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EMPOWERING USERS THROUGH
ASSISTIVE TECHNOLOGY

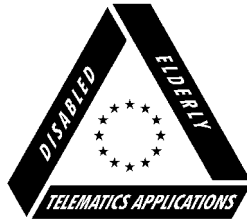


ASSISTIVE TECHNOLOGY EDUCATION FOR END-USERS

Guidelines for Trainers



EUROPEAN COMMISSION DG XIII
Telematics Applications Programme
Disabled and Elderly Sector



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FOREWORD

This book - *the EUSTAT Guidelines* - is intended for people who organise and carry out educational programmes for end-users of Assistive Technology.

It has been developed by the EUSTAT Consortium - within the Telematics Applications Programme of the European Commission - and is the result of joint inter-disciplinary work within the EUSTAT Consortium, which pools the various partners' specific competence, expertise and field experience.

The choice of an assistive device is a matter that effects the individual's life. End-users should be regarded as the main protagonists and the decision makers of such choices, even in case professional assistance is needed or required. However, to avoid terms like *decision-maker* or *partnership with professionals* becoming empty buzzwords that lack any tangible implication, it is important that end-users be given the educational possibility to become informed, demanding and responsible consumers of Assistive Technology. This is the educators' challenge, whether peers or professionals.

The EUSTAT Guidelines intend to assist educators in such challenge, and thus offer a contribution - although limited to the specific area of Assistive Technology - to action promoting empowerment of people with disabilities.

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EUSTAT Project Leader

Milano, 15 March 1999

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EXECUTIVE SUMMARY

The mission of Workpackage 06 in the EUSTAT study was to develop a set of guidelines for *educators and organisers of educational initiatives for end-users* of assistive technology (AT).

Those guidelines are contained in this document, which is intended for public use. It is the result of joint inter-disciplinary work within the EUSTAT Consortium, which pools the various partners' specific competence, expertise and field experience. The guidelines were initially outlined in Deliverable D06.1 "Structure of the Guidelines", drafted in Deliverable D06.2 "Draft Guidelines", and then tested at three validation sites in Italy, Belgium and France within ongoing educational courses for people with disabilities. Finally, they were refined following recommendations from the validation sites and a peer review process.

The guidelines also build upon other deliverables previously produced by the EUSTAT study: D03.2 "Critical factors involved in end-users' education in relation to AT"; and D04.2 "Experiences of end-users' education to AT in Europe". What's more, they are consistent with the EUSTAT User Manual (Deliverable D05.4 "Go for it! A User Manual on AT"), which was developed in parallel both as a self-instruction manual for end users and as educational material for courses. Although these documents are recommended reading for those seeking deep understanding of the issues, they do not represent a prerequisite for the guidelines.

This document is divided into six chapters.

Chapter One (Guidelines in brief) clarifies the objectives of this book and the intended readership. It also offers a general overview of the concepts explored in the other chapters, so it can be used as a checklist for organisers of educational initiatives.

Chapter Two (Basic concepts) clarifies some basic terms related to disability and AT that educators should know before undertaking any educational initiative.

Chapter Three (Setting objectives and adopting methods) helps organisers of educational programmes to set objectives, label them according to a consistent terminology, and take decisions about priorities and critical factors.

Chapter Four (Organising educational initiatives) addresses the organisation of educational initiatives, including the design process, the selection of topics to cover, pedagogical methods and styles, and practicalities.

Chapter Five (Gearing to the audience) discusses factors to consider so as to meet the learning pace of trainees and ensure that the knowledge delivered will be useful in their daily life context.

Chapter Six offers case studies that may be useful as concrete examples of educational activities for end-users. These are based on experiences carried out by three EUSTAT partners in Belgium, France and Italy.

Besides English, this deliverable has also been produced in Danish, Dutch, French, Italian and Portuguese.

