lectures. Bled offered enough tourist activities to balance study with attractive leisure opportunities.

Summer School 2006 profited from a dynamic team of 12 who actively participated in organising all the summer school events and support from November 2005 through June 2006. The programme committee included 26 participants, among them 7 proactive PhD students from Summer School 2005, thus providing opportunities for young researchers to participate in the organisation of such events.

2.2.1 Organisation committee:

- Katherine Maillet (INT), Katherine.Maillet@int-evry.fr, Co-Chair
- Ralf Klamma (RWTH Aachen), klamma@informatik.rwth-aachen.de, Co-Chair
- Margit Hofer (CSI), hofer@zsi.at, Summer School Promotion

- Mohamed Amine Chatti (RWTH Aachen), chatti@informatik.rwth-aachen.de, Summer School Website
- Borka Jerman-Blažič (IJS), borka@e5.ijs.si, Local Organisation Co-Chair
- Tomaž Klobučar (IJS), tomaz@e5.ijs.si, Local Organisation Co-Chair
- Ambjörn Naeve (KTH), amb@nada.kth.se, Collaborative Learning Support
- Katharina Pechtold (L3S), KP@tt.uni-hannover.de
- Peter Scott (OU), peter.scott@open.ac.uk, Collaborative Learning Support
- Martin Wolpers (L3S), wolpers@l3s.de, Coordination PRO-LC
- Tanja Arh (IJS), tanja@e5.ijs.si, Local Organisation
- Matic Pipan (IJS), matic@e5.ijs.si, Local Organisation

2.2.2 Programme commitee:

- Olivier Bohl (U. Kassel, Germany)
- Daniel Burgos(OUNL, The Nethelands)
- Mohamed Amine Chatti (RWTH Aachen University, Germany)
- Jacques Dang (HEC, France)
- Peter Dolog (L3S, Germany)
- Erik Duval (KUL, Belgium)
- Markus Eisenhauer (FIT, Germany)
- Nils Faltin (IMC, Germany)
- Vitali Fedulov (KTH, Sweden)
- Margit Hofer (CSI, Austria)
- Milos Kravcik (FIT, Germany)
- Matthias Jarke (FIT, Germany)
- Anna-Kaarina Kairamo (HUT, Finland)
- Alexander Karapidis (IAO, Germany)
- Ralf Klamma (RWTH Aachen University, Germany)
- Tomaz Klobucar (IJS, Slovenia)
- Nikos Korfiatis (KTH, Sweden)
- Matthias Lux (KnowCenter Graz, Austria)
- Borka Jerman-Blazic (IJS, Slovenia)
- Katherine Maillet (INT, France)
- Konstantin Makropoulos (DEM, Greece)
- Ambjörn Naeve (KTH, Sweden)
- Wolfgang Nejdl (L3S, Germany)
- Peter Scott (OU, United Kingdom)
- Marcus Specht (OUNL, The Netherlands)
- Martin Wolpers (KUL, Belgium)

2.2.3 Applications and scholarships

The summer school was intended for PhD students investigating issues related to Technology Enhanced Learning and making progress on their dissertation research. PhD students were invited to submit applications to summerschool@i5.informatik.rwth-aachen.de. The application should had included a Curriculum Vitae and an abstract (not to exceed 5 pages including references and any figures, tables, etc.) describing the student's dissertation. The deadline for submissions was April 30th, 2006.

The PROLEARN consortium offered 42 scholarships to summer school students. Scholarships were awarded on the basis of the applicant's research statements and CV.

2.2.4 Summer School Course Topics

Workplace Learning:

Knowledge Management and Learning, Business Processes and Learning, Cost and Economy Models, Leveraging Expertise, Vocational Education, Informal Learning, Situated Learning, Social Constructivism, Social Software, Organizational Learning, Corporate Training, Institutional Change Strategies, Knowledge Sharing, Learning and Competence Development on-the-job, Workplace-related eLearning.

Collaborative Learning:

Learning Communities, Distributed Teams, Instructional Methods for Collaborative Learning, Problem Solving Support, Collaborative Knowledge Building and Sharing, Collaborative Games, Online Experiments, Social Software for Professional Learning.

Personalized Learning:

Reasoning Techniques, Adaptation Patterns and Techniques, Data Mining, Information Retrieval, Learner Modelling, Learner Assessment and Testing, Remote Monitoring of Users, Adaptive Hypermedia and Adaptive Instructions, Competencies in Workplace Learning.

Authoring:

Authoring and Re-Use of Learning Objects, Authoring and Learning Design, Authoring Tools, Re-Authoring and Re-Purposing, Authoring of Multimedia, Learning Content, Authoring for Ubiquitous Learning, Community and Organizational Learning Content Creation, Authoring for Cross-Media Learning.

Learning Repositories and Infrastructures for Learning:

Web services, Multi-Agent Systems, Peer-to-Peer Infrastructures, Runtime Engines for Learning Design and Learning Objects, Mobile and Ubiquitous Learning, Multimedia and Learning, Virtual Reality and Learning, Deployment Strategies, Design of eLearning Environments, Professional Learning in Ubiquitous Learning Spaces.

Semantic Web, Metadata and Learning:

Learning Objects, Learning Activities, Learning Design, Narrative and Navigation Models, Semantic Clustering, Metadata for Search and Information Retrieval, Crosswalking Professional Learning Metadata.

Usability:

Usability Evaluation Methods: Empirical, Analytical and Model-based Human Experiences, Interplays between Usability Evaluation and System Redesign, Usability Knowledge in e-Learning: Usability of Learning Objects and eLearning Systems.

Privacy and Security in eLearning:

Personal Data Protection: Privacy-Enhanced Identity Management, Privacy-Enhanced Technologies, Privacy and Personalization, Security Mechanisms in eLearning, Learning Resource Protection, Digital Rights Management.

2.3 Participants

The Summer School attracted 71 participants representing:

- 30 nationalities, predominately from across Europe, but including participants from countries representing four other continents: China, Venezuela, the Ivory Coast, and the United States:

Algeria	1
Austria	5
Belgium	3
Brazil	1
Bulgaria	3
China	1
Estonia	2
Finland	2
Germany	13
Greece	3
Hong Kong	1
Iceland	1
Ireland	1
Italy	3
Ivory Coast	1
Lithuania	1
Malaysia	1
Palestine	1
Poland	1
Russia	3
Slovakia	1
Slovenia	6
Spain	3
Sweden	3
Switzerland	1
The Netherlands	2
UK	3
USA	1
Venezuela	1
Yemen	1

- 48 different institutions situated in 21 different countries;

- 50 PhD students for 20 professors and/or organisers, and one PROLEARN project evaluator

- 50% of the participants represented institutions outside the PROLEARN Core Partner group,

- 40% of all participants were female.

2.4 Pre-Summer School Distributed Meetings and Collaboration Tools

A series of video-conferences using the Flashmeeting tool provided by the OU were organised one month before the start of the Summer School in order to better foster networking among participants. The objectives of the conferences were to allow students to have an opportunity so

hear/see each other before the event and to give them instructions on how to use the document sharing tool, Confolio, and the Conceptual Modelling Tool, Conzilla, both provided by KTH. Students were organised into "clusters" for this purpose according to the information provided in their CVs and research statements. While the first conferences were organised by the organisation committee, some clusters quickly organised their own sessions for developing deeper joint research discussions. About 60% of the PhD students participated one or more of these events. Those who could not participate due to either scheduling constraints or technical difficulties often watched the recordings which were made available at the Summer School website (http://www.prolearn-academy.org/Academy%20Events/SS06/FlashMeetings/). Ten pre-summer school events were organised. The summer school evaluations indicate that at least 50% of the PhD students explicitly intend to continue to use the Flashmeeting to facilitate future collaboration among Summer School 2006 participants.

The Confolio tool was used once again during Summer School 2006 as a repository for the participants' research statements and CVs, support materials for the lectures, and shared workspace summer school activities.

More complete information about how different tools were used to support the summer school is provided in D9.7

2.5 Summer School Programme

http://www.prolearn-academy.org/Events/Past%20Events/SS06/programme

The pre-conference event (see website), a highly informative, all day tour of Slovenia, designed for getting participants to know each other informally succeeded in bringing together about 80% of the participants, among them nearly 100% of the PhD students. About 60% of the participants went on the half-day post summer school trip to Ljubljana.

The Summer School days started with a thematic breakfast at 8:00, followed by two plenary sessions of lectures from 9:00 to 12:30, and two sessions of parallel workshops were planned in the afternoon from 14:00 to 17:30 with lunch and coffee breaks. For socialising with one another sport activities were offered from 17:30 to 19:00. During this time the Academy held four business meetings: The VCC and Professional Training Facts, The Academy Portal and Technology Infrastructure, Sustainability, and Education and Training Scientific Leadership 2006.

There were two special evening social events: rafting on the Sava River and an evening of folklore and dancing at the Bled castle. Many PhD students cited the rafting trip as an important "team-building" activity of the summer school.

2.5.1 Thematic Breakfasts, Junior Faculty Advising, Mentoring, Gender Mainstreaming

The idea was to offer an informal atmosphere for wider networking and the development of mentoring relationships among the participants on the basis of a certain number of selected topics:

- junior/senior faculty advising;
- women in ICT;
- trans-European mentoring;
- research "clustering".

Questionnaires designed to generate discussion were prepared for each topic and put on the tables in the restaurant

2.5.2 Lectures

Morning lectures were offered as plenary sessions to promote a cross-domain understanding of the TEL field. The lectures were given by professors, members of industry and other experts. The topics covered were: Workplace Learning; Collaborative Learning; Personalized Learning; Authoring; Learning Repositories and Infrastructures for Learning; Semantic Web, Metadata and Learning; Usability; Privacy and Security in eLearning. Each speaker gave a 45-minute lecture on the state of the art in on-going research in his/her field. On Friday morning, PhD students were given the opportunity to sum-up what they learned during the summer school from their research cluster perspective.

These lectures were rebroadcast live over PROLEARN TV to about 10 remote. The recordings of the lectures can be found at http://stadium.open.ac.uk/prolearn/.

The slides and other supporting materials for the lectures were made available in the Confolio shared web space:

http://knowgate.nada.kth.se:8080/portfolio/main?cmd=open&manifest=Prolearn&uri=urn%3Ax-knowgate.nada.kth.se%3AProlearn%3A1034

The materials from the summer school will be listed on the EducaNext learning resource brokerage server: http://www.educanext.org

Lecture Topics:
- "Automated Metadata", Erik Duval, KUL
- "Usability Knowledge for eLearning: learning objects and eLearning Systems", Ebba Thora Hvannberg, University of Iceland, Effie Law, ETH Zürich,
- "Communicative Modeling as a Method to Facilitate Human Collaboration", Ambjörn Naeve, Kungl. Tekniska Högskolan
- "Collaborative Learning", Peter Scott, Open University UK
- "Security in eLearning", Edgar Weippl, Vienna Technical University
- "Privacy in eLearing", Borka Jerman-Blažič, Tomaž Klobučar, Jozef Stefan Institute
- "Public Service - supporting learning in a digital environment", Krister Widell, Swedish Educational Broadcasting Company
- "Learning Networks for Lifelong Competence Development", Rob Koper, OUNL
- "Web 2.0 and Social Software for Professional Learning", Klaus Tochtermann, I KNOW Center
- "Community and Organizational Learning Content Creation", Ralf Klamma, RWTH
- "E-Learning Content Production in Large Companies, Overview and Trends", Volker Zimmermann, IMC
- "Future Perspectives for Research in Technology Enhanced Learning", Martin Wolpers, KUL

2.5.3 Workshops

Ninety minute parallel workshops provided PhD students the opportunity to meet with professors, experts, or in self-organised groups according to their special research focus. The workshops were led by speakers from the morning sessions, advanced PhD students, and PhD students. The topics were varied: tutorials designed to help PhD students focus their research

questions or concept modelling, learning cafés, applied research exercises and discussion, opportunities to use new technologies, discussions on joint research, etc.

Workshop themes:
- "How do you know if your research is successful? And why should it matter? For you?", Erik Duval, KUL
- "Hexagon and Flashmeeting", Peter Scott, Open University UK
- "Usability", Effie Law, ETH Zürich; Ebba Thora Hvannberg, University of Iceland
- "Concept Modelling Learning Café", Ambjörn Naeve, KTH; Anna-Kaarina Kairamo, HUT
- "Privacy and Security in eLearning", Edgar Weippl, TU Vienna
- "Learning Café, Trends for Future Research in Technology Enhanced Learning", Vana Kamtsiou, NCSR; Martin Wolpers and Katharina Pechtold, L3S
- "Authoring and Engineering Adaptive eLearning Systems", Alexandra Cristea, TUE
- "Community and Organised Learning Content Creation", Ralf Klamma, RWTH
- "How to realize adaptive Units of Learning in IMS Learning Design", Daniel Burgos, OUNL
- "Topics raised during the week Learning Café", Anna-Kaarina Kairamo, HUT
- "eLearning Content Production", Volker Zimmermann, IM-C C
- "Social Software for Professional Learning", Klaus Tochtermann, I KNOW Center

Additionally, the PhD students suggested topics for self-organised working groups.

