

Position Paper Lifelong Learning (LLL)

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Mike Kendall (UK)
Brian Samways (UK)
Jan Wibe (N)

Tom van Weert (NL), Editor



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Content

Summary	5
Lifelong Learning as an issue	5
Who are ‘students’ in Lifelong Learning?	6
What is different in Lifelong Learning?	6
Role of Information and Communication Technology (ICT)	6
Virtual Learning Organisations and Communities	7
Research questions	7
Research question A	7
Research question B	7
Research question C	7
Design, development and implementation	8
Design for sustainable development and implementation	8
Countries without a knowledge intensive economy	8
IFIP Technical Committee 3 on Education	9
Working conference on Lifelong Learning	9
Political agenda	11
Lifelong Learning	11
Lifelong Learning strategies	11
Conclusion	12
Background: Economic, social and cultural developments	13
Economic developments	13
Shortage of workers	13
Knowledge workers create knowledge	13
Skills workers apply knowledge	13
Knowledge has an expiration date	13
From supply to demand	13
Lifelong Learning is an <i>economic issue</i>	14
Social developments	14
Part-time work during initial education	14
Changing nature of work	14
Disappearing transition between initial education and working life	14
We want (to do) it now	14
We want to do more than one task at a time	14
We want it flexible	14
We want it personal and meaningful	15
Lifelong Learning is a <i>social issue</i>	15
Lifelong Learning is a <i>civic issue</i>	15
Lifelong Learning is a <i>personal issue</i>	15
Cultural developments	15
A ‘zap’ culture	15
Ubiquitous mobile communication (“where are you?”)	15
Video and gaming	15
PC at home and surfing the globe	16
We create our own cultures and communities	16
Lifelong Learning is a <i>cultural issue</i>	16
Conclusion	16
Who are the students in Lifelong Learning?	17
Employment related perspective	17
Knowledge worker as knowledge creator	17
Skills worker as knowledge applier	17
Worker who needs reorientation	17
Social and civic perspective	18
Local community member	18
Civic community member	18

Hobby or interest community member	18
Personal perspective	18
Student in the educational system	18
Learners on their own	18
Age groups	18
Conclusion	19
What is different in Lifelong Learning?	21
Characteristics of Lifelong Learning	21
Frictions with current organisation of education	21
Role of institutions	22
Conclusion	22
Role of Information and Communication Technology (ICT)	23
Lifelong Learning is an Information and Communication Technology issue	23
Conclusion	23
Virtual Learning Organisations and Communities	25
Working = Learning	25
Living = Learning	25
On the other hand living & learning come together in Lifelong Learning	25
Conclusion	25
Research agenda	27
Research focus	27
How to organise that people can lifelong learn effectively?	27
Research questions	27
Research question A	27
Research question B	27
Research question C	28
Design, development and implementation	28
Design for sustainable development and implementation	28
Countries without a knowledge intensive economy	28
The role of the International Federation for Information Processing (IFIP)	29
IFIP Technical Committee 3 on Education	29
Lifelong Learning in the Digital Age	29
Working track on Lifelong Learning	29
Input to the working track	29
References	31

Summary

This position paper tries to identify the **main research questions** which have to be answered by education in order to effectively address Lifelong Learning as an issue.

Lifelong Learning as an issue

Lifelong Learning is a *political issue*:

This is illustrated by the high priority given to Lifelong Learning by the European Council [1]. In this context Lifelong learning is defined as "**all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social and/or employment-related perspective.**"

This definition implies that Lifelong Learning is about acquiring and updating all kinds of abilities, interests, knowledge and qualifications that will enable each citizen to adapt to the knowledge-based society and actively participate in all spheres of social and economic life, taking more control of his or her future. It values all forms of learning, including: formal learning, such as a degree course followed at university; non-formal learning, such as vocational skills acquired at the workplace; and informal learning, such as inter-generational learning.

The European Community has identified six essential elements of Lifelong Learning strategies:

1. Partnership working,
2. Insight into the demand for learning,
3. Adequate resourcing,
4. Facilitating access to learning opportunities,
5. Creating a learning culture
6. Striving for excellence.

Lifelong Learning is an *economic issue*:

Economies are changing: In knowledge intensive economies the demand for competent knowledge workers and skills workers is increasing. Supply is not in balance with the demand. The main economic importance of knowledge workers in knowledge intensive economies derives from innovation through knowledge creation; the main economic importance of skills workers from innovation in knowledge application. To keep up with economic demands both groups have to enhance their competence in 'learning teams'. Learning is integrated into the work, learning on the job. This constitutes Lifelong Learning from the employment related perspective.

Lifelong Learning is a *social issue*:

Social changes occur because of part-time work during initial education, of disappearing transition between initial education and working life, and of change as a second nature in work. Also new technological possibilities such as mobile phones play a role. We want (to do) it now, we want to do more at one time, we want it flexible and we want it personal and meaningful. We do not want to wait for general supply, we demand it now and want it personalised. This also applies to our social learning where 'learning communities' appear, be it local communities or communities of hobby or interest, including citizenship communities (civic life).

Lifelong Learning is a *civic issue*:

New opportunities for active participation in society are needed, empowering citizens to increase their influence over social, cultural and economic factors, locally and further a field, as ICT permits remote participation. Lifelong Learning in citizenship communities is a means to this active participation: "Just as learning is being taken to the learner enhanced by the use of ICT, so is citizenship with developments in electronic governance." [2]

Lifelong Learning is a *cultural issue*:

We have moved to a 'zap' culture with television, local satellite and webTV, that now is amplified by Information and Communication Technology. Small chunks of information, or entertainment, build up the

mosaic of our cultural experiences, a culture of 'blips'. Ubiquitous mobile communication ("where are you?"), video and gaming, surfing the globe, all allow us to create our own cultural communities.

Lifelong Learning is a *personal issue*:

Changes in economic and social life require on-going personal development. In *personal life* a person may be a 'lonely' learner. But economic, social and cultural life require 'team learning' or 'community learning'. 'Lone wolf' learners may be able to 'help themselves', but have to be drawn into teams or communities. These 'lone wolf' learners fall into several age groups. Attention must be given to reaching all ages.

Lifelong Learning is an *Information and Communication Technology issue*:

Lifelong learning provides new opportunities for active participation in society, empowering citizens to increase their influence over social, cultural and economic factors, locally and further a field, as ICT permits remote participation.

Economic, social and cultural developments all point in a direction where personalised, flexible learning will be part of our economic, democratic, cultural and social life. Just as at the work place where its use is integrated, Information and Communication Technology will play an important enabling role. And ICT is able to play this role because also its integration in our social and cultural life is just a matter of time. It can furthermore be noted that: "ICT is a major component in merging personal, private, leisure and work time".

