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The Learn@Work Socrates-Minerva Research Project 2005-2007: what did it do and what has happened with it since?

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The Learn@Work Socrates-Minerva Research Project 2005–2007: what did it do and what has happened with it since?

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Abstract: This article provides a summary of the goals, processes, products, evaluation outcomes and lessons learnt from *Learn@Work,* a pan-European research project that involved four higher education providers and one private partner. The project aimed to develop and test online or personal computer (PC)-based materials for induction and support of worker-learners using pilots in the partner countries, as well as to generate usable case studies and theoretical models. This article describes and analyses the project activities, which included the production of a state-of-the-art report on the use of information and communication technologies (ICTs) in workplaces. The design paradigm is described, together with a summary of the particular pilot studies conducted in each country. Specific consideration is given to the Dublin pilots and the design principles applied to the materials used in those pilots. Evaluation findings for the Dublin pilots are elaborated on, together with reflections on the sustainable impact of the project outputs two years later. The article ends with tentative recommendations for enhancing the design of e-induction and e-support for worker-learners, in addition to suggesting possibilities for future research in the area. The authors decided to focus on the project itself and how it has contributed to practice in their own Institution, with less focus on contextual theoretical literature, a review of which is included in the publicly-available state-of-the-art report.

Keywords: induction; support; work-based learning; e-learning

The Learn@Work project

Learn@Work was a research project funded by the European Union's (EU's) *Socrates* program for education and culture under the *Minerva* strand for open and distance learning (ODL) and the use of information and communication technologies (ICTs) in education. The project commenced in October 2005 and concluded in September 2007. The partners in the project were: Glasgow Caledonian University (GCU), Scotland (lead); Aalborg University (AAU), Denmark; Audiovisual Technologies, Informatics & Telecommunications (ATiT), Belgium; Institute for Future Studies (IFS), University of Innsbruck, Austria; and Dublin Institute of Technology (DIT), Ireland. (Information for public access to support this article is available at

www.learnatwork.info – Documentation not available on the project Web site may be requested directly from the authors.)

The project sought to develop and test computer-based and online learning materials for induction and support of worker-learners using pilots in the partner countries, as well as to produce case studies and theoretical models to contribute to both practice and scholarship in this area. The proposal for the project was jointly written by the partners, based on their considerable individual and collective experiences of a range of developments relating to e-learning over the preceding years. It reflected the then current perceived needs of the higher education sector with regard to supporting worker-learners in progressing their jobs and careers through various higher education pathways, initiatives and pilots. Terms such as 'scaffolding' and 'communities of practice' as understood in education and training contexts were taken as understood among all partners, though with local application to the context of the intended pilot groups. The involvement of a private commercial ICT company in the partnership required an extension of the original aim to include induction of workers into the workplace and workplace practices, with no direct connection to higher education practices and cultures. This additional dimension greatly extended the concepts of 'induction' and 'support' for worker-learners, contributing both to the complexity of the project itself and to the range of intended outcomes and products, as well as introducing a persistent degree of 'fuzziness' around the precise intent of the project and the possibility of developing a common 'package', 'resource', 'tool' or 'process' that could be tested in similar situations in each case.

The aim of the research project, as finally agreed on by the partners, was outlined in the final proposal document to the EU (Socrates-Minerva Programme, 2005):

> To enhance the induction and support for learners in the workplace by building on ICT models developed and tested in distance learning and e-learning... adapted and enhanced for a work-based organisation and learning environment... models we will explore include the use of online communities and workgroups to reduce the isolation of the individual learner, [as well as] the development of richer support and 'scaffolding' models and techniques to enable ongoing interaction after the learning event through the creation of sustainable communities of learners. Learn@Work will establish an expert group to develop a 'state of the art' report on current theory and practice. This will inform the design of a common induction resource which will be piloted in partners' work-based learning programmes. Induction is particularly important, equipping the learner with the social and intellectual capital to successfully integrate and participate in knowledge construction independently and collaboratively. From these evaluated pilots a guide for learners and a guide to good practice for developers will be produced for the wider community. These will be disseminated and discussed via the Learn@Work online community and a range of workshops culminating in a high-profile Learn@Work conference event.

This text was informed by feedback from assessors, who were independent experts nominated by the Socrates Technical Assistance Office. The assesors had identified three areas of weaknesses in the formerly submitted pre-proposal document. Firstly, there was a need to build on other similar research projects in Europe generally. Secondly, the target groups of worker-learners for the pilots were vaguely defined. Thirdly, in light of the small numbers of industry partners involved, the assessors questioned the sustainability of the numbers of likely users of the products. These comments resulted in the inclusion of a 'state-of-the-art' review and scoping report prefacing the design and testing of the generic induction resource.

