

The European programme for training in the field of Assistive Technology

Alan Turner-Smith

Abstract Summary

The current pattern of education and training in assistive technology in Europe is presented. The sector is characterised by fragmentation within countries and poor collaboration between them. Can or should there be a European profession of Assistive Technologist? The particular difficulties in harmonisation are discussed and some models are presented that enable coherence in the sector.

Aims and Objectives

The syllabus and format of different courses in assistive technology in Europe reflect disparate local needs. One important topic, for example, will be the peculiarities and intricacies of the local service delivery system.

Is there a place in Europe for an identifiable assistive technology profession? This paper argues that Europe is not yet ready, but that there exist models of training and education that encourage greater coherence among the diverse professionals involved in the sector.

Background

The assistive technology (AT) provision cycle involves, by its nature, a heterogeneous group of disciplines. Skills are needed in design, manufacture, user assessment, delivery, maintenance, and disposal; and, of course, use. In European countries the field is often characterised by highly fragmented services. Across Europe there is little trans-national collaboration, nor are there harmonised structures or syllabus for education and training. Indeed some countries do not distinguish training from education.

Through the efforts of members of the AAATE (Association for the Advancement of Assistive Technology in Europe) and the support of the earlier Telematics sector research 'Framework' programmes of the European Commission, educators and trainers have been able to share their expertise and spread some sound standards for education and training; for example the HEART line E programme and its sequelae: EUSTAT, which was directed towards the end-users of AT, that is, people with special needs; IMPACT, which was directed towards assistants and intermediate professionals who are not themselves specialists in AT; and TELEMATE, which focused mainly on the professionals in AT.

Support for training developments have not continued through the same sector in the current EU research Framework programme but the earlier programmes have established a common pattern for training and education that is being followed in several centres. A Masters course in assistive technology in the UK is one example.

Current Standards

Most European countries conform to the basic classification of educational levels set down by UNESCO in ISCED – 1997 (International Standard Classification of Education). These do not guarantee uniformity of educational systems, although

educationalists are attempting to harmonise qualifications across Europe. For example the Bologna Declaration on Engineering Education in Europe has set out a ‘two-cycle’ system (a Bachelor/Master system) to encourage convergence of our many different educational qualifications. However, national pride and idiosyncrasies are an obstacle to full conformance.

In parallel with educational developments, international professional groups set out standards for competence to practice. In the field of engineering, typical are those of FIANI (Fédération Européenne d’Associations Nationales d’Ingénieurs – a group of national engineering associations from 25 European countries), which supports the Eur Ing title. Although this title is not universally popular, its generic structure, which includes recognition of proven skills and experience in the field as well as basic education and training, is becoming widely accepted. This is in accord with a general acceptance across Europe that any employee whose misjudgement or lack of skill may damage clients should meet an assessed minimum standard of competence. An appropriate level of competence applies to all levels of specialism, so in terms of

numbers, the demand for training is greatest for those supplying basic assistive technology. See Figure 1. This diagram, however, does not reveal the breadth of the skills base required. For example in the UK it has recently been recognised that the health, education and social service sectors should work together (as they do in many other EU countries), but breaking down established professional tribalism is not easy.

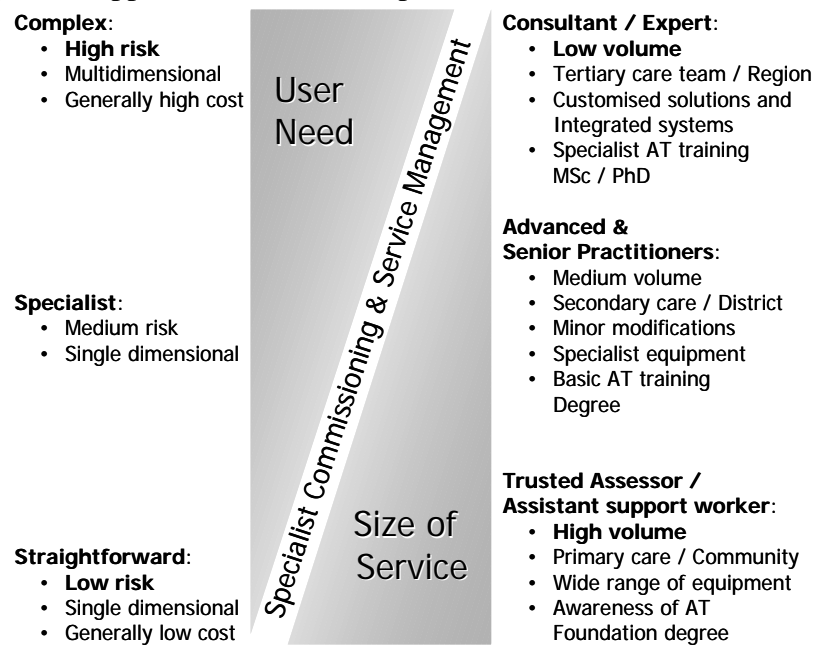


Figure 1 Levels of user need and size of assistive technology service

The rising expectations of end-users are now forcing a refocusing of accreditation away from qualifications based on knowledge to demonstrable competence in practice. ‘Competence’ can also be applied to whole services, in that a particular skill mix may be provided by any number of different combinations of individuals, each with their own skills that, together, match the user need.