Index

EXECUTIVE SUMMARY	3
1. GUIDELINES IN BRIEF	7
1.1. BACKGROUND AND SCOPE	7
1.1.1. <i>The starting point: the end-user</i>	7
1.1.2. <i>The reason for these guidelines</i>	8
1.1.3. <i>Intended audience</i>	9
1.1.4. <i>How to use the guidelines</i>	10
1.2. BROWSING THE GUIDELINES	11
1.2.1. <i>Bootstrapping</i>	11
1.2.2. <i>Formatting</i>	12
1.2.3. <i>Running</i>	12
1.2.4. <i>Envisioning outcome</i>	13
2. BASIC CONCEPTS	15
2.1. KEYWORDS	15
2.1.1. <i>Assistive Technology</i>	15
2.1.2. <i>Service Delivery</i>	17
2.1.3. <i>Disability</i>	18
2.1.4. <i>Quality of life</i>	21
2.1.5. <i>Autonomy</i>	22
2.1.6. <i>Empowerment</i>	23
2.2. EMPOWERMENT IN RELATION TO AT	25
2.2.1. <i>Patient Vs. consumer: evolution of the end-user's role</i>	25
2.2.2. <i>How does AT contribute to autonomy?</i>	26
2.2.3. <i>How does AT knowledge contribute to empowerment?</i>	28
2.2.4. <i>What level of knowledge should the end-user aim at?</i>	29
2.2.5. <i>Managing effective relationships with personal assistants</i>	30
2.2.6. <i>Peer counselling and peer mentoring</i>	31
3. SETTING OBJECTIVES AND ADOPTING METHODS	33
3.1. METHODS FOR TRANSFERRING AT KNOWLEDGE	33
3.1.1. <i>Knowledge transfer processes</i>	33
3.1.2. <i>Technical competence vs. initiative</i>	34
3.1.3. <i>Target breadth vs. relationship with the target</i>	35
3.1.4. <i>Educational processes</i>	37
3.1.5. <i>Unlocking the spring: the motivation issue</i>	38
3.2. STRUCTURING EDUCATIONAL ACTIVITIES	40
3.2.1. <i>Providing the fish or the fishing rod? Focusing on active attitudes</i>	40
3.2.2. <i>Types of educational activities</i>	41
3.2.3. <i>Critical factors in the educational process</i>	44
4. ORGANISING EDUCATIONAL INITIATIVES	49
4.1. DEFINING CONTENTS	49
4.1.1. <i>The HEART Model</i>	49
4.1.2. <i>Technical components</i>	51
4.1.3. <i>Human and socio-economic components</i>	55
4.2. GETTING ORGANISED	57
4.2.1. <i>The planning stage</i>	57
4.2.2. <i>The launching stage</i>	61
4.2.3. <i>The organisation stage</i>	64

4.2.4. <i>The evaluation stage</i>	68
4.3. PEDAGOGICAL ISSUES	71
4.3.1. <i>Didactical methods</i>	71
4.3.2. <i>Tools and strategies</i>	74
5. GEARING TO THE AUDIENCE	79
5.1. MEETING THE PACE OF LEARNING	79
5.1.1. <i>Predisposition factors</i>	79
5.1.2. <i>Disability-related factors</i>	81
5.1.3. <i>The individual's attitudes towards disability</i>	82
5.1.4. <i>The individual's expectations</i>	84
5.2. PREPARING TRAINEES FOR ACTION.....	88
5.2.1. <i>Environmental factors</i>	88
5.2.2. <i>Social support factors</i>	91
5.2.3. <i>Market factors</i>	96
5.2.4. <i>Social network factors</i>	101
6. CASE STUDIES	105
6.1. THE PRISMA CASE.....	105
6.1.1. <i>Context</i>	105
6.1.2. <i>Design and set-up</i>	106
6.1.3. <i>The programme</i>	108
6.1.4. <i>Running the course</i>	109
6.2. THE GIHP AND ANLH CASES	112
6.2.1. <i>Context</i>	112
6.2.2. <i>Design and set-up</i>	113
6.2.3. <i>The programmes</i>	115
6.2.4. <i>Running the courses</i>	116
ANNEX	119
OTHER PUBLIC DOCUMENTS PRODUCED WITHIN THE EUSTAT STUDY	119

1. Guidelines in brief

This chapter clarifies the objectives and contents of this publication, offers a general overview of the contents, and guides the reader through the chapters that follow.