Summaries of each workshop, reported by the PhD students can be found at: http://www.prolearn-academy.org/Academy%20Events/SS06/WORKSHOP%20Summaries

Since the end of the Summer School, at least 3 Flashmeetings were organised to follow up on the "Conceptual Modelling" and the Conzilla tool workshop. Other follow-up workshops are planned.

2.5.4 Slovene National Strategy on eLearning

On Wednesday, June 6, 2006, the Ministry of Higher Education, Science and Technology organized a round table within the framework of PROLEARN Summer School. The main goal of the round table was to present and discuss of a draft of the Slovene national strategy on e-learning. In total, 26 participants attended the event, representing e-learning activities' users, service providers and other stakeholders, e.g. University of Ljubljana, University of Maribor, Jozef Stefan Institute, Slovenian Institute for Adult Education, National Institute for Vocational Education and Training, National Education Institute of the Republic of Slovenia, the biggest private e-learning provider Doba, Ministry of Higher Education, Science and Technology, etc. The event was chaired by Jože Zrimšek, Acting Director General of the Directorate for the Information Society.

2.5.5 Sport Activities

Students could choose between various different sport and leisure activities offered by resort town of Bled: cycling, rowing, hiking, basketball, soccer, etc. These activities provided students the opportunity to group themselves informally, contributing to establish contacts among the participants which will last longer than the summer school event.

2.6 Summer School Evaluation

The PhD students were asked to fill in evaluation questionnaires on the last day of the summer school. The data we have collected will be used when considering plans for PROLEARN Summer School 2007 and sustainability measures.

What was your role at the Summer School?

PhD student	Organiser	Tutor
40	3	1

How did you hear about the PROLEARN Summer School?

From my supervisor, boss, professor, department head	16	36%
Advertisements: internet, mailing-lists (DB, Semantic Web), chairs	9	20%
Colleague, partner, co-workers	8	18%
Former Summer School students	6	13%
PROLEARN	5	11%
Other projects	1	2%
Total	45	100%

What were the most beneficial aspects of the summer school for you?
The results from this question would tend to indicate a qualitative enhancement of Summer School 2006 as compared to 2005. While "Networking" was the most often cited benefit of Summer School 2005, in 2006 75% of the participants cited "gaining" knowledge as on of the most important benefits.

Networking: with professors, experts, students in TEL	82%
Gaining knowledge: broad knowledge of the TEL field, new knowledge or international perspective	75%
Discussion and exchange	23%
Feedback on research, ideas for research, research methodology	20%
Recreation, tourism, seeing new places	20%

Responses to questions 4 – 6 concerning technology are provided in Deliverable 9.7.

Do you plan to participate in PROLEARN post Summer School events like post conference workshop follow-up meetings?

Yes	Hope so	Not sure	No	Total
29	6	8	1	44

In what way do you plan to formalise networking relationships that you have developed at the summer school, for example joint publications, joint proposals, mentoring relationship, joint

course, submission to the EC-TEL Doctoral Consortium, etc.? If possible, could you provide a reference?

Type of networking	Number of responses	Responses in %
Joint publications	21	48
Mentoring, tutoring, professors	10	23
Exchanging papers, ideas, research	9	20
Joint proposals	7	16
Not sure, or no	7	16
Communication tools	4	9

What are your suggestions and recommendations for PROLEARN Summer School 2007?

Type of suggestion	Frequency
More time for clusters	10
Well done, great summer school	8
More student time	8
More workshops	6
Improve the clusters	5
More social events	3
More time for introductions	2
More demos	2
More methodology	1

What are your suggestions and recommendations for the location of future PROLEARN Summer Schools?

Frequently cited destinations	Frequency
Slovenia	4
Greece	4
Italy	3
Europe	3
Stockholm	2
Cyprus	2
France	2
Scandinavia	2
Ireland	2
Spain	2
Southern	2
Mediterranean	2

Are you planning to attend the next Summer School in 2007?

Yes	Hopefully	Maybe, not sure	PhD will be finished	No	Total
20	11	7	4	2	44
45%	25%	16%	9%	5%	100%

Did you have a scholarship to attend Summer School 2006?

Yes	No
32	2

If you had not been able to get a scholarship to the summer school, would your university have financed your participation?

Yes	No	Don't know
10	6	2

2.7 Social Network Analysis of participants at the PROLEARN Summer School 2006

We have conducted a survey on patterns of networked interaction and communications activities (NICA) as a result of the PROLEARN summer school 2006. We have circulated a questionnaire to the PhD students who have participated in the summer school. PhD students were asked the following 10 questions:

1. Name the Person with whom you have had NICA since June 2006 and Estimate the Frequency according to the scale (0: never, 1: less than or once a year, 2: more than once a year, 3: more than once every 6 months; 4: more than once a month, 5: more than once a week, 6: almost every day, 7: several times a day).

2. Have you already established any NICA with this person before the summer school, June 2006? If YES, please indicate whether there has been any change (scale of change of collaborative relation: 0: No change at al, 1: Stronger than before June 2006, 2: Weaker than before June 2006).

3. How satisfied are you with the NICA with this person? (scale of satisfaction level: 0: Not at all, 1: Very Low, 2: Low, 3: Medium, 4. High, 5. Very High)

4. Please indicate the nature of your NICA with this person: joint paper, joint research, joint project or proposal, collaborative professional relationship, academic exchange, mentoring relationship, etc.

5. Please provide us with the list of your publications.

6. Have you been a member of conference/workshop programme committees? If yes, please provide us more information.

7. Have you made project proposals (for funding)? If yes, please provide us more information.

8. Have you won any prizes? If yes, please provide us more information.

9. Have you already finished your PhD?

10. Could you list the communications tools that you use to maintain contacts with the other prolearners and the frequency with which you use these tools?

We received 32 responses from PhD students. The information gathered from the questionnaires has been analysed and the results of the analysis are summarised in the diagrams below.

Figure 1 shows the number of relationships of each PhD student before and after summer school 2006. The students who have also attended last year's summer school are indicated with a star. These are Oliver Bohl, Matthias Lux, Tanja Arh, and Matic Pipan. All of them were active participants in the summer school 2005 and have provided several suggestions for improvement and were therefore asked to be members of the programme committee or the organizing committee. Almost every PhD student has established new relationships after the summer school. To note is that the 4 PhD students mentioned above have established less new relationships as compared to other participants. The reason is that Tanja Arh and Matic Pipan who were members of the organizing committee had contacts prior to the summer school with PhD students who have been asking questions related to the organization such as travel possibilities, accommodation etc. Oliver Bohl and Matthias Lux who were members of the

programme committee have invited several students to join the summer school which explains that many participants were known to them before the summer school.

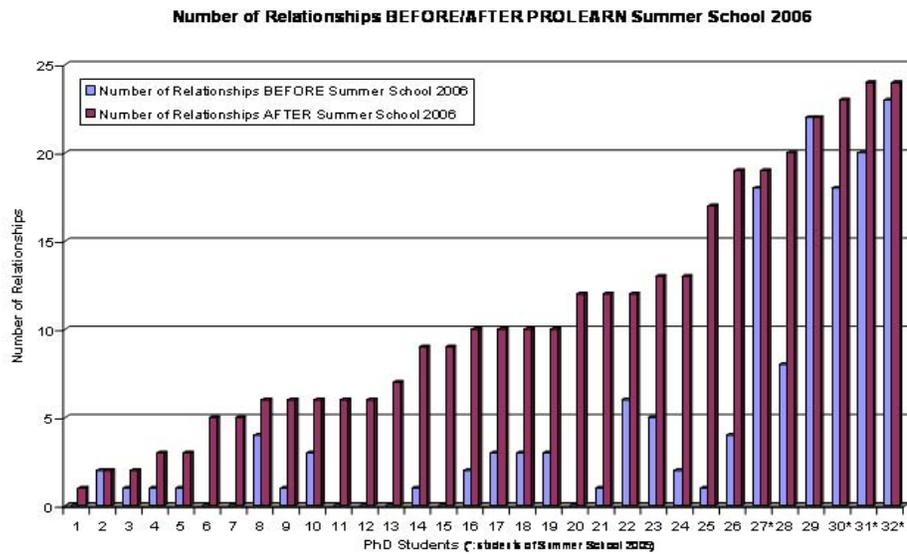**Number of Relationships BEFORE/AFTER PROLEARN Summer School 2006**

Figure 1: Summer School 2006 relationships

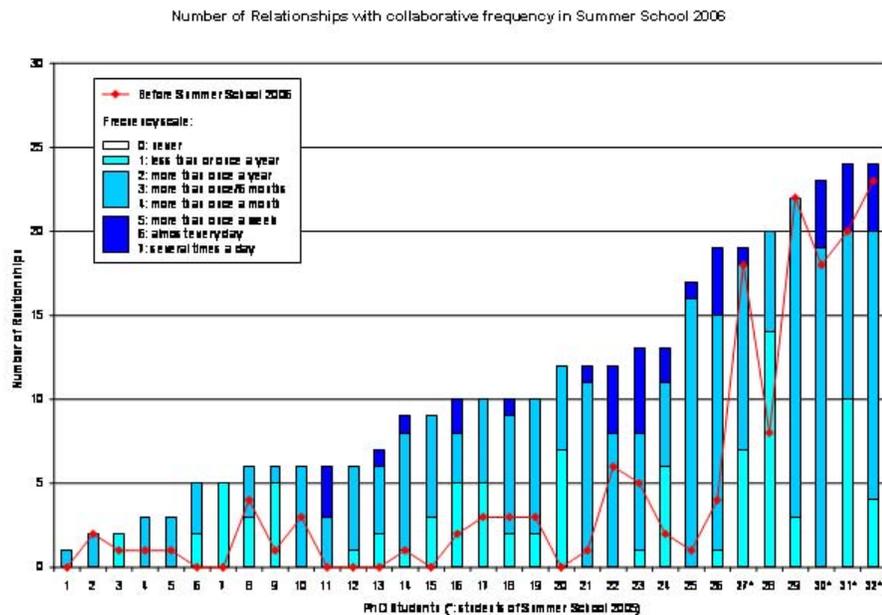Number of Relationships with collaborative frequency in Summer School 2006

Figure 2: Summer School 2006 relationships with collaborative frequency

Figure 2 depicts the number of relationships with collaborative frequency for each participant in the summer school. Most of the PhD students have had relationships with an average frequency (frequency between 2 and 4). Only 6 students have kept 4-5 close contacts (frequency between 5 and 7) with other students. Some of these close relationships have led to new co-authorship opportunities between e.g. as illustrated in figure 3. The PhD student-cluster Oliver Bohl, Patrick Jonscher, Pavlina Chikova, and Katrina Leyking has been initiated by Oliver who has invited the other students to join the summer school.
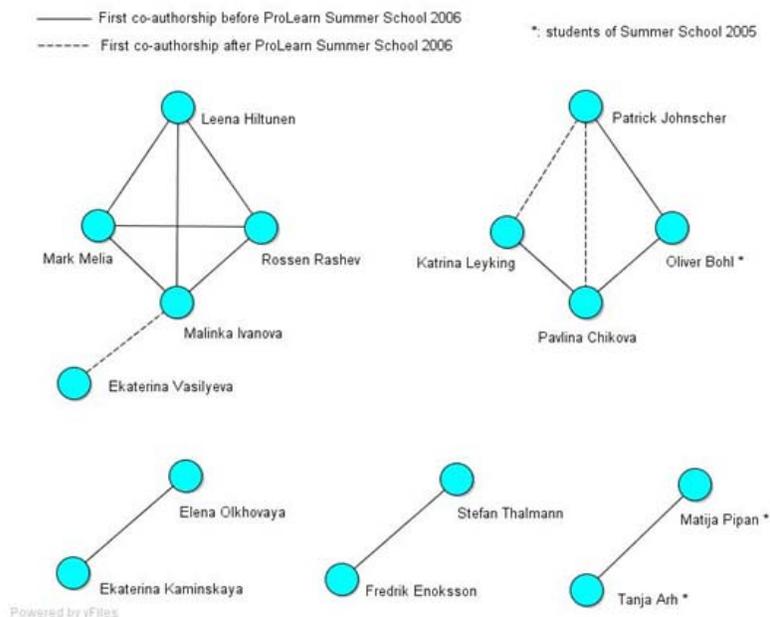
Figure 3: Co-authorship activities before and after the summer school

3 First PROLEARN Doctoral Consortium

The first PROLEARN Doctoral Consortium (http://www.ectel06.org/doctoral_consortium.html) which took place on October 2nd, in Heraklion, Crete, was a logical follow up to the PROLEARN Summer School. While the Summer School is designed for early stage PhD students who are developing their research questions and research methodologies, the PROLEARN Doctoral Consortium provides an opportunity for later stage PhD students to present their research before a panel of international professors and peers for the purpose of fine tuning their thesis and eventually incorporating other relevant research. The Doctoral Consortium took place during the first EC-TEL conference (See deliverable 9.4) providing, like the summer school, rich networking and mentoring opportunities for TEL researchers.