Future direction

In the USA, RESNA has developed a coherent package of qualifications for assistive technology professionals: Assistive Technology Practitioner (ATP), Assistive Technology Supplier (ATS) and Rehabilitation Engineering Technologist (RET). While Europe may not be ready for such coherence, it should be possible to evolve a pattern of training and education that conforms to existing and emerging educational and professional standards and which will therefore be mutually recognised across both professional and national boundaries.

An emerging concept is a wide-ranging matrix of competency-based modules that address generic and specific skills and environments. Roles within assistive technology provision can then be supported by a choice of modules based upon employment context and personal education and experience. To enable coherence, a robust system for recognition of 'acquired prior learning' is essential. The European Credit Transfer System (ECTS) may be suitable at graduate levels, but it needs to be extended to more basic levels.

Some existing course frameworks will be presented that illustrate these ideas. The presentation will be made available on-line at www.kcl.ac.uk/core.

References accessible 16 Feb 2005

AAATE: Association for the Advancement of Assistive Technology in Europe
<http://139.91.151.134/>

ECTS: European Credit Transfer System
http://europa.eu.int/comm/education/programmes/socrates/ects_en.html

EUSTAT: Empowering USers Through Assistive Technology
<http://www.siva.it/research/eustat/index.html>

HEART: Horizontal European Activities in Rehabilitation Technology
<http://www.hi.se/English/heart.shtm>

IMPACT: Increasing the IMPACT of assistive technology
<http://www.fontys.nl/impact/>

Masters course in Assistive Technology: <http://www.kcl.ac.uk/core>

RESNA: Rehabilitation Engineering and Assistive Technology Society of North America <http://www.resna.org/>

TELEMATE: TELEMatic Assistive Technology Education <http://www.telemate.org/>

The European programme for training in the field of Assistive Technology

Alan R Turner-Smith
(www.kcl.ac.uk/core)

Overview

- AT provision characterised
- Professional standards
- EU Educational projects
- Developing patterns of education and training
- Should there be, or can there be a European profession of 'Assistive Technologist'?

AT provision

- Assistive technology provision involves a heterogeneous group of disciplines:
 - design, manufacture,
 - user assessment,
 - delivery, maintenance, and disposal; and,
 - use.

Fragmentation of AT education in Europe

- Highly fragmented services
 - Mobility
 - Seating / orthopaedic engineering
 - Communication
 - Environment and Access
- Little trans-national collaboration, and No harmonised structures or syllabus for
 - Training
 - ◆ 'Training' is about 'how'
 - Developing the competencies to do a task
 - ◆ Enables defined tasks
 - Education
 - ◆ 'Education' is about 'why'
 - Understanding why the task is done that way,
 - Understanding why it is necessary to do it at all
 - ◆ Enables new tasks.

Overview

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Professional Standards

- International professional groups have set out standards for competence to practice; e.g. 
- FIANI (a group of national engineering associations from 25 European countries), supports the Eur Ing title.
 - Eur Ing title is not universally popular,
 - But the generic structure becoming widely accepted :
 - ◆ Recognition of basic education and training
 - ◆ Recognition of proven skills in the field
 - ◆ Recognition of experience in the field.

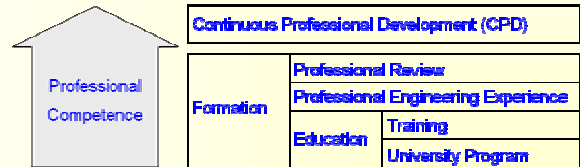
FIANI Standard for engineering formation

$$B + 3U + 2(U \text{ or } T \text{ or } E) + 2E$$

where

- B = high level of secondary education
 - validated by official certificates at about 18 years
 - U = a year of approved University Program
 - given by a university or other recognized body
 - T = a year of Training to increase knowledge through work within technical fields
 - defined, supervised and approved by a university
 - E = a year of relevant Engineering Experience
 - assessed and approved by a body accepted by FEANI
- and $3U + 2(U \text{ or } T \text{ or } E) + 2E > 7$