1.1. Background and scope

1.1.1. The starting point: the end-user

Who are the *end-users* of Assistive Technology (AT)?

When we speak of *end-users*, we refer primarily to people with disabilities, or elderly people who have difficulties coping with the practical matters of daily life. However, sometimes the term *end-users* can also cover other people in the individual's primary network like family members or helpers, whenever AT is to be used in conjunction with personal assistance or as a tool to make assistance easier.

In this book we will distinguish between *end-users* and other actors (e.g. rehabilitation professionals, AT providers, etc) who could also be considered “users” in a broad sense, in that they use AT as a tool for their professional activity in the field of disability. These latter “users” will be described using other terms like *AT providers*, *suppliers* or *advisers*, depending on their role.

The process that leads the end-user from the identification of a personal need to the acquisition of an assistive device is seldom a simple one: it involves a number of steps that may call for critical decisions to be made. *Knowledge* helps in tackling the various steps, setting goals, making decisions and planning actions. Among other things, being an *empowered* end-user means being able to make informed and responsible decisions about AT.

This book is a product of the European Commission's EUSTAT Study. The main objective of this study was to find out ways and methods by which knowledge of AT can be directly transferred into the hands of *end-users*. To this end, it worked toward development of *educational material* for end-user self-education, and *guidelines and tools* for those who carry out educational initiatives that facilitate the empowerment of people with disabilities, helping them to make informed, appropriate and responsible AT decisions. As part of the EC Telematics Application Programme, EUSTAT was designed with both a *social* and a *technology* orientation: based on the idea that people with

disability should be empowered to be main actors and active partners in AT decision making, knowledge transfer to *end-users* was believed to foster equal opportunities, introduce direct consumer control over the quality of AT services and products, and also improve the effectiveness of AT usage.

Besides this book, EUSTAT has produced other three public documents, which are briefly outlined in the Annex.

1.1.2. The reason for these guidelines

Today, organisations of people with disability strongly advocate a user-centred approach, where the *end-user* is the main protagonist and *the* decision-maker in matters effecting his/her life. In this view, professional services are still recognised as being fundamentally important, but tend to be seen as options, not obliged pathways, that the community provides and the individual is free to adopt in order to help the process of rehabilitation, social integration and full participation. The most advanced professional services tend to share this view, and in these settings it is not uncommon to hear terms like *partnership* with end-users, as opposed to a concept of *full dependence* on the decisions of AT providers, which was more typical of past thinking.

However, to avoid terms like *decision-maker* or *partnership* becoming empty buzzwords that lack any tangible implication, it is important that end-users be given the educational possibility to become informed, demanding and responsible consumers of AT. These guidelines describe possible ways of carrying out such education.

By making available to both end-users and educators a comprehensive set of educational material designed for use in many countries, the EUSTAT books seek to respond to a need that has not yet been met. Whereas plenty of educational material has been produced in recent years for both clinical and technical professionals in academic, pre-service or in-service training, little or nothing has been produced with an international perspective specifically addressing the educational needs of those - people with disabilities - who daily use AT. One reason for this lies in the fact that traditional approaches towards AT used to regard end-users as passive recipients of products and services, mainly provided by financing bodies upon prescription by clinical professionals.

The methods for carrying out AT education are virtually infinite and vary according to the amount and extent of the knowledge to be transferred to end-users, the characteristics of the trainee population, the environmental context and so on. The guiding idea of this study is that each end-user should be provided with the maximum amount of *sustainable* and *useful* knowledge. This may sound sensible enough, but it raises the question as to what is “sustainable and useful” for each individual and who is to decide that. If a simple answer existed, there would be no reason for this study. In fact, there appears to be no single answer. Knowledge transmission is a process that involves a moving

target, in that *people change in response to knowledge*: new horizons open up, new needs arise, new challenges appear. So it cannot be handled simply by providing a set of notions and information. It requires an *educational approach* to assist people in their changes.