The independent expert assessment of the final aims quoted above likewise identified the dearth of non-contractual partners as a weakness, with implications for sustainability and the degree of potential for further development of collaborative relationships beyond the

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project's lifespan. Additionally, the 'generic' nature of the 'common induction resource' to be produced was identified as being potentially problematic given the need for context-specific scaffolding models at each pilot workplace. Yet another weakness pointed out by the assesors was the western-European orientation of the project and the lack of involvement of new EU member states, at least as pilot sites for testing the initial resources. In retrospect, while this last point transpired to be not particularly significant as the project unfolded, the previous issues, namely the difficulty of designing an appropriate generic resource for multiple contexts and the lack of coherence among pilot partners to inform such a sustainable, generic model, proved to be real shortcomings that had consequences for the processes and products of the project. These aspects are dealt with below, including coverage of the resources and pilot groups used by the various partners and the challenge of forming theoretical/conceptual frameworks to inform the development of 'good practice' guides for work-based e-learners and developers after the project ended.

State-of-the-art report

The content of the state-of-the-art report for the project was contributed by members of an expert group comprising academics from the four higher education institutions, and it was edited by the staff of the consultancy partner company, ATiT. The title of the report – *State of the art work based induction training and support in Europe: collaborative research into supports for induction of new workers using ICTs and supports for induction of worker-learners to e-learning* – reflected the complexity of the project's aims and the tensions in achieving a common understanding precisely what the project was trying to achieve. The aims of the report were stated as "to identify current European good practice in the use of ICT Work Based Learning… [and] to determine the 'state of the art' with an emphasis on how the holistic interaction of pedagogical, organisational, and technical elements aid student engagement, interaction, and long-term learning" (Bijnens & Vanbuel, 2007, p. 4).

Defining 'induction' and 'support'

The exercise of writing the state-of-the-art report exposed the varied meanings partners were attributing to both the terms 'learning at work' and 'induction'. Since a definitional consensus on 'induction', in particular, could not be reached, a continuum of applications was required to enable each partner to locate its technology-enhanced pilots comfortably within its normal education and training activities. If the process of induction training for new employees using ICTs was at one end of the continuum, developing ICT skills among low-skilled workers was mid-way, with the development of ICT packages to 'induct' worker-learners into higher education pedagogies and processes at the opposite end. The following excerpt from the state-of-the-art report illustrates the range of situations and scenarios eventually deemed to be encompassed by the term:

> Learn@Work regards induction (that is, the early supported experience of the educational process) as being particularly critical, but recognises that induction may actually extend throughout the programme. Induction may involve new employees, but may also include established members of the workforce who have to acquire new skills due to job change or transfer. Learning in the workplace implies a wide range of learning situations and learner groups, and consideration has to be given to the different social, cultural and material contexts in which online support and development occurs…. Learn@Work directly tackles the key issue of providing a framework for the induction and support of work based learning using ICT, allowing institutions to look in confidence to new educational processes which include the delivery, communication and assessment of Work Based Learning. (Bijnens & Vanbuel, 2007, p. 9)

The report clearly forecast that achieving a common induction model as promised in the project aims would be problematic, but, more optimistically, that a wide range of

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contextually appropriate products was likely to emerge, thus enhancing rather than limiting the project outputs.

The Learn@Work model of 'scaffolding' induction through ICTs

The project partners sought to develop a common resource for testing in pilot sites with at least 80 worker-learners in total, which proved to be challenging to say the least, especially given the diversity involved. A decision was made to use the Collaborative E-learning Design (CoED) method, developed at AAU (see Table 1), as a means of constructing a shared framework for the design process – that is, a philosophy of values and orientations underpinned by established pedagogical principles for e-learning (Bijnens & Vanbuel, 2007). Three issues were highlighted as being central to the design process: understanding of the learning process in induction; understanding of the specific domain for induction; and understanding of technology and the role it plays, both in design and in the learning process.

The pedagogic design process involved an exercise in which project team members individually ranked up to 15 values and concepts that they deemed relevant to the desired model for the project, followed by two further exercises of reduction until consensus emerged. The eventual 'value statement' for the Learn@Work pedagogic materials incorporated a requirement to consider the following aspects: lifelong learning; workplace learning; motivation/self-motivation; student centredness; blended approaches to delivery; collaborative professional development; and opportunities for individual, applied learning.

The next stage in the design process was to apply the pedagogic values to the specific contexts and domains in two stages. The first stage involved determining the timeline, goals, ways of working, materials and activities to be used in the induction pilot case. The second stage involved illustrating how ICTs were to be used in each element of the 'storyline' of the first stage, and to incorporate such elements as surroundings, equipment, activities, resources and tools from the perspective of the worker-learners. A series of summary poster screens was used to clarify the similarities and differences between the proposed pilots. The poster templates were also intended to be re-used as design tools in the future – a simplified version is illustrated in Table 1.