3.1 Applications procedure

PhD students were asked to submit their papers describing doctoral work in PDF or PostScript format before June 7, 2006. The paper length should had not exceed 6 pages (single-line space, Times New Roman (or similar) font type, 12 pt font size, reasonable margins. As for the ECTEL conference, all topics from the field of professional learning were of interest for the PhD students who wished to present their research at the doctoral consortium. These topics included (but were not limited to):

Collaborative Learning:
Learning Communities, Distributed Teams, Instructional Methods for Collaborative Learning, Problem Solving Support, Collaborative Knowledge, Building and Sharing, Collaborative Games, Online Experiments

Personalized Learning:
Reasoning Techniques, Adaptation Patterns and Techniques, Data Mining, Information Retrieval, Learner Modelling, Learner Assessment and Testing, Remote Monitoring of Users, Adaptive Hypermedia and Adaptive Instructions, Competencies in Workplace Learning

Authoring:
Authoring and Re-Use of Learning Objects, Authoring and Learning Design, Authoring Tools, Re-Authoring and Re-Purposing, Authoring of Multimedia Learning Content, Authoring for Ubiquitous Learning

Semantic Web, Metadata and Learning:
Learning Objects, Learning Activities, Learning Design, Narrative and Navigation Models, Semantic Clustering, Metadata for Search and Information Retrieval

Workplace Learning:
Knowledge Management and Learning, Business Processes and Learning, Cost and Economy Models, Leveraging Expertise, Vocational Education, Informal Learning, Situated Learning, Social Constructivism, Social Software, Organizational Learning, Corporate Training, Institutional Change Strategies, Knowledge Sharing, Learning and Competence Development On-the-job, Workplace-related eLearning

Learning Repositories and Infrastructures for Learning:
Web services, Multi-Agent Systems, Peer-to-Peer Infrastructures, Runtime Engines for Learning Design and Learning Objects, Mobile and Ubiquitous Learning, Multimedia and Learning, Virtual Reality and
Learning, Deployment Strategies, Design of e-learning environments

In contrast to regular conference papers, submissions were supposed to address specifically doctoral work. Therefore, the following elements were recommended:

- A clear formulation of the research question.
- An identification of the significant problems in the field of research.
- An outline of the current knowledge of the problem domain, as well as the state of existing solutions.
- A presentation of any preliminary ideas, the proposed approach and the results achieved so far.
- A sketch of the applied research methodology
- A description of the Ph.D. project's contribution to the problem solution.
- A discussion of how the suggested solution is different, new, or better as compared to existing approaches to the problem.

The intention of this doctoral consortium was to support and inspire Ph.D. students during their ongoing research efforts. Therefore, it was necessary that authors would have neither achieved their Ph.D. degree nor officially submitted their thesis before the doctoral consortium (October 2, 2006). To enforce this rule we required authors to disclose their expected graduation date and their advisor's name when submitting.

Papers were reviewed by at least two members of the doctoral consortium committee. Accepted papers were published in the workshop proceedings and made available electronically to the participants before the symposium to facilitate preparation of discussions and questions.

Presentations were kept short (10-15 minutes). A discussant, a member of the doctoral consortium committee, was appointed to each paper. Discussant comments were followed by a plenary discussion of the paper. At the end of the consortium there was a general discussion, including a brainstorming session about current and future research topics in the area.

Only electronic submissions were accepted. Papers were e-mailed as an attachment in PDF or Postscript format to dc-ectel06@i5.informatik.rwth-aachen.de. A supporting letter also had to be sent by the PhD supervisor by e-mail to dc-ectel06@i5.informatik.rwth-aachen.de or by Fax: +49 241 8021513 to Ralf Klamma

3.2 Chairs and Committee Members

3.2.1 Consortium Chairs
- Katherine Maillet, Institut National des Télécommunications, France
- Ralf Klamma, RWTH Aachen University, Germany

3.2.2 Program Committee Members
- Heidrun Allert, Austria
- Kalina Bontcheva, UK
- Paul de Bra, The Netherlands
- Paul Brna, UK
- Peter Brusilovsky, USA
- Fabrizio Cardinali, Italy
- Stefano Ceri, Italy
- Pierre Dillenbourg, Switzerland
- Peter Dolog, Germany
- Erik Duval, Belgium
- Dieter Euler, Switzerland
- Monique Grandbastien, France
- Jörg M. Haake, Germany
- Kai Hakkarainen, Finland
- Friedrich Hesse, Germany
- Nicola Henze, Germany
- Wayne Hodgins, USA
- Geert-Jan Houben, Belgium
- Matthias Jarke, Germany
- Ralf Klamma, Germany
- Rob Koper, The Netherlands
- Stefanie Lindstaedt, Austria
- Peter Loos, Germany
- Erica Melis, Germany
- Riichiro Mizoguchi, Japan
- Enrico Motta, UK
- Gustaf Neumann, Austria
- Roy Pea, USA
- Juan Quemada, Spain
- Jeremy Roschelle, USA
- Vittorio Scarano, Italy
- Peter Scott, UK

- Marcus Specht, The Netherlands
- Ralf Steinmetz, Germany
- Julita Vassileva, Canada
- Vincent Wade, Ireland
- Gerhard Weber, Germany

3.3 Doctoral Consortium Programme

While we were offering this consortium the first time, a large number of applications were received (19) with an acceptance rate of 58%. The overall quality was very good and that made it more difficult for the program committee to make decisions. The papers presented at the Doctoral Consortium can be found in its proceedings at:

http://www.prolearn-academy.org/Events/Past%20Events/ectel/cd-proceedings

October 2, 2006 Doctoral Consortium at the EC-TEL 2006 Conference in Heraklion

9:00-10:00 **Opening session:** Welcome words from Katherine Maillet and Ralf Klamma

- Olga Fragou, University of Athens (NKUA): "Aspects of Personalization in Language Learning Process and Greek Literacy in a New Technology Based Environment"

10:00-10:30 **Coffee break**

10:30-12:30 **Creation and Sharing of Technology Enhanced Learning Content**

- Marek Meyer, SAP Research: "Modularization of Existing Learning Resources for Repurposing"
- Mark Melia, Dublin City University: "Semantically-enabled Model Driven Course Composition"
- Carmen L. Padrón Nápoles. Universidad Carlos III de Madrid: "MD2 Method: The Didactic Materials Development from a Model Perspective"
- Christopher Brooks & Paul Libbrecht: University of Saskatchewan: "Publication of Distributed Linked Content"

12:30-14:00 **Lunch**

14:00-15:30 **Technology Enhanced Learning Practice**

- Marc Spaniol, RWTH Aachen: "Community Hypermedia in Collaborative and Self-reflective E-learning Applications"
- Marco Kalz, Open University of the Netherlands, Educational Technology Expertise Center (OTEC): "Positioning of Learners in Learning Networks with Content Analysis, Metadata and Ontologies"
- Olga C. Santos, National University for Distance Education (UNED): "Technology Enhanced Life Long eLearning for All"

15:30-16:00 **Coffee Break**

16:00-17:00 **Retrieve and Measure Technology Enhanced Learning**

- Peter Scheir, Know-Center Graz: "Associative retrieval of resources for work-integrated learning: Integrating domain knowledge with content-based similarities"

- Xavier Ochoa, Escuela Superior Politécnica del Litoral: "Metrics for Learning Object Metadata"

17:00-18:30 **Open PhD Forum**

4 TEL Master's

As a result of continued collaboration on the education and training activities, the consortium had a goal to build a design plan for a modular TEL Master's programme offered within the framework of continuing education and featuring. Draft curriculum description for European Master of Technology Enhanced Learning was presented first in the D9.1.2 deliverable. In this section we provide an update in the recent progress made towards the development of a TEL Master's programme. The proposed programme consists of a pool of courses the students can sign up and get credit for at another PROLEARN institution which guarantee for the quality of these courses.

In order to obtain additional funding to create the Master's programme PROLEARN partners submitted two proposals (TEL@Work and eLVis). The Marie Curie Research Training Network proposal TEL@Work was prepared with an aim to establish and implement an interdisciplinary training network in the field of technology enhanced learning for the workplace, integrating the widely fragmented domains of technology, educational and socio-economic sciences, for the purpose of designing a visionary set of training measures for the workplace of the future and contribute to the restructuring of the European Research Area. Unfortunately, none of the proposals was accepted for funding.

4.1 Existing Master Programmes

TEL Master programme is based upon the courses and modules from PROLEARN partners' existing master programmes in learning, new media, information systems, etc. Several such programmes were already described in D9.1.2, although they were not TEL specific, but included TEL courses as part of the programme. Here we provide information about additional two master programmes in technology enhanced learning from OU NL and OU UL. Short course descriptions of both programmes are given in Section 4.2.

4.1.1 OU NL Master's programme Active Learning

Based on its experience in the development of course materials, the Educational Technology Expertise Centre of OU NL has developed a Master programme Active Learning. The master programme looks at education from the point of view of the educational design. Students learn to analyze educational problems and to develop and implement solutions, taking into account the conditions within the organization and the theoretical insights. Students get acquainted with the most recent developments in the field of educational technology and learn how and when they can be used in their educational design. During the programme they work on at least two large educational projects, if possible related to their own working practice. Apart from that they develop their competencies in the field of counselling and project management.

The Master's course in Active Learning consists of ten courses of 4.3 ECTS (European Credit Transfer System) and a thesis of 17 ECTS making a total of 60. The focus on the Master's course is on the design of active learning, hence the name. The course is completed by a thesis. This is the list of courses of the Master Active Learning:

Shared part:
- Professional and Problem Areas

- Theoretical Framework and Backgrounds of Educational Design
- Approaches, Strategies and Methods for Educational Design
- E-learning: what, why and how?
- Project Active Learning
- Research Methods for Educational Design
- Current Trends and Issues

Optional part:

- Instructional Design
- Learning and Competency Development
- Quality Assurance in Education
- Open Course 1
- Open Course 2

Graduate part:

- Designing a Research Plan; Thesis Preparation
- Master Thesis

4.1.2 OU UK Master's programme in online professional learning

The OUUK Master's programme in online professional learning for education technologists, the MA-ODE, is a global programme that is taught in English and has been running for nearly a decade, making it the world's first entirely online Master's programme. It has been refreshed repeatedly since it was first run, to reflect advances in research emerging from trans-European projects and networks such as PROLEARN and Kaleidoscope. It now comprises the following courses:

- H804 - Implementing Online, Open and Distance Learning
- H806 - Learning in the Connected Economy
- H807 - Innovations in eLearning
- H808 - The eLearning Professional
- H809 - Practice-based research in educational technology

The next phases of the programme could well include cooperation across Europe to enriching the partnership's existing courses by co-developing European case studies, using ideas, insights and research findings from EU projects such as EU4ALL, with professional learning additions from PROLEARN. A group of case studies that is needed across Europe is on the topic of disability, including how disability needs to be taken account on in TEPL. Probably sponsorship or public subsidy would be required by partner institutions if the enrichment of the courses met societal needs but did not increase enrolments on courses.

4.2 Updated list of courses for the curriculum

Survey of existing joint degree programmes, suggested programme (structure, components, etc.) and preliminary list of courses were described in the deliverable D9.1.2. The deliverable envisaged a 2-year modular programme (120 ECTS credits), consisting of 18 months (90 ECTS credits) taught scientific courses and seminar work, and a 6 months master thesis (30 ECTS credits). In this section we give an updated course list from D9.1.2. The courses are grouped in the following areas:

- Introduction to technology-enhanced learning

- Educational design
- Educational technologies
- Processes and models in professional learning
- Learning communities and social networks
- Usability and quality assurance
- TEL and knowledge management
- Digital content production
- Computer science and information system basics for TEL
- Other

4.2.1 Introduction to TEL

Course title	Description	ECTS	Institution
E-learning: what, why and how?	Students will get familiar with tools and learning environments and will look at their (potential) meaning for learning processes.	4.3	OU NL
Professional and problem areas	During this introductory course students will get acquainted with the meaning of active learning in education and training. Active learning is an approach to, a way of thinking about, learning and educating.	4.3	OU NL
Learning in the connected economy	This course examines how internet is affecting conventional approaches to education and training. It looks at the impact of increased connectivity on learning from the perspectives of the individual, the organisation and society.	30	OU UK
Learning and competency development	In this course students will become acquainted with recent social and scientific developments and their implications for learning and training. Learners will gain insight into the growing attention for and the applications of competence based thinking in education and organisations. Students will also learn more about the consequences of Life Long Learning on the content and design of education.	4.3	OU NL