In the first part of the EUSTAT Study, a number of *critical factors* were identified that need to be *addressed* in the design of educational processes. The know-how already developed within previous European programmes such as HELIOS and the HEART represents a solid grounding. These guidelines are intended to challenge the reader to *examine a series of critical factors* and *make decisions* about them.

A *survey* was also carried out at international level that, bringing to the fore the wealth of expertise across Europe in this field but also revealing the enormous differences in approach, method, and even terminology. This survey provided a unique opportunity for discovering and networking ongoing experiences in the field, capturing tokens of wisdom from each, identifying good practices and possible common approaches. Many of the educational initiatives encountered in the survey were broad in scope, embracing areas like autonomy, independent living, access to services, etc. Nevertheless, AT always played a significant role. While the guidelines focus exclusively on AT, they also provide a comprehensive view that may help to spread the cultural wealth in the field, further benefiting existing initiatives or promoting new ones.

1.1.3. **Intended audience**

The primary target of these guidelines are *those who organise*, or are willing to organise, *educational programmes for end-users of AT*. These may be user organisations, self-help groups, rehabilitation or social services, mixed user and professional organisations, or providers and suppliers of AT.

The perspective is European and is thus not specifically rooted in any one country. As a consequence, most topics are dealt with fairly generally, leaving it up to readers to think over possible applications in their local context. These guidelines are intended to be applicable Europe-wide and are thus designed to be open to cultural or regional adaptations.

The authors also believe that this book may be of interest to many other people who, although not directly involved in organising educational initiatives, work in the field of rehabilitation and social integration of people with disabilities. A user-oriented perspective has been adopted, based on both direct experience and study carried out by the EUSTAT partners. The book helps reflect about establishing priorities, focusing goals, and clarifying the role of AT in the users' empowerment process. It also suggests a common terminology for describing key concepts that are often used throughout Europe with different shades of meaning.

For similar reasons the authors believe that AT practitioners and suppliers will also find useful information here, helping them to understand better the background that AT users need in order to maximise successful AT utilisation.

1.1.4. How to use the guidelines

Chapter One (Guidelines in brief) clarifies the objectives of this book and the intended readership. It also offers a general overview of the concepts explored in the other chapters, so it can be used as a checklist for organisers of educational initiatives.

Chapter Two (Basic concepts) clarifies some basic terms related to disability and AT that educators should know before undertaking any educational initiative.

Chapter Three (Setting objectives) helps organisers of educational programmes to set objectives, label them according to a consistent terminology, and take decisions about priorities and critical factors.

Chapter Four (Organising educational initiatives) addresses the organisation of educational initiatives, including the design process, the selection of topics to cover, pedagogical methods and styles, and practicalities.

Chapter Five (Adjusting to the audience) discusses factors to consider so as to meet the learning pace of trainees and ensure that the knowledge delivered will be useful in their daily life context.

Chapter Six offers case studies that may be useful as concrete examples of educational activities for end-users. These are based on experiences carried out by three EUSTAT partners in Belgium, France and Italy.

1.2. Browsing the guidelines

1.2.1. Bootstrapping

Before setting out to design any educational initiative, the organiser should have clear ideas about some basic concepts related to disability and AT.

The first keyword is of course **Assistive Technology** (=> 2.1.1). AT education cannot fail to consider the characteristics of **Service Delivery** systems (=>2.1.2), which act as intermediaries between the AT market and end-users. However, the relationship between AT and the end-user can be better understood within the general framework proposed by the World Health Organisation, the so called ICIDH Classification, whose main keywords are **Impairment, Disability, Handicap, Activity** and **Participation** (=>2.1.3). Although the outcomes of AT can be described in many ways, three terms seem particularly well suited for describing the overall impact of AT on the individual end-user: **Quality of Life** (=>2.1.4), **Autonomy** (=>2.1.5) and **Empowerment** (=>2.1.6). These need to be properly defined, so as to avoid possible misunderstandings arising from the different shades of meaning the may have in different cultural contexts.