Who are 'students' in Lifelong Learning?

From the **employment-related perspective** 'students' in Lifelong Learning are the knowledge workers (knowledge creators) and the skills workers (knowledge appliers). Both groups learn on the job in 'learning teams'. For knowledge workers this is by definition. However for the skills worker this perhaps has to be organised when learning is not an integral part of the work.

From the **social and civic perspective** 'students' are people learning in 'learning communities'. These can be local communities or communities of hobby or interest, including citizenship communities.

From the **personal perspective** 'students' can be 'lone wolf' learners who are able to help themselves. 'Team learning' and 'community learning' are important to them as these are part of their employment-related or social life. 'Lone wolf' learners may be imminently able to make use of ICT to organise themselves as members of self-sustaining learning teams or learning communities.

These 'students' fall into several age groups. Attention must be given that people in all ages are reached.

What is different in Lifelong Learning?

Lifelong Learning is demand driven, flexible learning which takes place in an **employment-related perspective** (knowledge workers or skills workers), in a **social or civic perspective** (local community member, citizen, member of interest group) or a **personal perspective** ('lone wolf' learner). It is organised in 'Learning Teams' or 'Learning Communities'. The difference between a 'Learning Team' and a 'Learning Community' is that teams operate in a given organisational, social and cultural environment, and that communities mainly organise themselves.

Educational institutions will have to change. Important issues in this change are: technology access of learners, how to reach excluded and hard to reach groups and individuals. But also the issue of added value: With virtual learning organisations springing up - community lead and bottom-up created, short-term, informal, and non-institutional - where lies the added value of an educational institution?

Role of Information and Communication Technology (ICT)

In Lifelong Learning the role of ICT is one of empowerment, enhancement of creativity and support.

The current technology on our desktop, in our homes and in our community provides a powerful toolbox for support of Lifelong Learning. What is needed is effective organisation of its use, not more technology. No elaborate electronic learning environments are needed to be effective in Lifelong Learning. Important applications deal with:

- Personal communication (finding and interacting with resources, organisations and people),
- Organisation of activities (planning, scheduling, monitoring),
- Information management (organising, storing, creating and sharing of information),
- Organisation of learning team and learning community work (group work).

These applications can be used at work, in the home or at any other location providing access, including mobile devices. Use of the applications is individually and in groups. And anywhere, anytime, to meet ongoing needs.

Virtual Learning Organisations and Communities

It may be concluded that Lifelong Learning is demand driven, flexible learning which takes place in different perspectives:

- **employment-related perspective** (knowledge workers or skills workers),
- **social or civic perspective** life (local community member, citizen, member of interest group)
- **personal perspective** ('lone wolf' learner).

Lifelong Learning may be organised in 'Learning Teams' or 'Learning Communities'. The difference between a 'Learning Team' and a 'Learning Community' is that teams operate in a given organisational, social and cultural environment, and that communities mainly organise themselves.

Virtual Learning Organisations (organising Learning Teams for Working = Learning) and Virtual Learning Communities (organising Learning Communities for Living = Learning) may provide the organisational setting for Lifelong Learning. In these organisations and communities ICT is a necessary and integrated facilitator.

Research questions

From the analysis in this position paper follow three main research questions to be addressed by the IFIP Lifelong Learning Community.

Research question A

How to design, develop and implement

Virtual Learning Organisations

to facilitate

Working = Learning

which is 'Just in Time', has a 'Just Fit' and provides flexibility in time and place?

Support of Information and Communication Technology (ICT) is essential and will be integrated into these organisations (virtuality).

Research question B

How to design, develop and implement

Virtual Learning Communities

to facilitate

Living = Learning

which is 'Just in Time', has a 'Just Fit' and provides flexibility in time and place?

Support of Information and Communication Technology (ICT) is essential and will be integrated into these communities (virtuality).

Research question C

On the background of these two main research questions there is a third main research question:

How to enable learning or, in other words, how to enable knowledge creation [18] in these ICT-supported Virtual (Learning) Organisations and Communities?

Design, development and implementation

Design, development and implementation of Lifelong Learning Organisations for working has to be done in a learning process in which both employers and educational practitioners (students, teachers and developers) work together on action oriented research and innovation. This will be a complex learning process which merits the attention of a (virtual) learning community.

Design, development and development of Lifelong Learning Communities for living has to be done in a learning process in which both society stakeholders and educational practitioners (students, teachers and developers) work together on action oriented research and innovation. This will be a complex learning process which merits the attention of a (virtual) learning community.

Design for sustainable development and implementation

Special emphasis should be given to sustainable development: how to design learning environments that will continue to function in an effective and sustainable way after initial creation within the boundary conditions set by higher education itself. Design should take this into account.

Countries without a knowledge intensive economy

Special attention should be given to the relevance of design, development and implementation of Lifelong Learning in countries which do not (yet) have a knowledge intensive economy. Not only economic factors, but particularly social, cultural, civic and political factors will have to be taken into account, just as availability of ICT-resources.

IFIP Technical Committee 3 on Education

Technical Committee 3 of the International Federation for Information Processing (IFIP) aims to establish a (virtual) learning community for Lifelong Learning. A first activity of this learning community will be a working meeting in the form of a working conference in 7 – 11 July 2003, Pori, Finland. Next to other invited papers this Lifelong Learning position document is input to this working conference and will be reviewed at the conference. Participation in this working conference is on invitation only.

Within IFIP Technical Committee 3 (Education) there is a tradition of working conferences. Through their special organisational features these events allow in-depth treatment of the conference themes, in-depth discussions, but also informal exchange of ideas and experiences. The working conferences are designed in such a way as to encourage establishment of new professional and personal relationships. The working conferences are a stimulating experience because of the intensive work done by experts in the field coming from all over the world. Results of the working conferences are shared with the international scientific community through the proceedings which are usually published by Kluwer Academic Publishers. Results are also disseminated through the IFIP network.

After the results of this first activity of the learning community IFIP TC3 will decide whether it is feasible to formalise the learning community into an IFIP TC3 Working Group.

Working conference on Lifelong Learning

This position paper has been prepared by the IFIP Technical Committee 3 Taskforce on Lifelong Learning. Authors who want to participate in the 2003 Working Conference on Lifelong Learning are invited to prepare a response to this position paper in the form of an abstract. The Programme Committee will review these abstracts and select authors with the aim to create a rich and high quality conference programme. Both author responses which agree or disagree with the position paper, are invited. Selected authors will be invited to prepare a 3000 word paper on the basis of their submitted abstract which will be published in the proceedings, presumably by Kluwer Academic Publishers.