4.2.2 Educational Design

Course title	Description	ECTS	Institution
Theoretical framework and backgrounds of educational design	This course focuses on the origin of the discussion about what constitutes learning and how learning processes	4.3	OU NL

	work. Students encounter different educational-psychological theories and learn about their impact on educational design. Learners also develop insight into theories used by designers by means of practical examples.		
Approaches, strategies and methods for educational design	Characteristic of educational designers is their systematic and phased way of working. In this course the most common conceptions on the design of educational and learning situations will be explored. Students make their own design, while going through the design cycle step by step.	4.3	OU NL
Research methods for educational design	A scientific debate on research methods will be the core of this course. Students will be introduced to the debate educational researchers are holding on the methodology that can be used to make research on education suitable for the process of educational design. Students will study texts containing arguments of this debate and texts on research and will learn to hold an opinion on the scientific value and usefulness of research results. By comparing different research articles, students will learn to select the most suitable research method. At the end of this course students will be able to write a substantiate research proposal to plan and realize research activities during the design process.	4.3	OU NL
Instructional design	During this course students will develop a detailed instructional design, using a current design model, the 4C/ID-model. Students will learn, for example, methods to make decisions on the course content, the sequence of course contents, guidelines to specify the content and to develop challenging assignments.	4.3	OU NL
Implementing online, open and distance learning	This course enables a student to read, think and write about core aspects of designing, planning, setting up and running online, open and distance-learning courses, programmes of training packages.	30	OU UK
Current trends and issues		4.3	OU NL

4.2.3 Educational technologies

Course title	Description	ECTS	Institution
The eLearning professional	This course is designed for students wanting to understand the issues involved in the evolving practices of elearning and, in particular, personal and professional development using online tools, resources and eportfolios. Students will explore the pedagogic theories underlying these practices, and use and evaluate examples of online tools and applications that support them	15	OU UK
Internet technologies and applications in educational processes	The objective of this course is to introduce students with basic terms, concepts and solutions in the field of e-learning; trends in usage of information technology for learning and teaching; influence of e-learning to acquisition of knowledge and general economics development; modern distance learning methods and approaches.	6	JSI
Learning theories / learning technology / learning practices	- Computer Based Cooperative Work - Computer Based Learning - Concepts and Systems for Computer Supported Cooperative Work - Human-Computer Interaction and Requirements	8	RWTH
Practice-based research in educational technology	This course develops skills of research and evaluation in technology-rich environments. The course looks both at how new educational technologies are researched and at how technology is changing the way educational research is conducted.	15	OU UK
Innovations in eLearning	The course is divided into 3 blocks. The first block of study gives a student an insight into key elearning concepts and will help him/her develop a sense of what counts as real innovation when faced with new technologies and the promise that they may transform teaching and learning. The second block is designed to give you hands-on experience of new communication technologies, such as podcasting and audioconferencing, and	15	OU UK

	an understanding of their effects on teaching and learning practices, while the final block is about linking knowledge, understanding and experience of new technologies to the design of effective teaching and learning.		
Mobile learning	Using mobile devices for learning has many advantages compared to traditional e-learning. Primarily the ubiquity of devices, which are always readily available for the students makes learning anywhere, anytime possible. However, using mobile devices for learning requires a number of skills and insights about mobile content, -services and –learning. This course covers – Mobile media production – production and delivery of video-, audio and text-based media adapted for use on mobile devices. – Mobile service development - programming techniques for developing both web-based mobile services and stand-alone services, as well as developing both simple and advanced user interfaces – Students and mobile learning: mobile learning styles, adaptive learning based on context awareness, micro-learning and spaced repetition	10	KTH

4.2.4 Processes and models in professional learning

Course title	Description	ECTS	Institution
Communicative modelling	The purpose of modelling is to create a structured description of a problem domain that simplifies matters and creates an overview. The course will cover a number of different techniques for static (time-independent) and dynamic (time-dependent) modelling. The students will learn about: – conceptual modelling in UML, – activity modelling in UML, – process modelling in enhanced Astrakan, – communication through message passing between state diagram,	15	KTH

	− systems thinking and systems modelling, − application of the above modelling techniques for learning, knowledge, business, social, mental and foresight modelling.		
Business process frameworks and modelling			DFKI
Reference models for industrial companies			DFKI

4.2.5 Learning communities and social networks

Course title	Description	ECTS	Institution
Methods for network analysis and learning communities	The objective of this course is to introduce students with a series of SNA techniques for analysis and visualization of learning networks.	8	RWTH
Social media technologies	This course, which will be given the first time in the fall of 2008, is an advanced course on the social dimensions of web-based services. It concentrates on the technology platforms that are used for collaborative and social activities. The course provides technical knowledge for the students to be able to use, reuse, and develop social media services. Especially we will concentrate on peer production platforms as well as social and serious uses of gaming platforms and virtual worlds.	8	KTH

4.2.6 Usability and quality assurance

Course title	Description	ECTS	Institution
Quality assurance in education	In this course the students will become acquainted with different aspects of the quality assurance in education. What is quality assurance in education? How is it measured? Who assesses the quality of education? And how does one preserve or improve the quality level of education? Students will learn about models, systems and instruments for quality assurance in education and improvement of quality. Students will analyse a system of quality assurance and will formulate an advice on quality improvement.	4.3	OU NL

Course title	Description	ECTS	Institution
Applicability of ICT applications	The main objective of this course is to present basic knowledge and contemporary research findings on Human-computer interaction (HCI) and present students various usability evaluation methods and techniques which are frequently used for evaluation of ICT applications. The course includes lectures on human-computer interaction, acceptability of ICT systems, and usability evaluation methods, techniques and standards.	6	JSI
Human-computer Interaction			KUL

4.2.7 TEL and Knowledge management

Course title	Description	ECTS	Institution
eLearning and knowledge management	Information and communication technologies (ICT) play a crucial role in information systems studies. Within this course, the design of information systems for knowledge sharing and transmission is in focus. For instance, this includes digital learning environments, virtual lecture halls, and community portals. The course introduces into relevant technology necessary for creating such information systems (e.g. learning management systems, content authoring tools, video conferencing systems). Subsequently, use-cases are discussed with a strong focus on effectivity of technology deployment.		WUW
New media and knowledge management	The aim of the course is to teach the students the issues, methods and techniques of knowledge management and to train them to be able to solve real problems in the field of e-science as well as industrial and management applications.	6	JSI
Knowledge representation			L3S

4.2.8 Digital content production

Course title	Description	ECTS	Institution
Multimedia technology	- Computer Graphics	8	RWTH

	- Geometric Modelling		
	- Scientific Visualization		
	- Pattern Recognition and Neural Networks		
	- Introduction to Visual Processing and Computer Vision		
	- Virtual and augmented Reality		
	- Introduction to Media Analysis		
	- Statistical Methods in Natural Language Processing		
	- Digital Processing of Speech and Image Signals		
	- Automatic Speech Recognition		
	- Computer Vision and Image Based Rendering		
	- Introduction to Knowledge Representation		
	- Multimedia Retrieval		
Multimedia use and impact	- Entrepreneurship and new Media - Designing Interactive Systems - Web Engineering	8	RWTH
Designing games	The aim of this course is to develop a computer video game. The main learning objective is team-work for problem solving, as well as game development and programming for the web.	4	INT
Multimedia, problem solving and design			KUL

4.2.9 Computer science and information system basics for TEL

Course title	Description	ECTS	Institution
Aspects of theoretical and practical computer science	- Introduction to Software Engineering - Introduction to Databases - Introduction to Artificial Intelligence - Object Oriented Software Construction - Introduction to Cryptography	8	RWTH
Computer mediated collaborative work	This course is dedicated to distributed systems and related applications to mediate collaborative work. After introducing theoretical aspects of CMCW, we shift to design and implementation considerations as well as the evaluation of CMCW applications.		WUW

	Apart from general issues, one unit is dedicated to a set of applications for different tasks including communication, coordination, and cooperation tasks.		
Middleware and distributed systems	The aim of this module is to give the students basics for the development of network-based software, to understand the emerging technologies related to high performance computing, like cluster computing and grid computing, and to understand how to develop a distributed application with different technologies from sockets to component middleware through remote procedure call (RPC), remote method invocation (RMI).		INT
Computer and communication technology	- Communication Systems and Internet Technology - Mobile Communications - Distributed Systems - Privacy Enhancing Techniques - Security in Communication Networks - Data Communication - Capacity Planning and Performance Analysis for Client and Server Systems - Web Protocols and Practice - Implementation of Databases	8	RWTH
Privacy and identity management	New personalized learning services and learning environments present new threats to privacy sensitive personal data. The goal of this course is to provide a broad overview of the technologies, services, applications and procedures for privacy protection. The students will gain theoretical and practical knowledge about privacy protection related measures, e.g. privacy legislation, privacy-enhancing technologies on the user side, on the service provider side and at communication level, or identity management systems.	6	JSI
Personalisation			L3S
Information systems			DFKI
IT case studies			WUW

4.2.10 Other

Course title	Description	ECTS	Institution
Research methodology	The aim of the course is to introduce the student to the methodologies used in academic research in order to enable him/her to successfully write and orally defend a Master's thesis. Topics covered include: philosophy of science, epistemology, research design, data collection and analysis, thesis writing, presentation and oral defence.	4	INT
Effective communication	– To acquire and develop the necessary skills and language to give an oral presentation in a professional/academic context, to write an article abstract, – To provide an introduction to the fields of negotiation and conflict management, – To apprehend the complexities of the intercultural aspects of lining and studying abroad.	4	INT
Communicating across cultures: a focus on intercultural awareness	The aim of this course is to heighten awareness of communication difficulties caused by cultural diversity. We will look at some of the major obstacles to communication in a multicultural situation and propose possible solutions.	4	INT
Working in international research projects	The course consists of seven seminars that focus on practical issues scientists are facing in international research projects. The seminars deal with the right research design and conceptual design as well as project management, understanding organisations. It gives some insights into how to present and exploit research results as well as how to handle socio-economic research in an international context. Focus is in generally on competence advancement of young researchers.	9	ZSI
Project management	The course covers the basics of project planning, implementation and control. The objective is to provide participants with the necessary tools and techniques used in a wide variety of successful project design, implementation and control environments within the overall	4	INT

	framework of advances in modern information technology. Topics covered include: project design, developing project plans, tracing progress, information systems and technology used in a wide variety of project, communication tools, etc.		
Telepresence production	"The basis for good communication is trust. The basis for trust is a sense of presence." This existing net based course is concerned with the production of presence and reality in mediated situations. With a departure point in the definition of the concept of presence, it addresses both technical and non-technical aspects of distance communication and mediated learning. The course includes topics such as narrative techniques and practical methods in audio, video, and multimedia communication, methods for emulating close interpersonal interaction, trust-building, eye-to-eye communication, and means of achieving "the willing suspension of disbelief". There is a concluding net based group project where the students can apply and test their knowledge.	6	KTH
Human resources management	The aim of the course is to prepare the manager to utilize the human assets of the organisation in a manner that maximises his/her contributions to the organizational performance. Human resources are considered from both the European and international environments. Emphasis will be placed on understanding the differences and similarities of individuals and a variety of groups, with careful examination of individual and group values, attitudes, and behaviour. Equipped with this understanding, the manager should be able to operate comfortably and successfully in today's complex workplace.	4	INT
Management of innovation and change	Managers must have a deep understanding of how innovation works, and how people interact with changed circumstances. Implementation of new ideas, new strategies and new	4	INT

	technology is one of the most complex of any organisation's tasks. This course introduces the student to the perspective of innovation and change in modern information age. It highlights the tools and techniques necessary to ensure success with brining new processes and different strategies into the organisation.		
Managing people in the information age	A key to successful leadership in any organisation involves managing people. And with the increasing globalisation of markets, coupled with the advent of modern information technology, successful managing of human resources becomes the key to success. Successful management of human resources involves a variety of activities such as: deciding on your staff needs, how to fill positions within the budget, recruiting, orienting and training employees, and ensuring they perform well. HR management also includes managing employee benefits and compensation, employee records, legal issues, and relations with unions. All of these issues will be addressed in this course within the overall context of the information age.	4	INT

5 Conclusion

During year 2006 the ¨PROLEARN Academy built qualitatively on its successful summer school organised in 2005 and introduced the first PROLEARN Doctoral Consortium at the EC-TEL 2006 Conference, another qualitative advance for the Academy in meeting its education and training goals. These two events will be repeated in 2007. PROLEARN Summer School 2007 will take place from May 27th through June 2nd in Fréjus, France, and PROLEARN Doctoral Consortium will take place again at the EC-TEL conference September 17th and 18th, in Greece as the virtual Academy continues to strengthen its leadership position in training the future generation of TEL experts. Details about these events are provided in D9.4. The Academy hopes to perpetuate its education and training events into 2008 and beyond. Sustainability studies are underway to plan for this.

A. ANNEX 1: Student comments from Summer School 2006 Evaluation

How did you hear about the PROLEARN Summer School?

At the IJS, Laboratory for open systems and network
Colleagues that went last year
Core Partner
Co-workers who were already participating / related otherwise
DB world
DB World Newsletter list
email
e-mail by Oliver Bohl
from a former participant
from friends
From mailing-lists (DB-World)
from my boss :)
from my boss Mart Laanpere
From my older colleagues as well as from other Prolearn partners
From my supervisor
from my supervisor
from my supervisor + the other colleagues who came last year to the summer school
from my supervisor Dr. Hugh Davis, University of Southampton
From one of my colleagues
from partners on the project I work on
From the chairs
from the internet
From the supervisor
from the TENCOMPETENCE Project
Helped with organisation
I heard from my supervisor
in our group at the university
Internet
Mart Laanpere - Head of Center for Educational Technology, Tallin University
Milos Kravcik
My department is a member of PROLEARN NoE
My PhD advisor ask me to attend the summer school
my professor
My supervisor told me
My tutor told me about Prolearn
Personal contacts, webpage
Prolearn :)
PROLEARN site
PROLEARN website
Promoter and Supervisor
Semantic Web mailing list
Through my thesis supervisor
Veri good
via a colleague at university
website

What were the most beneficial aspects of the summer school for you?