Table 1: Summary screen for Learn@Work pilot design using CoED tool

Context and goals		
Activity	**Resource**	**Infrastructure**

Selecting the pilot participants

A common set of questions was agreed upon and two or more organisations in each country were identified to serve as pilot testing sites for the induction materials developed by each of the five project partners. The questions were broadly as follows:

1 What sectors of workers are most likely to benefit from the particular materials developed?

2 What levels of competence need to be considered?

3 What access to computers will be required?

4 Will access to broadband (or lack thereof) be a significant factor?

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5 How will the package encourage a culture of online pedagogies?

6 Does the package make a direct link between work and academia?

The pilot participants for each of the project partners are outlined in Table 2.

Table 2: Summary of Learn@Work pilot paticipants and activities

Project partner	Pilot participants	Work sector	Pilot activity	Level of ICT involved	Innovation
GCU, Scotland	Adult learners progressing from diploma to degree	Any worker-learner with diploma	Work-based learning model of academic progression	Online learning activities	Learning contracts
	Rail transport company	Rail workers	Progression degree by work-based learning	Online learning activities	Flexible delivery by work-based learning contracts
ATiT, Belgium	International bank	Financial services staff	Online game-based job coaching	High level of gaming design	Game-based job coaching
	National bus company	Bus drivers	Design and development of CD-/DVD-ROM version of essential job induction information	CD-ROM and DVD-ROM development	Use of CD-ROMs and DVD-ROMs with induction information for dispersed workforce
IFS, Austria	Small and medium-sized enterprises (SMEs)	Workers with low skill levels	Development of group processes for new working culture	Self-paced online activities with supports	Sensitive culture-change processes with online support for vulnerable work sector
	Adult education and Human Resources (HR)	Workplaces and communities	Online training in use of ICT-based social software	High: online course with multimedia	Online training in use of social software
DIT, Ireland	Trainers Network	Trainers in workplaces and training consultants	Capacity building in use of ICTs, e-learning and Virtual Learning Environments (VLEs)	Basic ICTs, online collaboration through email, initial VLE activities	Use of VLE platform for networking purposes in the target sector
	City Council and National Literacy Agency	Outdoor manual workers in city parks	IT literacies and study skills	Basic ICT skills using computer lab activities and CD-ROMs	Handbook and CD-ROMs for worker-learners in ICT and study skills
	Enable Ireland Training Centre	Workers with disabilities	Adapting IT resources for disabled users	Basic to improved ICT skills	Handbook for worker-learners and VLE module made available
	National College of Art and Design	Fine art academics (lecturers) with basic ICT skills	ICT for artists	Basic to improved ICT skills	Handbook and CD-ROMs for worker-learners in ICT; VLE module made available
	Skillnets childcare network	Administrators and childcare workers	Basic ICT	Basic ICT skills	Handbook and CD-ROMs for worker-learners in ICT
AAU, Denmark	Teacher training, upper secondary schools	Teachers and e-learning experts	Training in the Learn@Work CoED tool	Advanced	Applying CoED to pedagogical design
	Teacher training, upper secondary schools	Teachers and e-learning experts	Training in the Learn@Work CoED tool	Advanced	Applying CoED to pedagogical design

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The Dublin pilots

The Dublin pilots were designed to adhere as closely to the agreed aims of the research project as practicable, with the interface between normal work-based learning activities and future participation in tertiary-level programs being a central focus. This both framed the design and implementation of the pilots and channelled attention to the scalability and sustainability of products. The Dublin Learn@Work team (based at DIT) was made up of the three authors of the present article: an academic development expert specialising in adult education and outreach, and two e-learning experts working primarily with academic staff on the design and management aspects of e-learning. This combination had a significant effect on how the team perceived pedagogical design using ICTs in workplaces, and on their views of what constituted appropriate support for worker-learners: was it to be 'train-the-trainer' or 'design for learners'?

To overcome this dilemma, the Dublin team employed a technique of inner and outer circles of experts and critical friends to assist in defining the most sustainable and immediately useful resource to be tested with pilot groups. The outer circle consisted of representatives from FÁS eCollege (a division of the Irish Training & Employment Authority), Skillnets (an enterprise-led support body for learning networks), the National Adult Literacy Agency, the City of Dublin Vocational Education Committee, the Irish Learning Technology Association, Enable Ireland, and the Trainers Network. The outer circle was expected to contribute to the evaluation of the induction materials' suitability for the target groups as well as advising on their future sustainability on an expanded scale and in different socio-cultural contexts. The inner circle was made up of academic colleagues with expertise in e-pedagogies, industry partnerships, apprentice training, Web design, student retention, mature-aged student access and continuing professional development. The main functions of this inner circle included advice on instructional design and content of the materials, online support ('e-accompaniment') of pilot participants and evaluation of all elements of the pilot.