Are you interested?

If you are interested in this working conference, you may contact the Chair of the Programme Committee, Brian Samways, Fax +44 121 303 8002, e-mail: Brian_Samways@birmingham.gov.uk . You will then be informed about the closing date for sending in abstracts.

Political agenda

The scale of current economic and social change, the rapid transition to a knowledge-based society and demographic pressures resulting from an ageing population in the industrialised countries are all challenges which demand political attention and a new approach to education and training. This is illustrated by the high priority given to Lifelong Learning in the context of these challenges by meetings of the European Council [1]. These meetings resulted in the communication of the mandate of the Feira European Council. In this communication (Memorandum of Lifelong Learning) Lifelong learning is defined as "**all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social and/or employment-related perspective.**"

Lifelong Learning

The definition given implies that Lifelong Learning is about acquiring and updating all kinds of abilities, interests, knowledge and qualifications from the pre-school years to post-retirement. It promotes the development of knowledge and competences that will enable each citizen to adapt to the knowledge-based society and actively participate in all spheres of social and economic life, taking more control of his or her future. It values all forms of learning, including: formal learning, such as a degree course followed at university; non-formal learning, such as vocational skills acquired at the workplace; and informal learning, such as inter-generational learning, for example where parents learn to use ICT through their children, or learning how to play an instrument together with friends.

In Lifelong Learning learning opportunities have to be available to all citizens on an ongoing basis. In practice this should mean that citizens each have individual learning pathways, suitable to their needs and interests at all stages of their lives. The content of learning, the way learning is accessed, and where it takes place may vary depending on the learner and their learning requirements.

Lifelong learning is also about providing "second chances" to update basic skills and also offering learning opportunities at more advanced levels. All this means that formal systems of provision need to become much more open and flexible, so that such opportunities can truly be tailored to the needs of the learner, or indeed the potential learner.

Lifelong learning provides new opportunities for active participation in society, empowering citizens to increase their influence over social, cultural and economic factors, locally and further a field, as ICT permits remote participation. "Just as learning is being taken to the learner enhanced by the use of ICT, so is citizenship with developments in electronic governance." [2]

Lifelong Learning strategies

Coherent and comprehensive lifelong learning strategies should provide the building blocks to implement Lifelong Learning. What are the tools that can better integrate learning environments and open up access for all European citizens to good quality learning opportunities appropriate to their needs at any time of life?

The consultation which followed the [Memorandum on Lifelong Learning](#), identified six essential elements for coherent and comprehensive lifelong learning strategies:

1. "**Partnership working**, not only between decision-making levels (e.g. national, regional and local) but also between public authorities and education service providers (schools, universities, etc.), the business sector and the social partners, local associations, vocational guidance services, research centres, etc. "
2. "**Insight into the demand for learning** in the knowledge-based society – which will entail redefining basic skills, to include for instance the new information and communication technologies. Analyses should take into account foreseeable labour market trends. "
3. "**Adequate resourcing**, involving a substantial increase in public and private investment in learning. This does not only imply substantially increasing public budgets, but also ensuring the effective allocation of existing resources and encouraging new forms of investment. Investment in human capital is important at all points in the economic cycle; skills gaps and shortages can certainly co-exist with unemployment."
4. "**Facilitating access to learning opportunities** by making them more visible, introducing new provision and removing obstacles to access, for example through the creation of more local learning centres. Special efforts are necessary in this context for different groups such as ethnic minorities, people with disabilities or people living in rural areas. "

5. **“Creating a learning culture** by giving learning a higher profile, both in terms of image and by providing incentives for the people most reticent to opt for learning.”
6. **“Striving for excellence** through the introduction of quality control and indicators to measure progress. In concrete terms, provision must be made for standards, guidelines and mechanisms whereby achievements can be recognised and rewarded.”

Conclusion

In the European Community Lifelong Learning is defined as "**all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social and/or employment-related perspective.** [1]"

This definition implies that Lifelong Learning is about acquiring and updating all kinds of abilities, interests, knowledge and qualifications that will enable each citizen to adapt to the knowledge-based society and actively participate in all spheres of social and economic life, taking more control of his or her future. It values all forms of learning, including: formal learning, such as a degree course followed at university; non-formal learning, such as vocational skills acquired at the workplace; and informal learning, such as inter-generational learning.

The European Community has identified six essential elements of Lifelong Learning strategies:

7. **Partnership working,**
8. **Insight into the demand for learning,**
9. **Adequate resourcing,**
10. **Facilitating access to learning opportunities,**
11. **Creating a learning culture**
12. **Striving for excellence.**

Background: Economic, social and cultural developments

Economic developments

Shortage of workers

In knowledge intensive economies the demand for educated personnel is increasing. Supply is not in balance with the demand. In the Netherlands, for example, in 2003 a shortage of 200.000 higher educated workers is expected [4] developing into an expected shortage of 400.000 in 2007. The concept of Lifelong Learning offers a promise of reducing this shortage of workers by helping people to re-enter the labour market or to change jobs. In western economies with an aging population this shortage of workers is the more urgent, because the total number of workers in the economy is decreasing, with enormous effects on the national product.

Knowledge workers create knowledge

Knowledge workers are found in innovative businesses and organisations, including communities where people are creating community capital and action. To keep up with demands and competition these innovative businesses and organisations create new knowledge in their domain. A knowledge worker therefore is also a knowledge creator [5]. This knowledge work is teamwork, because the knowledge needed in many cases is multi-disciplinary, calling on formal and tacit knowledge. So for a knowledge worker also other “competencies” play a role: such as working in a multi-disciplinary team and multi-disciplinary problem solving. Knowledge workers are part of a ‘learning team’. Knowledge workers in most cases develop a knowledge career, whatever discipline they are specialised in, moving from executive to strategic roles.

In fact knowledge workers are the embodiment of Lifelong Learning in economic life.

Skills workers apply knowledge

Skills workers use their skills in businesses and organisations to produce goods or services. Their skill is in applying knowledge. Knowledge creation may not be as much integrated in their work. However, skills workers need to adapt their skills to new situations. They also in many cases work in teams and learning on the job is also for them the best way to learn new skills. This learning may be not as much integrated in their normal working life as is the case for knowledge workers and updating of skills may have to be organised separately. This updating should be organised close to the job and in many cases for the whole team. The team then also is a ‘learning team’.