If the educational initiative is aimed at promoting the empowerment of end-users, there are other factors the organiser should be aware of. The first is the move from a medical to a social approach, whereby end-users no longer regard themselves as **patients** but rather as **consumers** (=>2.2.1). Failure to acknowledge this view positions the initiative outside of the empowerment perspective. The second is that AT contributes to autonomy, and knowledge about it contributes to empowerment. However, this is only true under certain conditions. The organiser should reflect upon two questions: **How does AT contribute to autonomy?** (=>2.2.2), and **How does AT knowledge contribute to empowerment?** (=>2.2.3). The third factor is the amount, extent and **level of knowledge to be transferred to end-users** (=>2.2.4), an important consideration for which there is no single answer; however, some thoughts about the different kinds of knowledge that can be pursued (theoretical, practical, procedural as well as know-how) may help in adjusting educational programmes properly to the trainees' needs.

In AT education there is often a need to include some topics that are in themselves external to AT, but are closely related to the field. Two of these that are recommended for inclusion in educational initiatives are **management of effective relationships with personal assistants** (=>2.2.5) and **peer counselling** or **peer mentoring** (=>2.2.6). In the first case, solutions to problems of daily living are actually achieved through a mixture of personal assistance and AT, so education may be needed in order to strike the right balance case by case. As to the second topic, experienced end-users can play a vital role in facilitating AT choice, acceptance and usage by novices.

1.2.2. Formatting

The second step is deciding the purpose, format and characteristics of the educational initiative. Some concepts derived from educational sciences may be helpful at this stage.

It is possible to identify five kinds of **knowledge transfer processes** (=>3.1.1): *counselling, training, teaching, information providing and awareness campaigns*. Each plays a different role and can be handled differently depending on the stress put on **technical competence vs. initiative** (=>3.1.2) or on the **target breadth vs. relationship with the user** (=>3.1.3). By definition, **educational processes** (=>3.1.4) are those whose primary objective is learning, and as such they only include *teaching and training*. Learning is the result of a number of factors, one of them being the **motivation issue** (=>3.1.5), which in turn includes *motivation to learn* and *motivation to change*.

Within an empowerment perspective, the aim of educational processes can be metaphorically described as “providing the fishing rod” and the “art of fishing” as opposed to just “handing over the fish” (the solution to a specific problem encountered by the end-user). This involves **focusing on active attitudes** (=>3.2.1) so as to prepare trainees for decision making and problem solving.

Bearing this in mind, four main **types of educational initiatives** (=>3.2.2) can be identified: *courses, seminars, workshops and conference cycles*. Deciding which is appropriate case by case and how it should be organised depends on a number of **critical factors** (=>3.2.3):

- *positioning factors;*
- *factors related to the transfer of knowledge to the group;*
- *factors related to the reception of knowledge by the individual;*
- *factors related to the transformation of knowledge into initiative.*

The following sections of the guidelines examine each factor so as to help the organiser make appropriate decisions. The dissertation is illustrated with three case studies involving courses held in three different countries.

1.2.3. Running

Armed with the above principles and concepts, we can begin designing an educational initiative.

First, the contents should be decided. AT may be the sole topic dealt with, or just one of several topics addressed by a wide-ranging educational initiative. These guidelines concentrate exclusively on AT knowledge, which according to the **HEART model** (=>4.1.1) is composed of **technical components** (=>4.1.2), **human components** and **socio-economic components** (=>4.1.3). Each component corresponds to a number of topics that course organisers may decide to draw upon in order to build educational programmes.