The team isolated three discrete activities within which the circles of experts would contribute differently. These included the section of the state-of-the-art report pertaining specifically to work-based learning and e-learning in Ireland; the development and piloting of an e-learning induction package with a range of potential users; and the improvement and refinement of the package, based on the findings of the pilots, for wider dissemination. It was eventually agreed that the ultimate goal was to create a locally-informed induction and support package for worker-learners with whom the team currently worked, including apprentices, adult learners in their communities, workers engaged in continuing professional development, plus part-time students generally, regardless of their level. The aim was to introduce these potential users to computers at large, to basic ICT skills, to e-learning, to the use of a virtual learning environment (VLE – namely WebCT), as well as to the academic study skills required for sustainable participation in formal, work-based and work-related education and training. Ideally, the final product would also serve as an induction and capacity-building package in the essential skills for successful learning, whether that learning was formally structured or occurring more informally and embedded in work practices.

State-of-the-art and contextual policy discourses

In 2005–2006, the section of the state-of-the-art report on Ireland depicted an employment landscape that was very different to that which exists as this article is being written in mid-2009, with a considerable reduction now in numbers employed in all sectors and at all levels. However, in 2006 there were some 40 software and IT companies in Ireland employing approximately 33,500 workers. A favourable tax regime and the support of inward migration were encouraging the growth of high-technology companies in a national strategy to move to a knowledge economy. However, somewhat unsurprisingly, the profile of work-based learning at the time revealed that new entrants were more likely to be offered training than older workers; that workers with low levels of education were unlikely to receive any training

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opportunities; that part-time and temporary workers rarely received training; and that union members and employees in large companies were more likely to be offered training than vulnerable, contract workers in small and medium-sized enterprises.

It was difficult to map out a precise profile for e-learning in Irish workplaces because of the ambiguity of the term 'e-learning' itself. However, a survey conducted by the Irish branch of the Chartered Institute of Personnel Development (CIPD – O'Donnell & Garavan, 2003) found that large, multi-national companies used generic e-learning as normal practice, as did private non-national organisations. The survey also found that Irish companies preferred face-to-face training or customised e-learning packages over generic products, and that e-packages alone were rarely used. A 2004 study by the Expert Group on Future Skills Needs found that education providers rarely applied adequate theories of instructional design or used sound pedagogical models to underpin their e-learning programs, and were insufficiently aware of what workplaces actually needed from e-learning packages in a rapidly changing economy. They identified the paucity of academic–industry partnerships in e-learning development as a particular weakness. A second CIPD report (Garavan & Carbery, 2003) and a Skillnets survey (Chambers of Commerce of Ireland, 2002, cited in O'Donnell & Garavan, 2003) identified infrastructure, bandwidth, remote wireless access, availability of competent e-expert trainers and traditional workplace cultures as important factors in the future expansion of e-learning. The term 'techno-economic paradigm' was used to capture the need to link economic-development policy with the way formal education and on-the-job training were likely to fuse in the future.

The Dublin e-package

Following extensive consultation with inner and outer circle experts, and considering the expertise of the project team, the Dublin pilots were eventually publicised in the first information brochure as "Capacity Building (Induction) for computer-based learning skills, using ICTs, e-learning, Library Research and Academic Study Skills: pilot projects with worker-learners, apprentices and part-time students". The stated aim of the pilots was to attempt to ascertain the best way of using a combination of face-to-face, paper-based and computer-based learning activities to enable learners at work and part-time students to acquire the skills needed to succeed in formal courses of study in which they were required to use computers and e-learning. Six small groups were initially invited to test the materials in the package, which were presented in three forms: a printed handbook, a CD-ROM and an interactive online program.

E-accompaniers from the circles of experts were nominated to work with each of the groups. The pilot participants were expected to commit up to five hours each to test the materials, some as part of their structured work-based training (apprentices, workers with disabilities, and city park workers), and others as volunteers. The e-accompanier in each case mentored and worked with the group to select content from the material to be pilot tested and to facilitate access to and use of the VLE. The participants needed access to a computer and the Internet, adequate time and a sense of 'adventure'. The model was open and flexible with no predetermined level of learning outcomes other than the overall goals of the project: no fees, no assessments, no credits and no accreditation were involved.

Principles
The Dublin pilots shared a common pedagogical design framework based on a set of agreed principles. Key design features were as follows:

- the design of the environment and tools should be participative and learner-oriented with immediate and future needs considered
- the product should be easy to use and enhance autonomous learning
- the local socio-cultural context should be considered, as well as global developments.