Knowledge has an expiration date

Knowledge has become like fish: within a short period it has lost its freshness and cannot be used anymore. Or in other words: in economic life development of new knowledge, or learning, has become a ‘must’. “In the old economy, the basic competences of the industrial worker, bricklayer, or bus driver were relatively stable. True, you might have applied these competencies to different situations, such as different construction sites, but the learning component of your labour was small. In the new economy, the learning component of work becomes huge. Consider the researcher looking for a genetic basis for schizophrenia, the software developer creating a new multimedia application, the manager responsible for corporate planning in a bank, the consultant assessing a client’s markets, the entrepreneur starting up a new business, or the teaching assistant in a community college, the farmer with new fertiliser and crop management, the shop assistant with new products and tills, the engineering with a new computer aided manufacturing process.. Think about your own work. Work and learning overlap for a massive component of the workforce.” [6, page 198]

From supply to demand

Where the usefulness of knowledge expires, supply of knowledge through education also becomes less useful. Learning in initial education makes sense when the knowledge offered is relatively stable. However, in the new economic circumstances a demand for ‘Just in Time’ education is seen to develop, education on demand. And the ‘customer’ demands that the content of the education has a ‘Just Fit’. And because business is going on as usual during learning education has to be flexible in time and place. Education has as yet not found an answer to these demands. As Davis and Botkin put it in their book *The monster under the bed*: “With the move from an agrarian to an industrial economy, the small rural schoolhouse was supplanted by the big brick urban schoolhouse. Four decades

ago we began to move to another economy, but we have yet to develop a new educational paradigm, let alone create the ‘schoolhouse’ of the future, which may be neither school, nor house.” [6, page 199]

It is clear that Information and Communication Technology (ICT), or ‘the computer’, plays an important role in this economic change from supply to demand. Industry and business would not be able to satisfy demands in an effective way if the power of ICT was not available.

Lifelong Learning is an *economic issue*

Economies are changing: In knowledge intensive economies the demand for competent knowledge workers and skills workers is increasing. Supply is not in balance with the demand. The main economic importance of knowledge workers in knowledge intensive economies derives from innovation through knowledge creation; the main economic importance of skills workers from innovation in knowledge application. To keep up with economic demands both groups have to enhance their competence in ‘learning teams’. Learning is integrated into the work, learning on the job. This constitutes Lifelong Learning from the employment related perspective.

Social developments

Part-time work during initial education

In societies which are economically striving, part-time work during initial education is becoming more and more popular. Economic circumstances provide the opportunity, students in our society produce the demand. Full-time studies are becoming part-time studies in practice. New forms of education are springing up in which working and studying are formally combined.

Changing nature of work

The changing economic circumstances have resulted in increased part-time work, the need to have multiple jobs and an increased frequency of job change – we no longer have a job, or skill for life. Following changing economic circumstances the nature of our work changes many times during our life.

Disappearing transition between initial education and working life

But also the transition from initial education to working life is becoming less clear cut: “A spreading of education over a wider period of working life is...becoming a reality. In some countries we can see this emerging quite clearly: in the transition phase.” [7, page 22]. In this transition phase student will already work in a profession while still studying to qualify for that profession.

We want (to do) it now

A few decades ago our society supplied opportunities which could be used or not. Today we demand those opportunities now, waiting is for dummies. We want money now, so banks have provided money dispensers in the wall. The same happens in the assurance business. We want travel assurance today, not tomorrow when we are already gone. Information and Communication Technology (ICT) is again behind all this, without ICT our demands could not be satisfied. And we use ICT in our social life, sometimes in disguised form, sometimes clearly recognised. We do not want to be frustrated by our inability to do something, to achieve a personal and/or group goal.

We want to do more than one task at a time

We were used to knowing the task we were going to do at any one time and got on with it. Now we have multiple channels of communication allowing the completion of simultaneous task, such as watching television, chatting on the computer and on the phone: a capability of the one machine. The boundaries between tasks have become more fuzzy, just as their start and finish.

We want it flexible

In earlier days you had to go to your own bank to get money. But we want money now, wherever we are, so we can now also use the money dispenser of other banks. We want advice now, so the consultant is also available in evenings. We want to buy something now, so shops are open on Sunday or even 24 hours a day. We also want

whatever it is available in the chunks that we determine, sometimes to the detriment of someone of the overall coherence of a product or service, as seen by the supplier.

We want it personal and meaningful

And as we move from supply of opportunities, where you had to take what was offered, to demand of opportunities we want these opportunities to be personally tailored and meaningful to us. What is good for my neighbour is not good enough for me. My advisor has to take account of my personal situation and advise must be meaningful to me, not necessarily to others.

Lifelong Learning is a *social issue*

Social changes occur because of part-time work during initial education, of disappearing transition between initial education and working life, and of change as a second nature in work. Also new technological possibilities such as mobile phones play a role. We want (to do) it now, we want to do more at one time, we want it flexible and we want it personal and meaningful. We do not want to wait for general supply, we demand it now and want it personalised. This also applies to our social learning where 'learning communities' appear, be it local communities or communities of hobby or interest, including citizenship communities (civic life).

Lifelong Learning is a *civic issue*

New opportunities for active participation in society are needed, empowering citizens to increase their influence over social, cultural and economic factors, locally and further a field, as ICT permits remote participation. Lifelong Learning in citizenship communities is a means to this active participation: "Just as learning is being taken to the learner enhanced by the use of ICT, so is citizenship with developments in electronic governance." [2]

Lifelong Learning is a *personal issue*

Changes in economic and social life require on-going personal development. In *personal life* a person may be a 'lonely' learner. But economic, social and cultural life require 'team learning' or 'community learning'. 'Lone wolf' learners may be able to 'help themselves', but have to be drawn into teams or communities. These 'lone wolf' learners fall into several age groups. Attention must be given to reaching all ages.

Cultural developments

In technology rich societies Information and Communication Technology is getting more and more integrated. Just as electricity brought a revolution to our culture, ICT is doing the same, with a diverse range of technologies having an increasing impact across different societies.

A 'zap' culture

Television, with local satellite and WebTV, has contributed to a 'zap' culture that now is amplified by Information and Communication Technology. Small chunks of information, or entertainment, build up the mosaic of our cultural experiences, a culture of 'blips'.

Ubiquitous mobile communication ("where are you?")

The mobile telephone adds to our 'zap' culture: we can call whoever we want wherever we are for conversations that we in other times would have had over a drink. But we can also do business with our bank manager, or order a pizza for dinner. It took only a short time for the mobile phone to become integrated in our economic and social life. And its Short Message Service (SMS) has enriched our cultural life with new symbolic language.