1) food for thought; 2) clarification of certain matters 3) confrontation with people from different domains 4) new knowledge, new tools

1) To understand what the other PhD student are making for their research and to know them for future collaboration; 2) To take part at lectures to know the learning researcher and to see the new challenge of learning research.

3) Gaining a broad but condensed/intensive overview on ongoing research activities in the field of TEL pursued by PhD students, professors, institutions, and companies. 2) Receiving feedback on and confirmation of my PhD focus as well as new aspects to take into account. I feel much more confident now. 1) Meeting great people to continue working with! And last but not least: Getting to know SLOVENIA!!!!

Broaden horizon…. Networking

Chance to talk about research issues with specialists; Chance to talk with other PhD students and relate to their work; Chance for social networking.

Collaboration for new knowledge for increasing my search works and studies

Feedback for my PhD; new aspects for further research; new contacts; meet lots of new people; interact, collaborate with other PhD students

Get an overview of TEL-related topics + activities on an European Level; Get to know colleagues who are involved in research activities similar to mine; Get to know the key-people in TEL in Europe; Ge a glimpse of tools + methods for researching; Brush up my English a little; Have my own ideas checked by peers.

get to know new fiends; general overview of the field.

Getting to know what the other PhD students are doing; Some professional introduction to the state-of-the-art technologies, trends and so on; Getting to know Slovenia intensively.

great opportunity for networking; new insights into TEL research; planned projects (joint article); lots of fun

Hear from what is done in some other topics in the field; to have discussions with others having similar / different topics + elaborate what we mean by some of them in different fields.

I know the principle concepts used in eLearning

I think the theorist and practices aspects were very important. For example: conceptual models; Reload (Player) ??; Collaborative learning activities in my cluster.

I was able to talk with many other PhD students. This way I gained knowledge about what is a PhD student and what is expected from us. Also I discovered that "FUN" should be an important part for the next three years of my research.

Inspiration from all the different topics; informative; some very good talks

Know other PhD students and discuss with them some aspects about my PhD; Also have been important to know the new trends of eLearning, I think these talks affect my PhD development.

Learn about different topices in eLearning and the semantic web; Meet people with similar interests / research; Collaborate with other PhD students to get the most from experts in the field

Lections on Personalize Learning; General overview of current research in the field of eLearning Systems; Communication, getting to know people from our research area.

Lectures and workshops about adaptive learning, organisation learning, content, usability were more interesting for me. And of course meetings with so many different and interesting people were great.

lectures, communication

Meet other people working in similar area; getting new ideas from some interesting teacher's talk, visiting new places, having fun!

Meet other PhD students to see that they are very similar to me concerning my way of doing research; meet very nice people; blend interesting lessons + workshops; have FUN: both "serious" fun and "regular" fun!

Meet people; listen to interesting and new presentations; learned several thins related to my work; had lots of fun

Meeting experts and other PhD students; Finding people with similar interests; Questioning my research - what am I doing how does it fit in the bigger picture.

Meeting experts and other students; spend time with others and focus on my research

meeting new PhD students from different countries especially from (non-English speaking) countries/universities; Being aware of other research that is taking place in similar research areas; initial plans for a joint paper publication; New experiences: rafting; useful discussions (research + social wise)

Meeting nice, smart people; Exploring new fields of TEL

Meeting other PhD students with same research interest, sharing ideas, defining common concepts and contacts

Meeting other PhD-students both in a research situation and in a more informal way, also to meet experts in many fields

Meeting people from outside and inside of PROLEARN; getting interesting topics presented; getting to know the PhD students

Meeting people who is doing similar things I do, so we can talk, explain our experiences and look at our ideas with different points of view; Know some experts which can give us some incoming for our future work; Slovenian environment and outdoor activities.

Meeting people, networking, finding people to collaborate, getting to know professors and experts

My beneficial aspects were lessons "Personalised and Adaptive Learning", "Authoring and Engineering eLearning Systems", "Web 2.0 and Social Software for Professional Learning" and "Usability Knowledge for eLearning, Learning Objects, and Learning Systems"

Networking

new knowledge of eLearning; new research ideas; new partnerships

new knwoledge TEL and ideas for my future work in e-learning

Neworking, come across different new points on the same issues & concepts.

Neworking: contact to mentors and students from different countries; lectures and workshops: I know a lot of new things; grounding joint activities with other participants - papers, doctoral consortium, project work

the networking relationships we established; the discussions in the clusters workshops

The opportunity to talk to people in the same PhD phase as me and to exchange ideas. Also I had the opportunity to improve my knowledge.

the talk & workshop & off course for the discussions & networking with the expert & the students as well.

To find a people with similar research topic

Variety of topics (mainly lectures)

Do you plan to participate in PROLEARN post Summer School events like post conference workshop follow-up meetings?

?

I do not know yet. Actually I did know about such meetings before.

I don't have plans at the moment, but I would like do it.

I don't know

I don't know by now.

I don't know, because unfortunately I don't find students that share my same research interests.

I hope I can but not sure about dates and timing, I will be travelling to Ireland and Germany in the next two weeks.

I plan to, but I'm also realistic that it might conflict with the agenda sometime. But my intention is of course really to try and make the summer school not only a 1 week event but much more after that week.

I want to do this.

I will participate in ICALT 06 conference

I will participate in post conference workshop meetings.

I would like to. We will have some Flashmeetings with our group and Effie, but it will be interesting for me to have some other meetings.

Maybe, but I don't think so because I was not very active in the workshop.

perhaps, depends of workload

Probably

Probably not

probably will

Up to now I don't know

Yeah, I would like to

Yes

Yes

Yes

Yes

Yes

Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes I am looking at continue attending PROLEARN events.
Yes I like
Yes I would really love to do that
Yes!
Yes, actually some activities have been finalised prior to summer school since there was already a group of people cooperating. The focus is now clearer, I think.
Yes, definitely.
Yes, Flashmeeting but no conference
Yes, Flashmeeting, emails or other organised events as long as my superviser approves my attendance to other events.
Yes, we are planning to continue our work in the Workplace Learning group.

In what way do you plan to formalise networking relationships that you have developed at the summer school, for example joint publications, joint proposals, mentoring relationship, joint course, submission to the EC-TEL Doctoral Consortium, etc.? If possible, could you provide a reference?

As I said before, it will be difficult for me to write a joint publication, because my research topics are not shared by other students, at least not now. Anyway it was very interesting and fruitful for me to interact with people with different interests.
At the moment, I don't plan to formalise networking relationships. However, I do now know about what other people are working on, and keep that in mind for possible future contacts.
Contacts with some professors possible cooperation in the future
Do not know yet.
Don't know yet.
Flashmeetings (interviews), e-mails and chat …, joint publications is not very easy as it depends on universities policies (e.g. in my university, if you are not a part of a project you can't have joint publications with someone from another university. Sogetting involved with joint projects would be an idea for networking and exchanging ideas.
I am planning to work closely with at least 6 people I have met here. This will initially take time form of flashmeetings leading (hopefully) to joint publications - EC-TEL.
I don't plan to formalise my relationships yet.
I found a PhD work related to m own work and we will exchange papers and ideas. Yes
I hope all participants will still communicate & collaborate after the summer scholol either by smail of the flashmeeting & forum. The networking can be formalised by having maybe a joint publications & mentoring relationship: 1) Alexandra 2) Ambjörn 3) Daniel Burgos 4) Marcus Specht
I think that it will be useful to use Hexagon or organize Flashmeeting among the member of the cluster. An other way is to have a space where formalize idea or problem and the other can contact the people to found solution and white paper. And another way is to know always the project and paper that are producing by the community (a.penta@unina.it)
I will probably write a joint paper.
I would like to have collaboration in ???? Tutoring, but I am not sure it will be possible at the moment.
joint proposals
joint proposals and papers
Joint publication (with 2 other people from different clusters); Joint proposal: possibly but not yet finalised; Sharing ideas and keeping in contact with those who have similar ideas + (friendship)
Joint publication about Workplace Learning in the context ot TEL; submission to the EC-TEL Doctoral

Consortium (Workplace Learning meets TEL); Mentoring relationship - K. Tochtermann, R. Koper, E. Duval, P. Scott, Ambjörn, Effie Law etc.; Maybe joint proposal for the EU 7th FP

joint publications (EC-TEL 06 DC, extended version); joint proposals (FP7, National Fundings); Book project (e.g. IDEA group)

Joint publications, EC-TEL

joint publications, eventually organising a book submission to EC-TEL Doctoral Consortium)

joint publications, many ideas for my PhD thesis

joint publications, proposals; mentoring, still have to get a mentor, but yes sure :-); EC-TEL submission planned

Joint publications; Submission to the EC-TEL Doctoral Consortium

joint research; information visualisation (Joris Klerkx) - knowledge construction (Martin Sillaors)

joint publications; mentoring relationships

Maybe publication, sharing experiences

Mentoring

Mentoring relationship would be great. Joint proposals also. But I have no concrete references or plans at hand at the moment.

N/A

No plans for now

Not directly joint papers, but possibly teamwork with a few people.

Possibly for a joint paper from my cluster based on our communicative modelling process.

to answer special questions; to write a publication with a participant from summer school; exchange ideas for further research and also joint publications in the future.

We are planning to write some joint publications, one to EC-TEL and maybe some also later on. We do not have such an exact plans yet. I did not find a mentor yet but Ambjörn is a potential one!

We plan on joint publications on doctoral consortium (EC-TEL), joint proposal for a book, and maybe also for research projects.

We plan to write a paper on the process we followed to develop our conceptual models.

We will try to start with submission to EC-TEL. Then, we will se. Maybe some other joing publications.

We would like to have some further cooperation and collaboration. However, we have not set a fixed target, yet.

What are your suggestions and recommendations for PROLEARN Summer School 2007?

(I'll think about that and send some feedback in email)

(more) extra time for the cluster projects; short introduction of everybody

1) leave more time for cluster work. We had to do it during breaks and such 2) try to get more students from social sciences.

1* Maybe the clusters should be in more specific topics, e.g. ask members (students) to cluster themselves before the summer school. Maybe to provide 1 paragraph about each student research (PhD) in the website before the school, so that people can define like-minded people (with similar interests) before coming. 2* Also maybe more demonstrations (technical) and more on the semantic web. 3* As for Social Events, I don't think it could be organized any better! 4* More time for cluster meetings/project.

A course on research methods would be useful for first-year PhD students; A course related to social networks.

A little more time to take advantage of all the offerings, the working groups, and the tools provided would be nice, but this is a trade-off between a fantastic programme and limited time! I loved the workshps that were more like a moderated discussion (instead of lecturing), they caused a very interactive environment)

Clusters should not contain more than 10 people

Eliminate/delete some generic presentations because PhD students may have generic knowledge. Enhance communication and collaboration by providing more advanced platform for sharing and informing! Structure how you arrange small group discussions with experts. Ambjörn's work and support was great, but please leave some work and thinking to us! I would also like to have one file including the contact info of all participants.

Everything was very well organized.

Give more time to SIG (Cluster) work! Parallel sessions, where also group work should take place does not really work. Open space would be a good approach.

Have more the structure: morning lectures / afternoon, WS; give more time to the clusters; tutoring really

important; find a spot for the event within one building.

Having all participants stay in one hotel (= this year); acceptance of credit-cards would be good in order to ease the payment of registration fees; involve more PROLEARN (associated partners); maybe small "expense allowance" for external speakers?

I think it is vey well organised. Maybe I will follow more lectures on model (formal) to represent and reuse knowledge of learning resources.

I think some people don't have laptops so it could be a good idea to provide with more than one computer.

In my opinion this summer school was very well organised. A bit annoying was that information was sent by email and it happened that I was too late read it. Maybe some kind of notice board with the current information and clear overview in which room what workshop.

internet connection in the room

It is one of the best summer schools I ever attended.

It was very nice. Only "time-problem" was that there were no "planned" timeslots for the cluster meetings.

May be more time for work in clusters

Maybe more free time would be better for people to meet each other. Students should prepare thier conceptual maps earlier than the summer school so they would be able to understand the process better.

More information form industry would be nicer. More preactivities might be help to help people know each other. Clustering of groups can be redefined and reclustered on the first two days to make up better cluster.

More interactive workshops

More scheduled time for the clusters

more social activities; less parallel sessions; more "setting the scene" presentations; more student driven work; less lecture style presentations; more direct sessions prof/one student meeting possibilities.

more time for self-organised groups; earlier notification of acceptance (2 months in advance); better bathrooms; better weather; internet access in the rooms (sleeping rooms) as well.

More time to work together, we were too busy during this week. Shirt was nice!

N/A

One or two more social events in the evenings

Other different technologies of elearning.