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Design challenges of the Dublin pilots

While the design features listed above were not new and had been used in approaches to adult and community education in Ireland for several decades, they were less prominently emphasised in the way formal education and training activities were conceptualised pedagogically. In particular, they raised challenges relating to how assumptions were made in terms of the 'profile' or 'identity' of the worker-learner in the traditional sense; about how to design for the 'generic' or 'normal' student; about the tendency to describe learning in terms of academic levels, pre-determined learning outcomes, assessment and certification; and finally, about the fact that education and training practitioners often fail to engage with learner support beyond the induction phases (Murphy, O'Rourke & Rooney, 2007; Murphy, Dixon, Lacey, O'Rourke & Rooney, 2008).

A more practical challenge was access to computers and broadband Internet connections in workplaces where ICTs were not commonplace, or where workers were outdoors or mobile. The design team was acutely aware that workplaces are complex sites with intricate subsystems of organisation and myriad interrelationships between them. They took careful note of the advice of the Royal Irish Academy (Fegan *et al*, 2006) about the interface of academic and workplace learning. The Academy's report advocates a principled approach to research projects with clearly articulated expectations for knowledge production and encouragement of strong personal relationships within a culture of trust and mutual understanding. It urges academics to be more tolerant of risk, more adaptable and more nurturing of individuals' attempts at innovation.

The team was also cognisant of changing discourses about the role of higher education institutions in facilitating creation of and access to public knowledge, combined with the growing expectation that they should make research products available for the benefit of society and the economy in a coherent and accountable way. In this policy context the team generated a series of working principles to inform the design, development, evaluation and dissemination of materials, as outlined below (Murphy, 2007b):

- *Principle 1:* The design of the package should be informed by an understanding of both traditional college-based learning and of emerging paradigms of learning through work
- *Principle 2:* The pedagogical approach in delivery of the package should take account of motivation, self-efficacy, affordances and supports in relation to the specific context of users/worker-learners
- *Principle 3:* The design and delivery approach should be open-ended, loosely structured, adaptive, responsive and authentic
- *Principle 4:* The design should be uninhibited by technologies of modularisation, credit systems, assessment or certification
- *Principle 5:* The package should be free from pre-determined learning outcomes pitched at particular levels
- *Principle 6:* The language, style, images and general formatting of the package should take account of best practice in literacy
- *Principle 7:* The package should include paper-based materials, CD materials, computer-based and Internet-based materials so as to minimise inequities of personal resources and workplace affordances
- *Principle 8:* Induction and support should include face-to-face contact at a level appropriate to the needs of the particular worker-learners
- *Principle 9:* Activities within the packages should be adaptable to the authentic context of the worker-learner

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- *Principle 10:* The overall thrust of the package should be towards development of worker-learner capabilities to direct their own sustainable and independent learning and to decide their future learning careers.

(The original principles as reproduced here are perhaps worthy of deeper analysis in the more recent context of this article. However, the authors have not significantly modified or updated them in the interim, and indeed, the revision of the Dublin materials in Summer 2009 continutes to adhere to these principles in most respects.)

Implementation of the Dublin pilots

The Dublin pilots were implemented over a seven-month period in co-operation between DIT staff and the group leaders for each pilot. Table 3 summarises the nature of each pilot group.

Table 3: Dublin pilot summary

Pilot group	Number of participants	Group leader's e-competence	E-accompanier's involvement
Lecturers in Fine Art	5	Basic ICT skills	Initial meeting and weekly follow-up
Independent trainers	4	Basic ICT skills	Initial meeting and weekly follow-up
Public park workers involved in adult basic education	8	Adult basic education tutor with advanced ICT skills	Initial meeting and follow-up every two weeks
Training centre participants	8	ICT trainer	As requested
Childcare workers	6	ICT competent	Initial meeting
Total	**31**		

Needs analyses were conducted with each group to determine the participants' existing skills and desired new skills, and tailored packages were designed accordingly. The Dublin Pilot package included a handbook, a CD-ROM containing interactive resources and a dedicated Internet site with learning materials on the following topics:

- basic computer and keyboarding skills
- basic document production
- using the Internet for research
- email operation
- using WebCT for individual and group communication
- study skills for higher education
- academic writing skills
- library skills
- reflecting on prior learning.

Early evidence showed that the handbook and online materials were more popular than the CD-based materials, particularly with the more ICT-experienced participants. The degree of involvement of team members and group leader e-experts in the pilots varied, with some groups favouring traditional computer-laboratory-style training over independent, self-directed learning activities. In some cases the pilot group participants were highly experienced and had considerable work responsibilities, but possessed little competence with the use of ICTs for learning purposes. In other cases the literacy levels of workers meant that considerable initial support needed to be readily available in a group setting. While these dimensions of adult learning were well understood and facilitated by the pilot

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stakeholders with backgrounds in vocational education and workplace training, they were less familiar to the higher education practitioners. This point went to the heart of the matter of the entire project: who is responsible for induction and support of worker-learners, and how is it best accomplished by higher education providers using ICTs? (The experiences of the Dublin team in this respect and their analysis of related issues are reported in Murphy *et al,* 2007, 2008 as well as in O'Rourke, Murphy & Rooney, 2005.)