Video and gaming

Through Virtual Reality ICT allows you to move through "a world without limits where the frontier between fact and fiction is fuzzy. The more senses are involved the more real is this Virtual Reality. Here digitalisation is the 'most extreme' form of abstraction. It is learning by experience (but there is a risk involved). It enables money and time efficient creativity." [8]. Video and Internet gaming is quickly finding its place in our culture.

PC at home and surfing the globe

In technology rich societies the PC at home is becoming a common phenomenon. Recently it was for example estimated that there was a computer in more than 80% of the Dutch homes. These PC's empower house hold members and integrate services such as email in everyday life. And the "Internet is transforming the social interaction among different age groups in society in all countries".[8] Surfing the globe is becoming a common pastime.

We create our own cultures and communities

As we have more control, and more isolation and exclusion, we expect to be able to create our own cultures, finding like minded people in a community, or to establish our own identity and community of interest to the exclusion of others. These communities and cultures can be virtual, but have a very real physical impact.

Lifelong Learning is a *cultural issue*

We have moved to a 'zap' culture with television, local satellite and webTV, that now is amplified by Information and Communication Technology. Small chunks of information, or entertainment, build up the mosaic of our cultural experiences, a culture of 'blips'. Ubiquitous mobile communication ("where are you?"), video and gaming, surfing the globe, all allow us to create our own cultural communities.

Conclusion

Economic, social and cultural developments all point in a direction where personalised, flexible learning will be part of our economic, democratic, cultural and social life. Just as at the work place where its use is integrated, Information and Communication Technology will play an important enabling role. And ICT is able to play this role because also its integration in our social and cultural life is just a matter of time. It can furthermore be noted that: "ICT is a major component in merging personal, private, leisure and work time". [8]

Who are the students in Lifelong Learning?

Economic, social and cultural developments all point in a direction where personalised, flexible learning will be ongoing part of our economic and social life. Information and Communication Technology will play an important enabling role in this Lifelong Learning. Lifelong Learning is also high on the political agenda. The 'what' is clear, but what about the 'how'? The question is: how should Lifelong Learning be organised? This question can only be answered when it is clear who the students in Lifelong Learning will be and what their needs are. So: who are the students in Lifelong Learning? A further question is, who should be able to create opportunities and situations for LLL ensuring the students' feel valued with their learning recognised formally and informally.

Employment related perspective

Knowledge worker as knowledge creator

Knowledge workers are found in innovative businesses and organisations, including communities where people are creating community capital and action. Work in these places is organised in non-traditional ways and professionals work in a different way. Organisational structures suited for efficient, standard, large-scale throughput (old economy) change to structures facilitating flexible, custom-tailored, small-scale, high quality production or servicing (new economy) [9]. These new structures aim to satisfy a personal, demand-driven market and are reflected in organisational concepts such as 'Just-In-Time'. They are geared towards teamwork, flexibility and quality. Information and Communication Technology (ICT) is omnipresent and empowers the individual to act as expert in many areas. It also offers flexibility in time and place in support of teamwork. Work is result oriented and the professionals are accountable on results: team and organisation form a meritocracy. To keep up with demands and competition these innovative businesses create new knowledge in their domain. A knowledge worker therefore is also a knowledge creator [9].

This knowledge work is teamwork, because the knowledge needed in many cases is multi-disciplinary, calling on formal and tacit knowledge. So for a knowledge worker also other "competencies" play a role: such as working in a multi-disciplinary team and multi-disciplinary problem solving. Knowledge workers are part of a 'learning team'. Knowledge workers in most cases develop a knowledge career, whatever discipline they are specialised in, moving from executive to strategic roles.

In fact knowledge workers are the embodiment of Lifelong Learning in economic life.

Skills worker as knowledge applier

Much the same can be said about skills workers who have to adapt their skills to new situations. Skills workers use their skills in businesses and organisations to produce goods or services. Their skill is in applying knowledge. They also in many cases work in teams and learning on the job is also for them the best way to learn new skills. However, this learning maybe is not as much integrated in their normal working life as is the case for knowledge workers and updating of skills may have to be organised separately. This updating should be organised close to the job and in many cases for the whole team. The team then also is a 'learning team'.

Worker who needs reorientation

A special case is formed by workers who need reorientation. Their normal work place is not suitable for learning on the job, otherwise reorientation would not be necessary. This also implies that their team is not a suitable place to learn. These workers have much the same characteristics as students in the first part of Lifelong Learning: initial education.

Managers and leaders

Many people with management and leadership responsibilities do not recognise their need for LLL (either for creating knowledge or for updating skills). In many cases they are not aware that LLL takes place all of the time in their workplace, whether by design or chance. ICT provides many opportunities for such people to access LLL, in the workplace and on the move, increasing the effectiveness of their companies. At the same time, the ready access to information and LLL by workers increases the pressures on managers and leaders to be up to date.

Social and civic perspective

Local community member

Community members who play a role in a local community, i.e. in their every day social environment. In this role learning takes place in this person's social environment. Learning might for example deal with question as 'how to fight petty crime' or 'how to keep my social environment suitable informed about something'. In this learning the interaction with fellow-members of the community is an important aspect. The person who tries to answer relevant questions, is in this case part of a 'learning community'. The local community can of course be 'virtual'. For example, dispersed peoples are now members of strong on-line communities that mitigate the impact of diaspora., thus allowing communities to learn about and keep in contact with their own culture, family and geography, indeed continuing to shape these communities from afar.

Civic community member

Community members who play a role in a civic community. In this role learning takes place in this person's democratic environment. Learning might for example deal with question as 'how bring down petty crime rates' or 'how to influence democratic processes'. In this learning the interaction with fellow-members of the community is an important aspect. The person who tries to answer relevant questions, is in this case part of a 'learning community'. The local community can of course be 'virtual'. For example, dispersed peoples are now members of strong on-line communities that mitigate the impact of diaspora., thus allowing communities to learn about and keep in contact with their own political environment, indeed continuing to shape these communities from afar.

Hobby or interest community member

Community members who play a role in a hobby community or a community of interest. In this role learning takes place in the context of the community and deals with question as 'how to fight mildew' or 'how to organise our tennis tournament'. In this learning the interaction with fellow-members of the community is an important aspect. The person who tries to answer questions relevant for the community is part of a 'learning community'.

Personal perspective

Student in the educational system

Students who follow initial education, learn mostly by studying in their personal life. Sometimes initial education provides the context of a 'learning community' for individual students (for example in primary education), but mostly students study and learn on their own. The classes they are in, cannot be characterised as 'learning communities' and 'team learning' has to be separately organised. Team learning however is important to students as their professional future will in most cases entail team work and team learning. The way in which students engage with their learning community has evolved, it is no longer a single community with a common purpose, the student is likely to be a learner in a number of different communities, some formal and linked to institutions and some informal and linked to team interest.