Please don't go to a too fancy area! It's good to be in a place where you somehow "need" to socialise among the participants; Encourage PhD students to more present their ideas in a "safe" way (i.e. have more lecture rooms with beamers and/or flip-charts); continue providing "dangerous" team-building activities such as rafting; continue attracting women + men doing research in TEL (good work by the way!)

Start Flashmeetings earlier. Initially try and suggest what meetings should do; Ice-breaking session on first day; Internet access (wireless)is needed in all lecture rooms; Maybe Vblogs for everyone at start to introduce themselves & research - so that we don't have to read documents.

talks and seminars that introduces new technologies and the latest research in the field (More in depth and not just touching the surface); Give students time to do thier own work; Give students the choice to form their own groups; Give students enough time to do the requested tasks/H.W.!; The shcool days should finish at 4:30 (max) to allow time for other activities (sports for example).

The lectures could start a little bit later (10 AM); Shared rooms could be a little bit broader; Maybe to organise the summer school at the end of June / September in order to be warmer (Rafting was freezing); But all in all summer school was really great!!!; Perfect organisation; very good lectures, workshops and mentors; great social activities!; It was a lot of fun and great memories!

The organization of the Prolearn Summer School 2007 *(2006?)* is very good. However, for the next summer school I think the student needs to be given time to do the work that they have to do. Other than that is not to put topics that are related in the same parallel session. Others are excellent!! :-)

This year's summer school was better than the one in 2005. Some points can be improved: e.g. the collaborative sport activities (soccer, basketball).

to cluster the PhD students according to their "PhD Year", I mean, fresh PhD students, PhD students in their last year etc.

To have a number of more specific lections (Not just a general overview). To plan more time for group work and organise mentoring of the each group. Not to schedule sections with the similar topic at one time!

We didn't have a lot of time for doing our cluster's work

What are your suggestions and recommendations for the location of future PROLEARN Summer Schools?

A central country not very well known.
A Mediterranean place could be nice! Slovenia was a great place as it is not the typical place to go too: So my learning experience went beyond TEL in many ways! I could highly recommend something similar!)
Any part of Europe is good. I think people were also learning about the country in addition to the school material. Personally, I prefer southern European countries because of the weather! And as I'm from the UK, that's the last place I would recommend as I live in it so it wouldn't be a trip for me.
as good organisation
Austria, Slovenia, Southern Germany, but I would not have nothing against of Madeira, Mallorca, etc. :-)
Cyprus, Slovenia, Crete, Stockholm - well actually everywhere in Scandinavia - Barcelona, Romania
Don't really have any preferences.
Either northern Europe or the Mediterranean
First of all, the location way very nice! Nice country…; Next year suggestions for the location: Spain, Italy, Cyprus, Greece
France
Great Britain (somewhere more countryside); Malta; Bulgaria; South France; Denmark; Netherlands
I liked a lot Bled and Slovenia, but the only one problem I had was when I tried to phone my house. I think 4€ for 5 minutes is to much. Anyway I would like to give thanks a lot for the organisation of this summer school I enjoyed a lot!
I prefer a place with more clubs for the evening. But this is very beautiful.
I'd like to go to Scandinavia of Italy, maybe Greece
Ireland
Ireland; Greece (Islands)
It was perfect! Thank you!
Italy
Japan
Keep all in one place like in this year. More closed working rooms. More computers available for those who did not their own one with them.
Maybe hotter places would be better.
N/A
no comments
No suggestions. Really well balanced with working time and free time
Norway/Sweden
Places like Bled are OK - off the big center, but with lots of attractions
same setting like Bled; all students in one building; network access building wide; less warm food but full board; low cost environment
See U
Somewhere hot, warm with opportunity for going to swim in the sea / lake
Somewhere in warmer country
somewhere outside of Europe? 1 of the other new EU members
Spain, Portugal, Greece, UK; Bled was great!
Switzerland/Stockholm

Are you planning to attend the next Summer School in 2007?

?
depend of the workload at that time
Hopefully not as a PhD student :-) As a Post-doc / lecturer. I would enjoy it.
Hopefully yes.
I do not know yet, I might finish my PhD before that or just little bit later.
I hope but to finish my PhD thesis before the next Summer School. But I could like to contribute as a mentor.
I should finish my PhD this year and feel sorry for it
I wish it
I would like to

I would like, but I don't know at the moment.
I would like, but probably I will work hardly on my thesis.
I would really like to :-)
I'd like to
If possible yes
If possible, yes
Maybe
Maybe
Maybe
Maybe, depending on the dates
Next year, probably other members of the research group will have the chance to come.
No
No, because I am a last year PhD student.
Probably not because I will be in my last year next year trying to finalise everything.
Unfortunately I'll not be a PhD student anymore:)
Well … :)
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes … I hope so.
Yes, I am.
Yes, I would love to.
Yes, if will get scholarship
Yes. Of course if I ever have the opportunity again. I benefit a lot fr. this summer school.

Did you have a scholarship to attend Summer School 2006? If you had not been able to get a scholarship to the summer school, would your university have financed your participation?

Absolutely no!!
Didn't have a scholarship
I don't know
I think yes
If not - my university can just partly support us. We have a limiting amount of money for travelling. Mainly it is for conferences.
If not my chair might have still financed me (didn't check that out in advance).
if not university couldn't finance my participation
Maybe, I did not ask
Most probably yes
My university financed my participation
My university financed my participation
my university may not have financed my participation
No idea but I guess they would have financed it.
No, my university would not finance my participation. I paid my own transportation coming to Slovenia :-(
No, my university wouldn't finance me.

University would have paid half of the costs.
Yes
Yes

B. ANNEX 2: Marie Curie RTN proposal TEL@Work

HUMAN RESOURCES AND MOBILITY (HRM) ACTIVITY

MARIE CURIE ACTIONS

Marie Curie Research Training Networks (RTN)

Call: FP6-2005-Mobility-1

PART B

B.1. Scientific Quality of the Project

B.1.1. Scientific Objectives

The TEL@Work research activities aim to **integrate and advance** technology enhanced learning at the workplace of the future. While a variety of technologies which support learning have been introduced at the workplace, these technologies often cannot interoperate in a seamless way for the end-user. Furthermore, existing technologies often result from independent research communities, e.g. on database technologies or second language acquisition. These communities are not currently collaborating or exchanging ideas, visions, and results. As a consequence, tools and methodologies currently only partly support the varying needs of the learner, and often ignore the specific needs at the workplace. Basically, tools fall in two categories: technology driven development, for rather simple pedagogical requirements, or pedagogically driven development employing outdated standards and technologies. TEL@Work aims to bring these various developments together by creating common interfaces to these tools, combining both pedagogical and technological approaches, and integrating research in social networks and communities, thus improving and strengthening **professional learning scenarios** envisioned for the future.

TEL@Work will establish and implement an interdisciplinary training network in the field of technology enhanced learning for the workplace, integrating the widely fragmented domains of technology, educational and socio-economic sciences, for the purpose of designing a visionary set of training measures for the workplace of the future and contribute to the restructuring of the European Research Area. The network will **bring together a diverse group of researchers** from many disciplines: computer scientists, system engineers, (etc), as well as educational scientists, sociologists and economists.

The research activities will focus on the development and tight mapping of existing and emerging technologies to workplace learning scenarios. The research topics include the examination of critical success factors for the uptake of technology at the workplace, targeting sociological, cultural, and economic perspectives. Based thereupon, strategies for implementing workplace learning will be developed and a roadmap for the future will be charted. In **close co-operation with industry**, participating researchers will be able to experiment in real-world scenarios.

Research in the TEL@Work project is divided into three main strands of study: **existing and emerging technologies to enhance learning, implementation strategies, and future emerging professional learning scenarios**. Young researchers from the various participating communities will strengthen and develop their profiles to become knowledgeable in fields adjoining their main expertise resulting in the creation of a new breed of researchers that is able to work over-archingly in many communities.

B.1.2. Scientific Activities

The emergence of knowledge works as a critical concept in learning and work (see Brooks and Scott, 2005) has opened up a number of issues for technology enhanced learning. How we integrate technologies to support knowledge workers and provide social frameworks that empower them to learn more effectively is now a critical topic (Scott, 2005). TEL@Work aims to bring key emerging technologies together to support researchers who understand professional learners.

The three main TEL@Work objectives identified above can be further broken down into specific objectives that address the various aspects of Marie Curie Research Training Networks directly:

- To strengthen and develop the collaboration and exchanges among major European research groups from different areas of technology enhanced learning for the workplace,
- To adjust activities to integrate various competencies taking advantage of the multi-disciplinary character of participants, in particular in technology, educational sciences, and business,
- To promote the implementation of technology enhanced learning at the workplace,
- To enable the interoperability and brokerage of existing and emerging technologies, tools and learning resources for learning at the workplace,
- To advance tools and methodologies that enable the (semi-) automatic creation of digital learning material,
- To advance available libraries of digital learning material for training in technology enhanced learning at the workplace,
- To integrate industrial participation into the educational and research activities,
- To address industrial needs from the employer and the employee perspectives,
- To participate in developing and implementing relevant standards at the CEN and ISO level.

These objectives will be carried out within the framework of three parallel lines of research:

1. Emerging Technologies for Workplace Learning
2. Implementation strategies in corporate settings
3. Future emerging professional learning scenarios

The following sections provide a more detailed description of these research lines including their scientific foundation, their scientific originality and their scientific relevance.

B.1.2.1. *Emerging Technologies for Workplace Learning*

TEL@Work has identified three areas of research in technologies which support learning, where a better flow of research results is needed to offer seamless eLearning solutions at the workplace. This research is currently being conducted in the fields of information systems, computer science, and knowledge management.

B.1.2.1.1. Interoperability

Interoperability is defined as "a condition that exists when the distinctions between information systems are not a barrier to accomplishing a task that spans multiple systems." Although prior work, especially in the contexts of the SQI (Simon, 2005), has successfully demonstrated the feasibility of implementing loosely coupled technologies in specific application scenarios, far-ranging interoperability among technologies to enhance learning at the workplace is a goal yet to be achieved. Studies show, that today 30% of the time in software development projects is spent on interface design and implementation. Moreover, 35% to 60% of the IT budget is spent on development and maintenance of interfaces. Experts predict, that this is not likely to change in the future. TEL@Work will conduct research on the interoperability of technology enhanced learning solutions to optimise this process by modelling exchange infrastructures for the workplace to support the seamless integration of heterogeneous systems and tools. Technology enhanced workplace learning usually involves supporting the learner throughout all phases of a typical learning life-cycle: identification of training requirements and desires, assistance in matching these with potential collaboration partners and available services and resources, providing support services during training, facilitating self and/or peer assessment, and evaluation.

B.1.2.1.2. Production of Digital Learning Material

The production of digital learning material has reached a turning point in recent research. Basic technologies are available that allow the relatively simple but highly expensive (because mostly manual) production of learning material according to relevant standards which allow exchange and reuse. However, the combination of these technologies as well as their further development has not reached the necessary maturity to make them successful. Therefore, young researcher projects in this area will deal with the automatic creation and mining of metadata for learning objects, the automatic creation, assembly and disassembly of learning objects, their storage, management and reuse, as well as their integration into suitable pedagogical approaches. This strand of research will closely co-operate with research projects carried out in B.1.2.1.1 to enable the storage, retrieval and reuse of the produced learning material. Furthermore, the production of advanced learning material requires a close co-operation with B.1.2.1.3 to really improve the learning experience for the single learner. Researcher projects will focus on technologies stemming from the communities of database technology, information retrieval, conceptual modelling and knowledge representation. They will integrate research from communities like workplace learning pedagogy, user adaptation, social networks, etc.

B.1.2.1.3. Interactivity among Learning Objects and Learners

The third thread of emerging workplace technologies that will help to draw together the early-stage researcher community focuses on the interaction between the objects used to learn from, and the learners themselves. From this perspective, the critical research issues are communication, presence, and community formation and management. For communication, it is clear that the learning objects are not just passive blocks, which is emphasised by their syndication and sharing as described in B.1.2.1.1. The "interactions" in learning can themselves be valuable objects, complete with invaluable metadata. For example, a seminar meeting held online, recorded and annotated can be itself a reusable resource exposing critical ideas and thinking to a post-event learner. How new technologies are used here to support knowledge work and social networking (B.1.2.2.1.) is going to be a critical emerging issue in this field.

The dynamic interactions between people and Learning Objects hinges critically on the ease-of-access to the LOs as well as on the retrievability of LOs that are suited for the specific needs of a particular individual within a specific community of practice. This in turn depends on supporting a flexible annotation process that captures expressions of experiences (uses) of each LO in a way that is retrievable from the LO itself. Within the TEL@work project we will make use of the Semantic Web based description and annotation frameworks SCAM and SHAME, and the e-portfolio tool Confolio (www.confolio.org) developed on top of them (Naeve, Nilsson, Palmer, Paulsson, 2005). Better matching between community-specific learning needs and learning objects will be based on:

- an opinion-publication network with retrievable experiences of learning object usage,
- the development of process-based descriptions that capture the essential structure of learning processes at the workplace, based on the SECI-process framework.