Turning the pilots into case studies

Colleagues at AAU (the Danish project partner) took on the task of translating the outcomes and findings from the broad range of pilots across the entire Learn@Work project into usable and coherent case studies (Georgsen & Nyvang, 2007). Tables 4 and 5 (reproduced with slight modifications from an original working document shared at a partner meeting in 2006) summarise the case studies and illustrate their diversity by comparing and constrasting (albeit at a somewhat general level) the induction goals, forms of delivery and role of ICTs in each case.

Table 4: Learn@Work: from pilots to case studies (part 1)

	GCU: BA, Scotland	**GCU: BSc, Scotland**	**DIT, Ireland**	**ATiT–de Lijn, Belgium** (National bus company)	**ATiT–Fortis, Belgium** (International bank)
Learners	18 (Scottish Credit and Qualifications Framework, Level 9)	30–40 (Scottish Credit and Qualifications Framework, Levels 8 & 9)	43 (National Qualifications Authority of Ireland, Levels 6–9)	New employees, administrative staff	Job coaches
Goal of induction	Basic ICT skills for online learning, academic literacy		Basic ICT skills for online learning, academic literacy	Basic knowledge of practices and procedures	Improvement of coaching skills; change of identity from colleague to coach
Form of teaching, modes of delivery	Face-to-face, online		Face-to-face, online	Face-to-face, reading	Paper, online game to use with the trainee
ICT role	VLE, email, Web site – information, communication		VLE, email, Web site – information, communication	DVD, CD-ROM	Game

An analytical framework or taxonomy was proposed to represent the levels of complexity and underpinning theories of learning that seem to have been applied in the different pilots. The taxonomy included aspects related to the goals of the induction, the nature of the induction activities, the intent to effect change, and the extent of the learning gap to be addressed. Georgsen and Nyvang plotted the pilot evaluation data using two vertical and horizontal axes, illustrating the absolute scale related to goals and activities and the relative relationship of the pilots in relation to addressing learning gaps and effecting change (see Figures 1 and 2), which they advised should be used in relation to CoED design tool outcomes for each pilot.

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Table 5: Learn@Work: from pilots to case studies (part 2)

	IFS–GLIA, Austria (Workplace learning consultancy)	**IFS–AMG Austria** (Work-based learning consultancy)	**AAU: high schools, Denmark**	**AAU: NVU, Denmark**
Learners	10 trainers in adult education, teachers, HR managers	330 low-skilled workers	3 x 3 (4) upper secondary school teachers	Low-skilled workers (eg builders/ labourers)
Goal of induction	Better teaching and training skills, focus on use of social software	A new learning culture within the participating organisations	Increased practical and theoretical knowledge about ICT in teaching and learning	Increased ability to use the ICT involved in the shovel and scaffold courses
Form of teaching, modes of delivery	Face-to-face, online	Face-to-face, workshops, role plays, acting, etc	Face-to-face, online knowledge sharing and collaboration	Face-to-face, online exercises
ICT role	Online learning, social software	Minor role	LMS for online activities	LMS for online activities/materials

In Figure 1, the pilots are plotted on a horizontal continuum from induction on specific tools, tasks and techniques to activities and strategies that strive to develop worker-learners' capability to learn independently. The vertical axis represents the emphasis on individual (ie self-study/reading) versus collaborative (group-based) learning activities. The diagram highlights the tensions among the espoused pedagogical models of project partners and stakeholders, as well as the disparity in their understanding of what constituted 'induction'.