Learners on their own

Persons who prefer to learn on their own. They study from books or computers and are able to 'help themselves': They do not want or need to be part of a team or community learning experience, although they will purchase courses from correspondence colleges, open universities or the local bookshop.

Age groups

Divers age groups are of relevance.

First age **Pre-working**

Young people, from birth until independently economically active; those in school, those in care etc.

Second age **Working people – paid and unpaid**

Industry and Commerce, Services, Government, Politicians (from parliament to local community and single issue politics).

Educators who have to be helped/supported in moving from one way of working to another, becoming lifelong learners and supporters of Lifelong Learning (Teachers and University lecturers)

Third age Retired people

New situation, preparation for retirement, new skills and knowledge leading to employment, remaining economically, socially and politically active. Enhanced roles in community – volunteers. Increasing number of retired people and inability to maintain standards of living – pension time bomb, hence economically active.

All ages Hard to reach

Hard to reach – lacking ambition to learn. Socially excluded – not allowed or able to fulfil their ambitions. Disabled – not easily able to fulfil their ambitions. Untapped mainstream – do not see the need to take part in LLL as their needs are met in their work or lifestyle. It is also likely that people will move in and out of this category as their life changes, for example, if they become unemployed or disabled and detached from their normal teams and access to learning resources and opportunities

Conclusion

From the **employment-related perspective** ‘students’ in Lifelong Learning are the knowledge workers (knowledge creators) and the skills workers (knowledge appliers). Both groups learn on the job in ‘learning teams’. For knowledge workers this is by definition. However for the skills worker this perhaps has to be organised when learning is not an integral part of the work.

From the **social and civic perspective** ‘students’ are people learning in ‘learning communities’. These can be local communities or communities of hobby or interest, including citizenship communities.

From the **personal perspective** ‘students’ can be ‘lone wolf’ learners who are able to help themselves. ‘Team learning’ and ‘community learning’ are important to them as these are part of their employment-related or social life. ‘Lone wolf’ learners may be imminently able to make use of ICT to organise themselves as members of self-sustaining learning teams or learning communities.

These learners fall into several age groups. Attention must be given to reaching people in all ages.

What is different in Lifelong Learning?

Lifelong Learning is demand driven, flexible learning which takes place in the context of economic life (knowledge workers or skills workers), social life (local community member, citizen, member of interest group) or personal life (student, lone wolf learner). It is organised as 'Learning Teams' or 'Learning Communities'. The difference between a 'Learning Team' and a 'Learning Community' is that teams operate in a given organisational and cultural environment, communities mainly organise themselves.

Characteristics of Lifelong Learning

Many aspects in Lifelong Learning will be different from traditional learning. Let us try to give some characteristics. Characteristic for Lifelong Learning are:

- Lifelong Learning is not necessarily the consequence of teaching, and also not of provision of information by someone who knows something the other does not [10], .
- Lifelong Learning is mostly done outside school; classroom, textbooks and teachers are not by definition ingredients of any environment that is supposed to facilitate learning [10].
- Not textbooks, but opportunistic and rich environments form triggers for Lifelong Learning.
- Lifelong Learning is by empirical observation and enhances personal experience.
- Lifelong Learning occurs 'Just in Time'.
- Lifelong Learning is about interactions and groups (teams or communities): 1:1, many-to-many (virtual).
- Self-motivation is the driving force in Lifelong Learning. This raises the question however of what to do about the socially and educationally excluded: the people who cannot motivate themselves or be motivated.
- Lifelong Learning requires active participation in learning teams and communities, citizenship is Lifelong Learning [2]
- In Lifelong Learning forms of progression and personal achievement are different. It is not what students can reproduce that counts, nor the solution of artificial exercises. What counts is what you are able to achieve in real-life situations, be it in real economic life, real social life and real personal life measured by common, real-life standards.
- Lifelong Learners will maintain a portfolio of achievements.
- Lifelong Learning is Open Window learning, the learning environment is global.
- Lifelong Learning may be Mobile Learning, Home Based learning, Work Based learning, Community learning, but it is essentially a social activity involving interaction with others. ICT will support these interactions from anyplace at anytime.
- Lifelong Learning education is learner centred: demand driven and aiming for personal achievements.
- Lifelong Learning allows informal and organic learning. It satisfies multiple learning needs/styles/groups of individuals.
- Lifelong Learning is from cradle to grave. The age profile of learners will change, for example retired people will take part.

Frictions with current organisation of education

There are economic and social challenges which demand a new approach to education and training, within the framework of Lifelong Learning (LLL). For example in Europe these challenges originate in large scale economic and social change, rapid transition to a knowledge-based society and demographic pressures resulting from an ageing population. These challenges cannot be met by the traditional face-to-face education. As stated by Visser [10], page 2: Particularly traditional education is not capable of accommodating ever increasing numbers of learners and learning needs at an affordable cost. Large scale introduction of Information and Communication Technology (ICT) to automate traditional education (the textbook, the classroom and the teacher) will not bring the solution. Visser continues with stating [10], page 4: Universities, and other learning institutions, are in need of redefining themselves in much more fundamental ways that by simply continuing their old practices by modern means. The production of knowledge has become a highly networked and increasingly fluid phenomenon. Universities play a role in it, but are no longer the exclusive or even major players. They are in need of continually repositioning themselves. Gibbons refers to the value-added inherent in the "creativity to configure knowledge and resources over and over again". These networks of knowledge production are likely to comprise more than just the academic community. " [10]

Lifelong Learning (LLL) is not about lifelong going to an educational institution. It implies a transformation of the organisation of education from teaching to learning. It also implies an inclusive approach with respect to economic life (business, services and industry) and social life (society). In the so-called 'Golden Triangle' of learning Economic Life, Student and Educational Institution meet, just as Social Life, Student and Learning Community meet. Lifelong Learning implies profound educational change.

Lifelong Learning (LLL) of an individual is an individual social process. It is not the content of the process we should focus on, but the structure of the process, called scenario by Bent Andresen [11]. However, we need a learner focussed approach (scenario's for self-directing learning activities), not a teacher focussed approach (scenario's focussed on self-directing teacher activities). LLL changes the role of the learner from consumer of institutional products to the creator of new learning in the setting of business, organisation or community, which may or may not be facilitated by a formal institution.