FIANI Standard for engineering formation



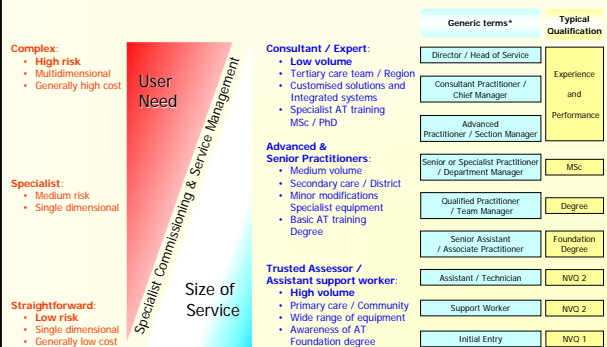
Risk management demands training

Generally accepted:

Any employee whose misjudgement or lack of skill may damage clients should meet an assessed minimum standard of competence

- Applies to all levels of specialism
- In terms of numbers: the demand for training is greatest for those supplying basic technology

AT Demand and Supply



Expectations of end-users

- **Users experience** Competence first
 - Not education
- **'Competence' applies to whole Services**
 - Competent individuals working together
 - A particular skill mix may be provided by any number of different combinations of individuals, each with their own skills that, together, match the user need
- **'Competence' applies to whole Sectors**
 - Health, Education and Social Services
- Users don't care what label the services work under, just as long as they work seamlessly
- Breaking down professional tribalism is not easy
 - It's a matter of Education!

Overview

- AT provision characterised
- Professional standards
- **EU Educational projects** →
- Developing patterns of education and training
- Should there be, or can there be a European profession of 'Assistive Technologist'?

EU AT Educational projects

under European Commission DG XIII

- **Framework 3, 1990-94**
 - **TIDE research programme**
(Technology Initiative for Disabled and Elderly people, 1991 – 1994)
 - HEART: (Horizontal European Activities in Rehabilitation Technology)
 - Line E: Rehabilitation Technology Training project
 - Report E.3.1: Critical Components for European Curricula, July 1994
 - **Framework 4, 1994-98**
 - TIDE ⇒ 'Telematics'
 - EUSTAT 1998-1999
 - IMPACT 1998-1999
 - TELEMATE 1998-2000
 - **Framework 5, 1998-2002, and 6, 2002-06**
 - Less generous educational programmes
 - Socrates / Erasmus - Higher education
 - Leonardo - Community Vocational Training
- http://europa.eu.int/comm/education/index_en.html



EUROPEAN COMMISSION DG XIII
Telematics Applications Programme

EU AT Educational projects

EUSTAT

Empowering Users Through Assistive Technology

<http://www.siva.it/research/eustat/index.html>

Directed towards the end-users of AT,
that is, people with special needs.



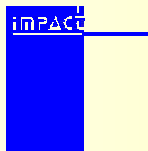
EU AT Educational projects

IMPACT

Increasing the IMPACT of assistive technology

<http://www.fontys.nl/impact/>

Directed towards assistants and
intermediate professionals who
are not themselves specialists in AT.



EU AT Educational projects

TELEMATE

TELEMatic Assistive Technology Education

<http://www.telemate.org/>

Directed towards professional specialists in AT.



EU AT Educational projects

EUSTAT, IMPACT and TELEMATE
are still being used as basis of courses
in some centres

→ e.g. Masters in assistive technology in the UK
<http://www.kcl.ac.uk/core>

Overview

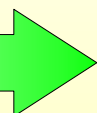
● AT provision characterised

● Professional standards

● EU Educational projects

● Developing patterns of
education and training

● Should there be, or can there be
a European profession of
'Assistive Technologist'?



Some existing courses



S.I.V.A.
Servizio Informazioni e Valutazione Ausili
Assistive Technology Research and Information Centre

Postgraduate Certificate:
Assistive Technology Applications
(200 hours)




2 weeks & post-course project work



2-week Intensive Course in Assistive Technology

Jyväskylä Polytechnic Finland



Bath Spa University Faculty of Architecture

1-year Masters-level course in accessible building design

Future direction

RESNA qualifications for assistive technology professionals:

- Assistive Technology Practitioner (ATP),
- Assistive Technology Supplier (ATS),
- Rehabilitation Engineering Technologist (RET)

Is it possible to evolve a pattern of training and education in Europe that

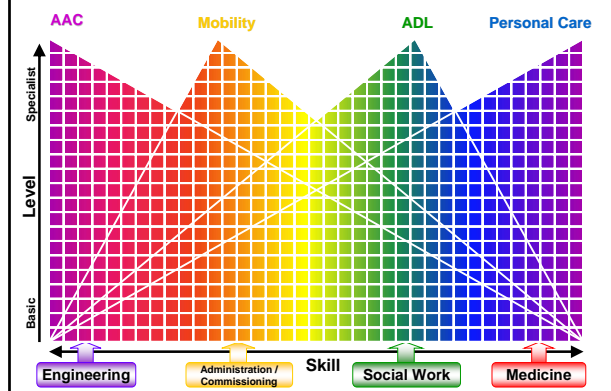
- conforms to existing and emerging educational and professional standards,
- is mutually recognised across both professional and national boundaries, and
- addresses peculiarities and intricacies of local service delivery systems

?