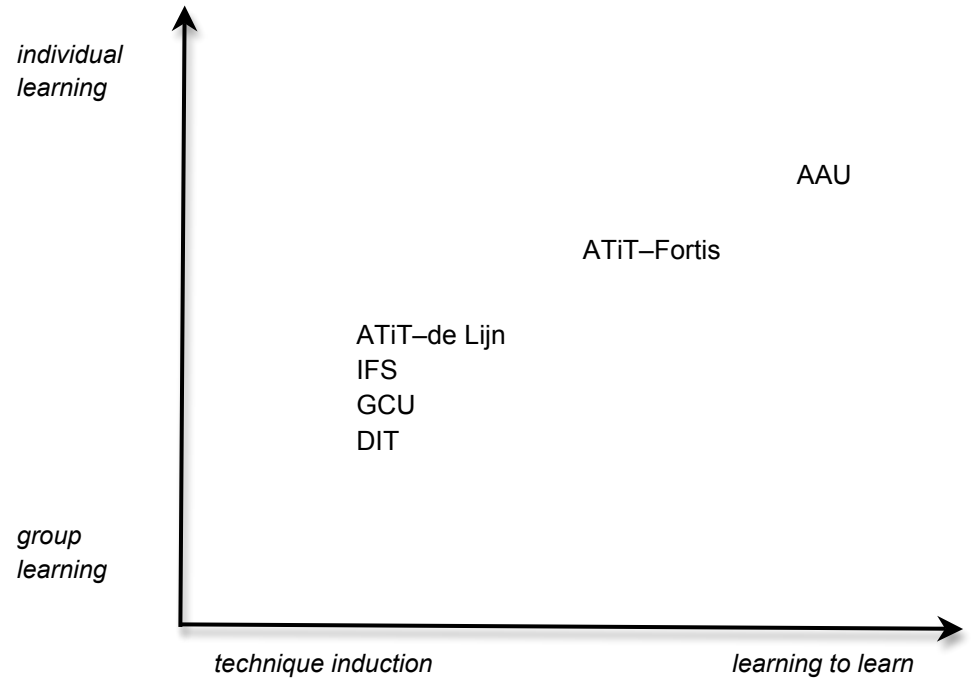

Figure 1: Comparison of pilots: goals and activities

An attempt is made in Figure 2 to illustrate the conceptual understanding that was reached between the project partners regarding the impact of the learning activities and processes

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on the worker being inducted – the 'inductee' – and the impact on the 'inducter' or facilitator/trainer in each case. One possible interpretation here is that traditional models of induction as 'transmission of training' have little impact on either the trainer or worker – this perspective paints quite an alarming picture for those interested in return on investment! A more optimistic interpretation would be that increasing self-efficacy through the development of autonomous learning capacities is more effective and more sustainable in the long run. Both interpretations have considerable significance for the design of online or ICT-based induction and support packages to be used with minimal face-to-face support – a point central to both the original and revised materials from the Dublin pilots.

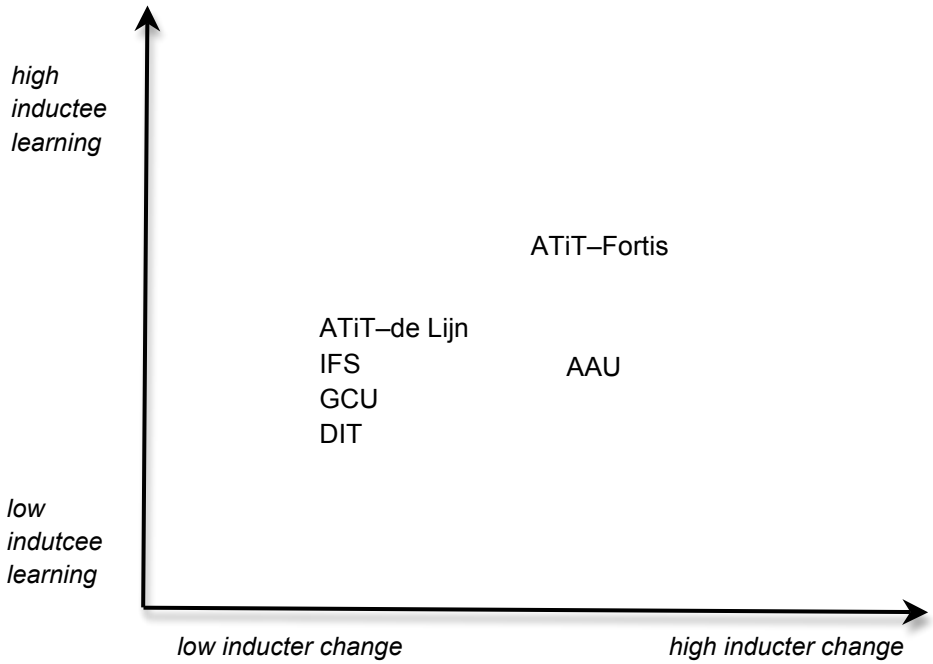

Figure 2: Comparison of Learn@Work pilots: change intent and learning gap

A guide for work-based learners using e-learning as complementary support (Learn@Work, 2007a), as well as one for e-learning developers responsible for designing content and activities for these learners (Learn@Work, 2007b), was produced from a combination of the Dublin and Glasgow materials. The two guides are available for public download from the project Web site, and can be customised to suit local needs and contexts (although an analysis of the principles in the guides is beyond the scope of the present article). The developer guide also includes a set of useful additional, supporting online resources.