Role of institutions

The new learning in Lifelong Learning is about the organisation of learning. As society changes, so will the organisations of learning as the focus on the learners and their needs increases. Existing organisations will change, and new public and private organisations will emerge, especially to meet the needs of new target groups. Also locations of learning institutions will change as people are learners within a global education marketplace. Institutions themselves will have to learn about the pedagogy of learning, and about how to match the complexity of learning ambitions to educational organisations. The main question is: how do we organise learning? 'Teachers' will organise the process and learners will do the learning. Accreditation and validation will be of learning achievements within learning ambitions.

Students find the current organisation of education a barrier hindering the fulfilment of their learning needs. Current systems were built to meet needs associated with a different set of goals. Existing institutions are organised for the efficient delivery of and access to content, specifying the learning pathways of individuals in advance and not to meet the preferred learning styles and ambition of the learners.

Students are not full-time, they work or have other demands on their time and attention to which schools, colleges and universities are competitors. With changing ambitions, learners will no longer pay for 'chunks' of content and results, often deconstructed whole courses and with requirements to attend linear courses. In stead learners will only pay for learning outcomes (own achievements) that fulfil their ambitions.

Important issues for the new educational institutions are: technology access of learners and how to reach excluded groups and hard to reach groups and individuals. But also the question: with virtual learning organisations springing up, community lead and bottom-up created, short-term, informal, and non-institutional, where lies the added value in the role of an educational institution?

Conclusion

Lifelong Learning is demand driven, flexible learning which takes place in an **employment-related perspective** (knowledge workers or skills workers), in a **social or civic perspective** life (local community member, citizen, member of interest group) or a **personal perspective** ('lone wolf' learner). It is organised in 'Learning Teams' or 'Learning Communities'. The difference between a 'Learning Team' and a 'Learning Community' is that teams operate in a given organisational, social and cultural environment, and that communities mainly organise themselves.

Educational institutions will have to change. Important issues in this change are: technology access of learners, how to reach excluded and hard to reach groups and individuals. But also the issue of added value: With virtual learning organisations springing up - community lead and bottom-up created, short-term, informal, and non-institutional - where lies the added value of an educational institution?

Role of Information and Communication Technology (ICT)

In Lifelong Learning the role of ICT is one of empowerment, creativity and support. Just as in economic life, application of ICT in education goes through phases [9]. There are three stages of development in application of ICT, each characterised by technological innovation:

1. a stage of automation, in which processes are automated,
2. a stage of informatisation, in which ICT is used as a (personal) tool to empower and support the professional in processes of work,
3. a stage of communicatisation, in which the computer is used as a (personal) agent in a communication network.

At the moment education is moving from stage 1 (automating the teaching process, i.e. the teacher in the computer) to stage 2 (empowering and supporting students).

The current technology on our desktop, in our homes and in our community provides a powerful toolbox for support of Lifelong Learning. What is needed is effective organisation of its use, not more technology. We do not need elaborate electronic learning environments to be effective in LLL. Important applications deal with communication (finding and interacting with resources, organisations and people), knowledge management (organising, storing, creating and sharing of knowledge) building together personal (learning) environments for learning support.

These applications can be used at work, in the home or at any other location providing access, including mobile devices. Use of the applications is individually and in groups. And anywhere, anytime, to meet an ongoing needs, as well as specific short-term transaction based requirements.

Lifelong Learning is an Information and Communication Technology issue

Lifelong learning provides new opportunities for active participation in society, empowering citizens to increase their influence over social, cultural and economic factors, locally and further a field, as ICT permits remote participation. Economic, social and cultural developments all point in a direction where personalised, flexible learning will be part of our economic, democratic, cultural and social life. Just as at the work place where its use is integrated, Information and Communication Technology will play an important enabling role. And ICT is able to play this role because also its integration in our social and cultural life is just a matter of time. It can furthermore be noted that: "ICT is a major component in merging personal, private, leisure and work time".

Conclusion

In Lifelong Learning the role of ICT is one of empowerment, enhancement of creativity and support.

The current technology on our desktop, in our homes and in our community provides a powerful toolbox for support of Lifelong Learning. What is needed is effective organisation of its use, not more technology. No elaborate electronic learning environments are needed to be effective in Lifelong Learning. Important applications deal with:

- Personal communication (finding and interacting with resources, organisations and people),
- Organisation of activities (planning, scheduling, monitoring),
- Information management (organising, storing, creating and sharing of information),
- Organisation of learning team and learning community work (group work).

These applications can be used at work, in the home or at any other location providing access, including mobile devices. Use of the applications is individually and in groups. And anywhere, anytime, to meet ongoing needs.

Virtual Learning Organisations and Communities

It may be concluded that Lifelong Learning is demand driven, flexible learning which takes place in different perspectives:

- **employment-related perspective** (knowledge workers or skills workers),
- **social or civic perspective** (local community member, citizen, member of interest group)
- **personal perspective** ('lone wolf' learner).

Lifelong Learning may be organised in 'Learning Teams' or 'Learning Communities'. The difference between a 'Learning Team' and a 'Learning Community' is that teams operate in a given organisational, social and cultural environment, and that communities mainly organise themselves.

Working = Learning

In Lifelong Learning on the one hand working & learning come together.

Virtual learning organisations may offer the organisational environments for this combined learning, providing an extension of the work environment. There are several typologies of virtual organisations available. In 'Organisations going virtual' [13] the following typology, developed by Campbell in 1997, is presented:

- a) Internal virtual organisation;
- b) Virtual organisation;
- c) Dynamic virtual organisation;
- d) Web enterprise or agile organisation.

This last type of ICT-supported organisation (d) is a temporary network of experts working in a specific field or on a specific topic. "...a spatially dispersed and temporarily flexible cultural community, the reproduction of which is dependent upon learning and innovation of its constituents" [14]. Knowledge management and the sharing of information among partners are essential elements for an agile organisation [13, page 204]. Applications of ICT in virtual organisations are: local and wide area networks, electronic data interchange, the internet, intranets, workflow management systems, knowledge-based technology, and other applications of artificial intelligence, such as intelligent agents [14].

A first proposal for the design of a Virtual Learning Organisation may, for example, be found in [5].

Living = Learning

On the other hand living & learning come together in Lifelong Learning.

Here Virtual Learning Communities (or Virtual Communities of Practice) may offer the organisational environments for this combined learning, providing an extension of the living environment.

For example, McDermot [15], [16] and Wenger [17] provide guidelines for the creation of Virtual Learning Communities.

Von Krogh, Ichijo and Nonaka offer guidelines for Enabling Knowledge Creation [18].