B.1.2.2. *Implementation Strategies for TEL at the Workplace*

In addition to pedagogical and technical challenges there are also very important organisational and social challenges related to shaping the future workplaces. TEL@Work will bring together research being conducted in the areas of social networks and economics to develop guidelines for successful implementation strategies for TEL at the workplace.

B.1.2.2.1. Learning Communities and Social Networks

The use of new technologies for learning and knowledge management also connects individuals and organisations with each other and establishes relationships between them. Social capital is becoming a valuable asset for organisations. The research questions that will be tackled are related to the theory of relational/social capital. Social capital refers to the value derived from

social ties or social networks. Social capital has the potential to explain many phenomena in expertise sharing networks. Dynamically coupled networks and social links become increasingly important for identity formation, the creation of reputation, trust and the dissemination of information in a networked society. However, the concept of social networks in learning communities still lacks good theoretical grounding (Klamma, 2003). Based on such a theoretical foundation experiments in the TEL@Work educational environments will be carried out with industrial partners to examine the explanatory power of a social capital theory in workplace learning and knowledge sharing.

In TEL@Work we want to explore methods of network analysis for different fields such as project planning, complex systems, electronic circuits, social networks, etc. TEL@Work will focus on two claims for the future of workplace learning: First, the activity of networking can be learned and should be taught to future knowledge workers. Most problems in the organisations of the future will have a very complex nature only manageable by multidisciplinary teams. The ability of knowledge workers to make use of their social capital will be one of the key competencies in the future. Networking should be integrated in training courses and also a "Social Capital Building" course should be provided. Second, technology enhanced learning at the workplace will make use of social network analysis tools to help knowledge workers to be aware of their communities of learning. We will evaluate and integrate tools for analysis, visualizing, measuring, and simulating social capital at the workplace. Since ambient computing will make workplaces smarter in future, ubiquitous devices and humans will build up actor networks as proposed in actor-network theory.

B.1.2.2.2. Economically Viable Workplace Learning Environments

When implementing TEL scenarios in workplace environments, in addition to solving technical problems, attention must be given to managing the implementation and the long-term organisation of the learning processes by implicating various stakeholders. Business model driven approaches will help to define adequate strategies for efficient, successful, sustainable, and acceptable solutions. These solutions will focus on the entire value system of TEL under different working conditions, for different target groups, and with partners from different sectors, e.g. academia/industry, public/private, large scaled companies/SMEs (Bohl &, Winand, 2005).

In the last decade, TEL has made remarkable progress in terms of developing "de facto" used and mature interoperable standards as well as reusable content and learning processes. Nevertheless, existing workplace learning environments fail to meet all requirements of companies. The time has come to take the next step in the maturity cycle which will integrate TEL into the daily work of every European worker for developing employee skills for global markets. TEL@Work considers end user satisfaction as its main measure of success and will equally benefit the companies themselves by considering their key requirements (Martin & Wolpers, 2005).

TEL@work will conduct research on economic issues and specifically on developing measured business model prototypes for market-oriented usage (market model), organisation (activity model), and settlement (assets model) of complex workplace learning environments. The PhD student research projects will be focussed on the realisation of a generic workplace learning environment that fits the educational and economic needs of end users and companies. Results from the other lines of research will feed into the development of business concepts and will be formulated through a holistic, iterative approach. Furthermore, in strong co-operation with TEL@Work industrial partners a proof-of-concept is planned to validate preliminary results and to transfer academic results into market-oriented solutions.

B.1.2.3. *Active Foresight in Professional Learning*

During the recent years methods of future studies have strengthened their foothold outside the strategy planning rooms of high tech companies and the military. Foresight is nowadays considered as a compulsory component of the regular planning activities of any organisation.

The core purpose of foresight is to prepare ourselves for the future that is most desirable for us. Successful foresight is a collaborative and iterative process.

Scenarios are ways to uncover the specific steps and challenges in technology, and qualitative changes and trend breaks that have to be taken into account when anticipating the future. To put it another way, scenario planning is a tool to help us invent our future. The scenarios also clarify economic and societal effects, and can lead to new business and societal endeavours. The time-scale of significant changes in the ICT industry is considered today less than 12 months. Under these circumstances scenario planning provides one of a few structured ways to get an impression of the future of TEL@Work.

Roadmapping serves as a tool for collaborative strategic planning and as such it enables us to derive concrete actions needed when reaching for the desired futures. The value of roadmapping lies largely in its capabilities to enhance consensus building. Technology roadmapping has proven its effectiveness in helping to structure joint industry-government research programs and facilitate collaboration within industries and among companies. Overall, the main benefit of technology roadmapping is provision of information to help make better investment decisions.

Envisioned activities

- Roadmapping methodology and roadmap processes
- Development of a roadmap for professional technology enhanced learning
- State of the Art, needs assessment, and gap analysis between current and future needs
- Technology forecasting and assessment
- Future scenarios creation and analysis
- Trends and key uncertainties for future professional learning

B.1.3. Brief Partner Description

TEL@Work brings together a consortium of 12 institutions of higher education all of which offer Master's and PhD programmes and collectively represent the disparate research areas which support technology enhanced learning at the workplace: systems engineering, computer science, knowledge management, economics and sociology. They have all have at least 10 years previous experience in national and international eLearning R&D projects. Collectively partners are involved in some of the following EU funded projects: ARIADNE, EducaNext, NoE ProLearn, IPs PROLIX and TENCompetence.

1. **GET/INT (FR):** The (Groupe des Ecoles des Télécommunications) federates six graduate HEIs specialising in information and communications technologies. Research activities represent competencies spanning from, signal and communications technologies, computer and telecommunications networks, information systems, business administration, to social and economical issues of IT. The GET employs 450 faculty members, produces 1000 publications annually, wins 350 research contracts. Key staff for TEL@Work include: Prof. Katherine Maillet, Prof. Sylvie Craipeau, Prof. Jean-Louis Ermine, Prof. Marie-Christine Monget, Ing. Olivier Cotinat.

2. **CSI (AT):** The Centre for Social Innovation (CSI) provides efficiency and efficacy in social-scientific research. More than 40 staff members conduct research is focusing on applicable innovative solutions to socially relevant questions such as labour market policies, communities and networks, pedagogical and social aspects of workplace learning, sustainability of new technological developments and the European integration. The CSI is running around 40 projects (national and international). Key staff involves Prof. Dr. Josef Hochgerner, Dr. Margit Hofer and Mag.Barbara Kieslinger.

3. **WUW (AT):** The Institute of Information Systems of The Vienna University of Economics and Business Administration is a leading edge research and teaching centre in the field of management information systems. It is well known for internationally outstanding performance in knowledge sharing and information brokerage research and teaching, and

providing personal satisfaction for students and teachers. The institute's 2003 founded spin-off company Knowledge Markets provides opportunities for exploiting outstanding results. Key staff involves Prof. Dr. Gustaf Neumann, Dr. Bernd Simon and Mag. Fridolin Wild.

4. **RWTH (DE):** Informatik V at RWTH Aachen is headed by Prof. Matthias Jarke. Research and Development covers meta community and multimedia information systems, network analysis, semantic web technologies, workplace learning, knowledge management technologies, and applications in different disciplines like engineering, medicine, and cultural sciences. The chair is involved in two collaborative research centres covering training and teaching aspects of technology enhanced learning. Key staff involves Dr. Ralf Klamma, Dipl.-Inform Mohammed Amine Chatti and Dipl.-Inform Marc Spaniol.

5. **L3S (DE):** Research Center L3S conducts fundamental and applied research in the areas of innovative information and learning knowledge technologies. As a internationally well renowned research organisation, L3S co-ordinates the EU/IST NoE in professional learning and participates in more than 10 related national and international projects. Within the past year, L3S has published more than 100 scientific workshop, conference and journal articles. Key staff involves Professor Wolfgang Nejdl, Professor Nicola Henze, Dr. Martin Wolpers, Dr. Wolf-Thilo Balke.

6. **DFKI (DE):** Institute for Information Systems (IWi) at the German Research Center for Artificial Intelligence (DFKI) research activities focus on business processes and the development of information systems in the areas of lifelong learning (knowledge management & eLearning), business process modelling and management and business integration. IWi co-developed the curriculum of the virtual organised executive degree programme "WINFOLine-Master of Science in Information Systems", which received a national accreditation in 2003. Key staff involved are Prof. Dr. Peter Loos, Dipl.-Kffr. Pavlina Chikova, Dipl.-Inform. Katrina Leyking and Dipl.-Oec. Gunnar Martin.

7. **OU (UK):** The Open University is the UK's largest university, with more than 200,000 students per year studying its courses. Over 80% of these students are professionals who are learning while working. The Knowledge Media Institute is a learning technologies research and development laboratory with well over 30 running projects that are critically relevant to the professional e-learning agenda. Every member of this 60 strong lab is an expert in their field in learning technologies. Key staff includes Professor Marc Eisenstadt, Dr Peter Scott and Dr Simon Buckinham-Shum.

8. **KUL (BE):** The computer science department of the Katholieke Universiteit Leuven has a long track of scientific work in technology enhanced learning. One of the more prominent examples is the ARIADNE Foundation, chaired by Prof. Erik Duval, technical editor for the IEEE LTSC standard on Learning Object Metadata, and former chair of the CEN/ISSS Learning Technologies Workshop. Recent work focuses on federated search across learning object repositories, automatic generation of metadata, automatic aggregation and disaggregation of learning objects, information visualisation, etc.

9. **NCSR (GR):** "Demokritos" is a public multi-disciplinary Research Centre, with research activities in science and technology and significant laboratory infrastructure. NCSRs Division of Applied Technologies participates in a wide range of R&D activities including the development of roadmaps and advanced communication technologies & services-applications. It has participated in a large number of ESPRIT, IST and national projects(e.g. an integrated e-learning system for the 6.000 volunteers/staff of the ATHENS 2004 Olympic Games). Key staff includes: Dr. C. Makropoulos, Vana Kamtsiou, Dr. P. Telonis, Dimitra Pappa, Dr. Y. Manolessos.

10. **HUT (FI):** Helsinki University of Technology is the oldest and largest university of technology in Finland. Lifelong Learning Institute Dipoli (TKK Dipoli) is one of the largest continuing education providers among universities in its field in Europe. The Institute employs some 104 staff members and engages nearly 2500 visiting lecturers per year. Currently 20 staff members are working in the area of technology-enhanced learning, its methodology,

pedagogy and technology. Key staff includes Markku Markkula, Tapio Koskinen, Anna-Kaarina Kairamo, Prof. Ari Sihvola.

11. **UniK (DE):** The Institute for Information Systems is part of the University of Kassel (UniK), which employs a full-time faculty of 340 professors, and 2,400 people working as scientific, technical, and administrative staff. The institute is also involved in an interdisciplinary research centre for IT-design. The University is linked to 22 sister universities and more than 100 co-operations contribute to teaching and research with international partners. Beside national funded research activities, 120 agreements are signed in the frame of European and international programmes. Key staff involved includes Prof. Udo Winand, Oliver Bohl, and Andreas Kuhlenkamp

12. **KTH (SE):** School of Computer Science and communication carries out research and educational activities within the fields of computer science, media technology, HCI, communication and learning. Media technology involves static, dynamic and interactive media in diverse application areas, e.g., Semantic Web, mobility and production of presence in mediated communication. The research of the KMR group (http://kmr.nada.kth.se) revolves around a kind of Human Semantic Web (HSW), which functions as a conceptual interface to the underlying (machine) Semantic Web. Key researchers include: Prof. Nils Enlund, Dr. Ambjörn Naeve, Dr. Alex Jonsson, Dr. Claus Knudsen, M.Sc. Mikael Nilsson, M. Sc. Matthias Palmér

B.1.4. Research Methodology

The research goals identified in B.1.2. will be organised into a set of workpackages having tasks and deliverables. Within each workpackage, the experienced researchers will define targeted research projects in close co-operation with the participating young researchers, industrial representatives, bringing together teams across Europe. The mobility programme for young will be designed to guarantee a maximum amount of time spent at several research laboratories in order to achieve an efficient cross-fertilisation in the different research areas.

An example of such a small project is the automatic generation of meta-data for segmenting and annotating video streams thus (semi-) automatically producing digital learning objects that can be stored and reused in respective learning resource stores. This small project involves at least expertise from researchers at L3S, KUL, OU and WUW and a requirements analysis and testing phase with the help of industrial participants.