Final evaluation findings from the Dublin pilots

The Dublin pilots were evaluated by the circles of experts and critical friends, the pilot leaders and the project team, and the overall findings yielded were positive. Pilot leaders and participants particularly liked the strong e-learning elements, which they perceived to be useful and effective in the provision of induction and support. They also appreciated the focus on worker-learners themselves, and the potential for re-use and re-purposing of the developed materials for other situations in the future. Weaknesses indentified by the pilot leaders included the difficulty of addressing all the needs of individual worker-learners in a single package; the need for high levels of support from e-accompaniers; and the reliance on ready and continuous access to ICTs, particularly broadband Internet connections.

In conducting the evaluation of the Learn@Work project overall, much focus was placed on the issue of sustainability, especially in light of the aforementioned feedback that the original project proposal received from the expert assessors nominated by the Socrates program.

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Aspects of the project that were evaluated as 'sustainable' included the materials themselves, given their applicability to range of contexts; the concept of induction and support; the guides produced; the data in the state-of-the-art reports as a benchmark for future research and analysis; and the case studies and networks generated by the project. Evaluation of the project by the EU was also positive, with follow-up being performed in relation to dissemination of materials and analytical tools. The EU commenced a further ex-post evaluation of the project in Autumn 2009.

Reflections, two years on

For the purpose of this article, and considering the likely global readership, it would be useful – although prohibitive – to permit individual reflections from the range of persons involved in the Dublin pilots and the other partner pilots. What the Dublin team can report with certainty and in consensus, however, is the sustained interest in the materials – handbook and online versions in particular – since the project's conclusion. There has been widespread usage in DIT of the paper-based handbook, as well as the accompanying online version, for adult learners and new postgraduate students. Versions have been produced for community-based education, for apprentices, for off-campus learners, and for use as resources at a broader program level. It would be fair to say that there was initially strong interest in the ICT sections, with interest increasing more recently in the study skills and academic writing skills components. Additionally, there is now much interest in reflection on prior learning and preparation of career portfolios, possibly an indicator of the negative employment landscape and the increased need for re-skilling.

As the interactive version of the materials was hosted in a password-protected environment, it was not used in the period immediately following the pilot, although many of the actual learning objects were adapted to other contexts where they continue to be used. The Dublin team is currently in the process of updating the materials using funding from a national project related to learning in employment. Their intention is to make the revised resources available without restriction on the Institute's Web site to workers seeking to improve their life chances through up-skilling and capacity building, especially amid the downturn in the local and global economies. The team also intends to disseminate the revised materials through their circles of pilot project experts and their organisations.

In striving to achieve better e-practice by higher education practitioners for worker-learners, the following emerging design principles/guidelines (adapted from Murphy, 2007a) may still be worthy of consideration and discussion. These guidelines are highly practical in orientation, but often difficult to achieve:

- e-induction and support materials may have a generic core, but will inevitably need to be re-designed and tailored to suit the requirements of the particular program of study or training context
- materials should use plain language, free from jargon and assumptions about learners
- materials need to be 'adult-friendly', useful for any level of study from initial apprenticeship through to graduate level
- the focus should be on capacity development for *learning* (ie 'learning to learn') rather than solely on achievement of curricular outcomes
- pedagogical and learning design models should draw on *adult learning theory* in addition to standard instructional design theory
- e-designers should offer a theoretical defence of their design principles and pedagogical models to academic staff who actually need to implement such designs
- e-designers will benefit from field-testing their proposals with 'real' worker-learners prior to proposing them to program teams.

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Where to next for Learn@Work?

The evaluation of the overall Learn@Work project identified areas that could be immediately developed to a further level. These included, for example, game-based and social-software-based induction and support strategies to assist workers entering a new industry, job role or working culture, as piloted by the Belgian and Austrian partners. The Scottish and Irish partners focused on induction and support for worker-learners in relation to higher education and lifelong learning, and here, too, there was an identified need for further research into how academic practictioners and e-learning designers conceive of the needs and characteristics of the worker-learner (Murphy *et al,* 2008). Closely related were a recognition of the growing role and importance of ICTs in the workplace, the need to further understand the process of induction and support in contemporary workplaces and the question of how these processes might interface with academic processes. Possible future research possibilities were identified in exploring how the models could be scaled up or generalised without losing their local significance and, indeed, how such research projects might seek to influence policy at the local, national and international levels.

What has not yet become clear is how induction and support models travel well across continents, with different work practices and traditions, different socio-economic and socio-political conditions and different expectations from higher education providers and government regulators. Where policy, cultures and availability of technology are supportive and conducive of e-induction and e-support, the task is relatively easy. Where inequities of ICT access and/or competency levels are a significant feature, care must be taken not to widen the digital divide. With this concern at the fore, DIT has a long tradition of attempting to do its part to deliver ICT access, as well as providing structured support and training, to the local communities it serves. The Learn@Work materials will continue to be just one small part of such a strategy, and it is important not to lose sight of the human element in the generation of sustainable cultural, economic and social capital.

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