Conclusion

Virtual Learning Organisations (for Working = Learning) and Virtual Learning Communities (for Living = Learning) may provide the organisational setting for Lifelong Learning. In these organisations and communities ICT is a necessary and integrated facilitator.

Research agenda

Research focus

What is different when comparing Lifelong Learning with traditional education? The difference is very fundamental: Lifelong Learning mostly is about learning and traditional education mostly is about teaching. Lifelong Learning is a setting, in the words of Peter Senge (The Fifth Discipline), “where people continually expand their capacity to create results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to learn together” [2], Page 202. The foregoing implies that for Lifelong Learning the central question is: how to organise that people can learn effectively, whereas the central question in traditional education is: how to teach so that people will learn what is taught.

How to organise that people can lifelong learn effectively?

The central question of Lifelong Learning is a difficult one. We are thinking in terms of an educational system with the focus on teaching. It is therefore difficult to think about and envisage an educational system which organises effective learning. Also we are thinking in terms of an educational system where ICT has not yet penetrated very far into the teaching. Problems associated with bringing computers into every day education therefore are not very well understood although lessons could be learned from others, outside education, in this respect. And one thing is clear: ICT will be integral part of Lifelong Learning.

It may be concluded that Lifelong Learning is demand driven, flexible learning which takes place in different perspectives:

- **employment-related perspective** (knowledge workers or skills workers),
- **social or civic perspective** life (local community member, citizen, member of interest group)
- **personal perspective** (‘lone wolf’ learner).

Lifelong Learning may be organised in ‘Learning Teams’ or ‘Learning Communities’. The difference between a ‘Learning Team’ and a ‘Learning Community’ is that teams operate in a given organisational, social and cultural environment, and that communities mainly organise themselves.

Virtual Learning Organisations (organising Learning Teams for Working = Learning) and Virtual Learning Communities (organising Learning Communities for Living = Learning) may provide the organisational setting for Lifelong Learning. In these organisations and communities ICT is a necessary and integrated facilitator.

Research questions

From the analysis in this position paper follow three main research questions to be addressed by the IFIP Lifelong Learning Community.

Research question A

How to design, develop and implement

Virtual Learning Organisations

to facilitate

Working = Learning

which is ‘Just in Time’, has a ‘Just Fit’ and provides flexibility in time and place?

Support of Information and Communication Technology (ICT) is essential and will be integrated into these organisations (virtuality).

Research question B

How to design, develop and implement

Virtual Learning Communities

to facilitate

Living = Learning

which is 'Just in Time', has a 'Just Fit' and provides flexibility in time and place?

Support of Information and Communication Technology (ICT) is essential and will be integrated into these communities (virtuality).

Research question C

On the background of these two main research questions there is a third main research question:

How to enable learning or, in other words, how to enable knowledge creation [18] in these ICT-supported Virtual (Learning) Organisations and Communities?

Design, development and implementation

Design, development and implementation of Lifelong Learning Organisations for working has to be done in a learning process in which both employers and educational practitioners (students, teachers and developers) work together on action oriented research and innovation. This will be a complex learning process which merits the attention of a (virtual) learning community.

Design, development and development of Lifelong Learning Communities for living has to be done in a learning process in which both society stakeholders and educational practitioners (students, teachers and developers) work together on action oriented research and innovation. This will be a complex learning process which merits the attention of a (virtual) learning community.

Design for sustainable development and implementation

Special emphasis should be given to sustainable development: how to design learning environments that will continue to function in an effective and sustainable way after initial creation within the boundary conditions set by higher education itself. Design should take this into account.

Countries without a knowledge intensive economy

Special attention should be given to the relevance of design, development and implementation of Lifelong Learning in countries which do not (yet) have a knowledge intensive economy. Not only economic factors, but particularly social, cultural, civic and political factors will have to be taken into account, just as availability of ICT-resources.

The role of the International Federation for Information Processing (IFIP)

IFIP Technical Committee 3 on Education

Technical Committee 3 of the International Federation for Information Processing (IFIP) aims to establish a (virtual) learning community for Lifelong Learning. A first activity of this learning community will be a working meeting in the form of a Lifelong Learning track in the IFIP e-Train conference in 2003. Next to other invited papers this Lifelong Learning position document is input to this working conference and will be reviewed at the conference.

Lifelong Learning in the Digital Age

Working track in the IFIP conference eTrain: 'E-Training practices for professional organisations'

Please note: Lifelong Learning in the digital age is a separate track in this conference; papers for this track will be invited by Mr. Brian Samways, Chair of the Lifelong Learning Taskforce of IFIP Technical Committee 3. For submission details please see the website for the Lifelong Learning track; the web-address is listed below.

Venue: Pori, Finland

Dates: 7 – 11 July, 2003

More information:

eTrain: <http://www.pori.tut.fi/etrain>

Lifelong Learning track: <http://web.plu.ntnu.no/ansatte/janwib/ifip/lll-conference/>

Working track on Lifelong Learning

Within IFIP Technical Committee 3 (Education) there is a tradition of working conferences. Through their special organisational features these events allow in-depth treatment of the conference themes, in-depth discussions, but also informal exchange of ideas and experiences. The working conferences are designed in such a way as to encourage establishment of new professional and personal relationships. The working conferences are a stimulating experience because of the intensive work done by experts in the field coming from all over the world. Results of the working conferences are shared with the international scientific community through the proceedings which are usually published by Kluwer Academic Publishers. Results are also disseminated through the IFIP network. The working track 'Lifelong Learning in the Digital Age' will have the characteristics of a working conference.

After the results of this first activity of the learning community on Lifelong Learning IFIP TC3 will decide whether it is feasible to formalise the learning community into an IFIP TC3 Working Group.

Input to the working track

This position paper has been prepared by the IFIP Technical Committee 3 Taskforce on Lifelong Learning. Authors who want to participate in the 2003 Working Track on Lifelong Learning are invited to prepare a response to this position paper in the form of an abstract. The Programme Committee will review these abstracts and select authors with the aim to create a rich and high quality conference programme. Both author responses which agree or disagree with the position paper, are invited. Selected authors will be invited to prepare a 3000 word paper on the basis of their submitted abstract which will be published in the proceedings, presumably by Kluwer Academic Publishers.

Are you interested?

If you are interested in this Lifelong Learning conference track, you may contact the Chair of the IFIP TC3 Taskforce on Lifelong Learning, Brian Samways, Fax +44 121 303 8002, e-mail:

Brian_Samways@birmingham.gov.uk. Please first check the information on participation and submission of conference papers on the Lifelong Learning Track website (<http://web.plu.ntnu.no/ansatte/janwib/ifip/lll-conference/>).

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