An emerging concept: matrix learning

- A wide-ranging matrix of competency-based modules
 - To address generic and specific skills
 - Practiced in generic and specific environments
- Individual trainees supported by a choice of modules based on
 - Their education and training background
 - Their experience
 - Their employment context
- Requires a robust system for recognition of 'Acquired Prior Learning' (APL)
- European Credit Transfer System (ECTS) may be suitable at graduate levels, but it needs to be extended to more basic levels.

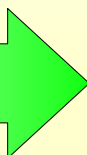
Competence modules framework



Overview


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- Developing patterns of education and training

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No
(Not Yet)

Propositions

1. **Competency-based qualifications in AT, based on a multidisciplinary matrix of skills, can provide flexible solution to the heterogeneous demands of the labour market in AT across the EU**
2. **All EU-based courses should be advertised in one place**
 → **Another job for EASTIN?**
 (trans-national information network on AT)
<http://www.eastin.info/>

3. **There is little educational material in the field. What there is should be shared freely to encourage a common approach to the subject, based on experience of best practice.**

References

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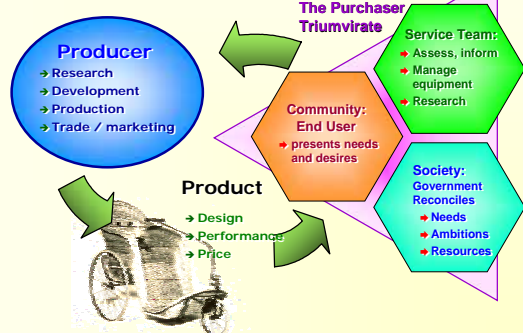
- AAATE: Association for the Advancement of Assistive Technology in Europe
<http://139.91.151.134/>
- CoRE: Centre of Rehabilitation Engineering
<http://kcl.ac.uk/core>
- EASTIN: European Assistive Technology Information Network
<http://www.eastin.info/>
- ECTS: European Credit Transfer System
http://europa.eu.int/comm/education/programmes/socrates/ects_en.html
- EU Education and training programmes
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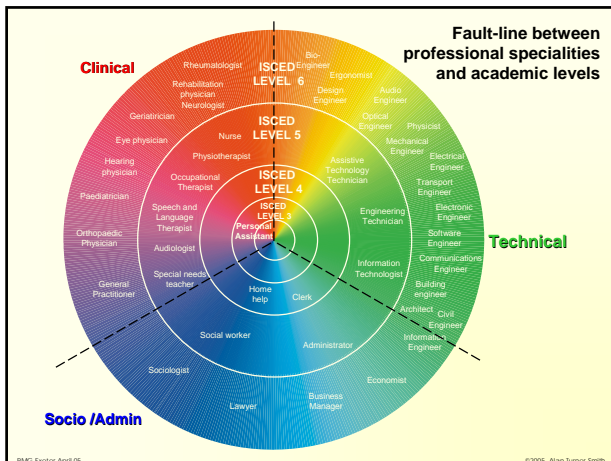
*Thank you for
your attention*



Bonus slides

the Assistive Technology market





UK levels of academic accreditation

	Certificate of Higher Education	Bachelors degree with honours	Masters degree	Doctoral degree
Concepts	Awareness	Understanding	Detailed understanding	Wide, systematic understanding
Knowledge	General	Appreciation of limits	Critical awareness and insight	Extend
Depth	Basic	Some at forefront	Mainly at forefront	Substantially at forefront
Research	Use data	Understand methods	Understand and apply methods	Design and manage original methods
Study	Guided	Self-managed	Self-directed	Publishable
Literature	Aware	Use	Critically evaluate	Produce
Problems	Make sound judgements	Solve problems	Apply knowledge innovatively	Manage unforeseen problems
Ideas	Develop lines of argument	Devise and sustain arguments	Propose new hypotheses	Generate new knowledge

- International Educational Standards**
- **International Standard Classification of Education (ISCED), UNESCO, 1997**
 - Sets educational levels to which most European countries conform
 - **EU Attempts to harmonise qualifications**
 - e.g. Bologna Declaration on Engineering Education: 'two-cycle' Bachelor - Master system
 - Encourages convergence of **qualifications**
 - but does not
 - **Guarantee uniformity of educational systems**
 - **National pride and idiosyncrasies are obstacles to full conformance.**