By employing computer supported co-operative work and learning technologies, young researchers will be able to prepare their visit to other partners premises thoroughly and will be able to deal with newly acquired skills and knowledge more extensively in the aftermath. In addition to using tools which support meetings, conference participation, online discussion, and shared web-servers, TEL@Work will heavily employ co-operative tools like Flashmeeting for video conferencing and Hexagon for virtual presence, BSCW for the joint collaborative authoring of scientific publications, and Confolio to capture and exchange personal and joint perspectives on research issues, etc.
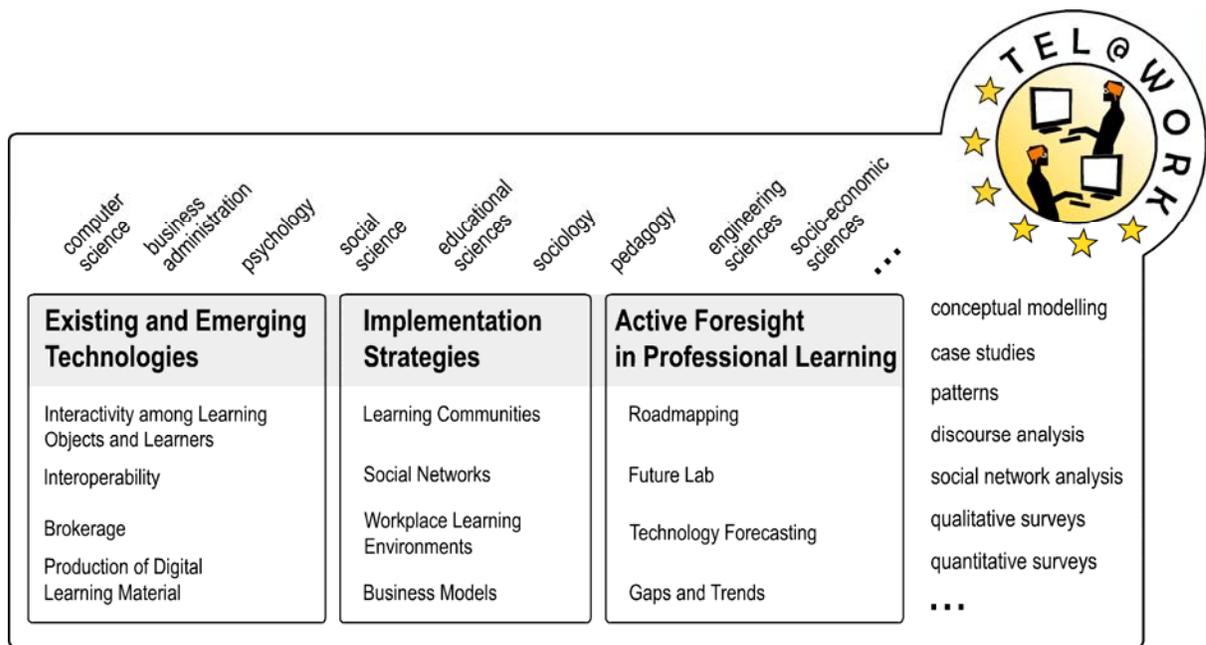
Figure 1: Multi-disciplinary Research Methodology for TEL@Work

B.2. Training and/or Transfer of Knowledge Activities

B.2.1. TEL@Work Training Programme

The TEL@Work network will develop a training programme in the context of the multidisciplinary research communities outlined in B.1.1., working in technology enhanced learning for the workplace learner. This training programme will be based on "training-through-research" under the supervision of experienced and well-recognised researchers in their fields.

Briefly, the main objectives of the Training programme and ToK are:
- To provide students, researchers, and industrial engineers with a broad academic background in the disparate domains of technology enhanced learning,
- To facilitate trans-European integration activities through extended researcher exchanges, summer schools, workshops, coaching, and mentoring,
- To stimulate innovative research by enabling the cross-fertilisation of ideas between different research communities and teams,
- To federate trans-European research teams around the TEL@Work specific research topics,
- To help industry, in particular SMEs, to become more competitive and efficient through the development of technologies to enhance learning at the workplace.

Being complementary to each other, the TEL@Work partners will lend their expertise and research laboratories to this collaborative project. Each partner will contribute to teaching, training, and hosting researchers from partner institutions. The TEL@Work workpackage plan will provide a well-organised structure where every researcher, either early-stage or experienced, is part of an international joint research/training project. Young researchers will participate in online and onsite training lectures and seminars on specific topics relevant to their major research themes and projects.

B.2.2. Relevant educational activities at partner organisations

In line with the three major areas of research, the following section briefly identifies the current educational expertise that partners will bring to the TEL@Work training programme. Collectively, partner institutions will provide courses in: Emerging technologies for workplace learning; Implementation strategies in corporate setting; Future emerging professional learning scenario; Personal development skills. The courses selected below are offered within the framework of ongoing Master's and PhD programmes.

1. **GET/INT (FR):** Systems and Middleware interoperability; Networks and protocols for multimedia; Languages, Standards, and Services for multimedia; ICT for Education, the Socio-Organisational Dimension; Knowledge Management; Strategic Project Management; Professional Writing Workshop; Oral Presentation Skills; Cross-cultural Management.

2. **CSI (AT):** In close co-operation with RWTH, the CSI will offer a lecture series around the topic of learning communities as social networks. Modules will include Introduction to social scientific research methods including social network analysis, Introduction to the specifics of cross- cultural research communities and the Management of international research projects.

3. **WUW (AT):** eLearning and knowledge management, IT case studies, Distributed systems and computer-supported co-operative work, Interoperability of technology enhanced learning at the workplace.

4. **RWTH (DE):** In close collaboration with CSI, RWTH plans to offer courses in the area of Methods for network analysis and Learning communities, "Social Capital Building". Traditionally known for its technical excellence, RWTH is developing interdisciplinary courses by integrating social scientific components and methods and eLearning.

5. **L3S (DE):** Databases and internet technology, Knowledge representation and Personalisation. Through the L3S' involvement in various EU projects L3S will offer courses organised by EASE of the NoEs KnowledgeWeb and REWERSE or by NoE PROLEARN.

6. **DFKI (DE):** Information Systems, Business Process Frameworks, Business Process Modelling, Reference Models for Industrial Companies, Information Systems Architectures, and the virtual MSc in Information Systems (www.winfoline.de) in collaboration with UniK.

7. **OU (UK):** Flagship courses on technology enhanced learning and the knowledge economy, Understanding e-learning, Living with the net, and Design and the web. The Knowledge Media Institute hosts active learning programmes including a live and online seminar series (see http://stadium.open.ac.uk/podium/), deploying the latest interactive technologies.

8. **KUL (BE):** Human-Computer Interaction, Multimedia, problem solving and design, Virtual research seminars on learning objects, meta-data and interoperability.

9. **NCSR (GR):** eLearning, Roadmapping, Telecommunications and Tele-medicine. A Roadmapping module will be co-developed with HUT.

10. **HUT (FI):** Lifelong Learning Institute Dipoli participates in national and international research and training projects in the areas of evolution of education and training systems as well as TEL in professional development. HUT organises conferences, courses and seminars. A course on roadmapping for professional learning will be organised together with NCSR.

11. **UniK (DE):** Information systems development, Databases, Business models, Internet and mobile technologies, Trust in information systems, and the virtual MSc in Information Systems (www.winfoline.de) in collaboration with DFKI.

12. **KTH (SE):** Media technology, Communication, Presence production, Information management and business aspects, Knowledge management, Process modelling, Digital portfolios and Semantic Web. A collaborative course on context-aware media is planned with the OU.

B.2.3. Training and Transfer of Knowledge Activities

Within the framework of implementing its stated research objectives, TEL@Work will organise the following Training and ToK Activities:

An **exchange programme** will be developed, based on the co-advising of Ph.D. students and post-doctoral visits from one partner to another. This means that each appointed young researcher will work for certain periods of time under the advising of different senior researchers. These programmes will also allow funded researchers to participate in the activities organised by the partners.

In addition to the research exchanges, two **young researcher conferences** will take place, the second, third, and fourth years, hosted by three different partners. These conferences will last one week and they will be used, in particular, to present the research developed by the teams belonging to the TEL@Work network. Thus, they constitute interesting training measures that may be undertaken on a network-wide basis. The results of the conferences are planned to be published as journal special issues.

In addition to conferences a **yearly summer school** is scheduled to take place. It will be held in the second, third, and fourth years of the project and it will be open both to members of the project and to invited participants. This activity will be a highly effective community building event since all the courses and presentations given by the different teams will take place in the same site as a joint event.

Participating young researchers will be required to present their intermediary and final research results at **internationally recognised workshops and conferences**. In particular, young researchers are encouraged to publish their results at events in communities outside their own main research field. This will support the promotion of results across community boundaries, as will the collaboration of TEL@Work with other projects in the same and related areas.

Training courses and seminars for early-stage researchers (included in research exchanges) are planned for two weeks in the host university. In parallel to the proposed courses, students will follow complementary courses given by the host. The training period will last three years, beginning the second semester and ending the seventh semester. The topics of these courses will be based on the expertise of each partner and will purposefully be broader than just the research topics relevant for the young researchers to provide them with a broader view on related issues.

The courses will be delivered either online or onsite, and sometimes both. Sometimes experienced and/or senior researchers will move to a host university to impart these courses. TEL@Work will also promote a professional **development programme for industry**, reflecting the one offered to young researchers. In our vision, the TEL@Work community, its distributed research communities and labs will be supported by a powerful range of integrated innovative learning technologies. Networked courses will be integrated into a coherent learning programme, where young researchers will have facilitated access to key experts in the field and their work, throughout the four-year programme.

Finally, **topical educational online and onsite modules** will be provided that are open to early-stage and experienced researchers belonging to our network but also to other groups. These focussed modules will specifically target highly specialised scientific topics. The modules will be given by experienced researchers within small groups of students and will enable young researchers to directly draw on state-of-the-art knowledge of experienced and supervising researchers from other partners in a cross-disciplinary fashion.

These cross-collaborative activities will provide a good opportunity for both early-stage and experienced researchers to be trained in **personal development skills** such as professional communications and international project management. Indeed, these different skills are required to lead the TEL@Work network and to complete the exchanges successfully.

Figure 2 provides an example of how training and knowledge transfer activities could be planned over the four year period.

Planning for Training and ToK Activities	Date
Recruitment of Early Stage Researchers Launch TEL@Work Exchange Programme Launch TEL@Work Research Activities Implement the Computer Supported Collaborative Learning and Working Spaces	Month 6
Seminars, Workshops, Personal Development Courses and Internships in Industry (Year 1): Technologies for Enhancing Learning at the Workplace and Knowledge Management Complementary Skills Training Programme: Oral Presentation Skills, Scientific Writing (Year 1) Implementation of the mentoring and coaching programme	Month 12
Summer School 1	Month 18
Young Researcher Conference 1, Results from the TEL@Work collaborative research	Month 24
Seminars, Workshops, Personal Development Courses and Internships in Industry (Year 2): Social Networks and Business Models for the Successful Implementation of TEL at the Workplace Complementary Skills Training Programme: Project Management, Career Planning (Year 2)	Month 24
Summer School 2	Month 30
Young Researcher Conference 2, Results from the TEL@Work collaborative research	Month 36
Seminars, Workshops, Personal Development Courses and Internships in Industry (Year 3): Active Foresight in Professional Learning Complementary Skills Training Programme: Managing Intercultural Teams (Year3)	Month 36
Summer School 3	Month 42
Young Researcher Conference 3, Results from the TEL@Work collaborative research	Month 48
Seminars, Workshops, Personal Development Courses and Internships in Industry (Year 4)	Month 48

Figure 2: Planning for TEL@Work Training and ToK Activities

B.2.4. Industrial Co-operation

Another important point in training young researchers is the necessity to collaborate with industry. Based on existing collaborations among TEL@Work partners and companies, e.g., France Telecom and eCharlemagne in France, imc and Volkswagen Coaching in Germany, and BT in the UK, **exchange programmes** will be established in order to enable young researchers to gain experience in real-world industrial learning scenarios. Some of these companies have agreed to receive young researchers for visits, seminars, and event training periods and collaborative research.

B.2.5. International Project Co-operation

The TEL@Work partners are internationally renowned experts in their field. As such, they are involved in a large number of international projects, among them are the EU/IST Networks of Excellence in Professional Learning (PROLEARN), KnowledgeWeb and REWERSE, the EU/IST Integrated Projects PROLIX and TENCompetence, iCamp, etc. that all deal with

professional learning and training. All of these projects and others will readily collaborate with TEL@Work to support their dissemination and training activities as well as draw on the well-educated and highly-specialised pool of young researchers involved in TEL@Work.

B.2.6. Gender Mainstreaming

The TEL@Work consortium includes a significant participation of and contribution from women. In particular, the main co-ordinator is female, as well as three other main researchers. One of the goals of the network is to maintain a certain gender equilibrium in the teams that will participate, in the decision making process, and in the appointment of researchers.

B.2.7. Planned Recruitment of Early Stage and Experienced Researchers

The TEL@Work consortium will provide researches with funding in order for them to train-through-research in an environment where they can work with other Ph.D. students and senior researchers. They will also be immersed in national and international research co-operation projects as well as in industrial research projects.

The recruitment of early-stage and experienced researchers will be carried out through exchanges between the participants and other research collaboration work across Europe. The exchange of MSc and Ph.D. researchers between the partners will also provide a good alternative solution. Vacancies will be published on respective websites across Europe and on the TEL@Work dissemination website which will be linked to partner websites. Further, a general mailing list will be established according to the different contacts of each partner, and their own mailing lists. Thus, these calls will be broadcast to diverse targets such as PhDs' portals, universities, research centres, and industry.

B.3. References

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