Then the educational initiative has to take shape and be put into operation. Design is carried out in three stages: a **planning stage** (=>4.2.1), in which decisions are made about the trainee group and the teaching team; a **launching stage** (=>4.2.2), where the initiative is advertised and the trainees recruited; an **organisation stage** (=>4.2.3) dealing with practicalities; and an **evaluation stage** (=>4.2.4), through which the outcome and success of the initiative can be verified.

The knowledge delivery process has to take into account pedagogical issues such as **didactical methods** (=>4.3.1) and teaching **tools and strategies** (=>4.3.2).

While it is true that all critical factors should be taken into account in the design process, factors concerning the transfer of knowledge to the trainee group have a major impact: these are *contents*, *pedagogy*, *targeting*, and *management/organisation*. These factors determine the overall character of the educational initiative and the framework each educator will act within.

1.2.4. Envisioning outcome

After the educational programme has been designed, the educators' role is to fulfil the mission while ensuring that each trainee pursues the planned learning objectives to their best ability. Factors that may influence the individual reception of knowledge are **predisposition factors** (=>5.1.1), **disability-related factors** (5.1.2), **individual attitudes towards disability** (=>5.1.3), and **individual expectations** (=>5.1.4).

However, an AT course run in complete isolation from the world would make no sense. The main indicator of course success is the trainees' ability to make use of the knowledge received after the course and in real life. Harnessing the notions to the end-users' living context is a major challenge for educators. This basically means taking into account factors related to the **living environment** (=>5.2.1), to community services offering **social support** (=>5.2.2), to the **AT market** (=>5.2.3) and to the **social network** (=5.2.4) around the individual.

Sometimes an educational initiative may happen to be unsuccessful. It may fail visibly; or may have failed even though at first glance it appeared successful (people came, eminent speakers were in attendance, the media covered the event...), since the knowledge delivered to trainees turned out to be of little practical use.

Conversely, initiatives that achieved excellent results with the trainees may not appear to look impressive in the media. Educational activities for end users probably have a lower profile than those for professionals because the organisers are often small user organisations with few financial or organisational resources and because the target is dispersed. In any case, the outcome of an educational initiative should be measured primarily in terms of the empowerment it has fostered in each person who took part. The critical

factors discussed in these guidelines were chosen in view of this very objective. If all these factors are addressed satisfactorily, there are good reasons to believe that the educational initiative will be successful.

2. Basic concepts

This chapter clarifies some basic concepts and keywords related to disability and assistive technology that trainers and organisers of educational initiatives for end-users should know.

2.1. Keywords

2.1.1. Assistive Technology

It is important to start with a clear understanding of the term *Assistive Technology*, this being one of the most prominent keywords in these guidelines.

First of all, the term *technology* not only indicates physical objects like devices or equipment, but refers more generally to products, organisational set-ups or “ways of doing things” that encapsulate a number of technical principles and components. For instance, an “accessible public transportation technology” is not only composed of a fleet of accessible vehicles (e.g. buses with elevating platform), but encompasses the whole transport system including traffic control, bus-stop location, information and ticketing procedures, customer service, personnel training, etc. Without such organisation, the mere vehicle would not offer any “public transportation”.

Secondly, the adjective *assistive* is applied when the technology is used to compensate for functional limitation, to facilitate independent living, to enable elderly people and people with disabilities to realise their full potential. Some such technologies, while not purposely designed for people with disabilities, can be arranged in such a way as to become *assistive* when needed. We use the term *Assistive Technology* to cover these technologies and those specifically aimed at people with disabilities. The acronym *AT* will be used throughout these guidelines, and should be read as *assistive technology products or services*.

The concept of *AT* should always be considered in tandem with another important concept: so-called *universal design*, or *design for all*. This indicates the *adaptation of the environment to the population*, or more precisely *constructed environments, products and services intended for the general public and designed so that elderly people and people with disabilities can use them as well*¹. The *design for all* concept is falling increasingly within general ergonomics, and is being extended beyond the “real” world to the “virtual” world (consider software applications designed so that anybody can use them).

¹ EC DG13: *TIDE Workplan*. Brussels: European Commission, 1995

In conjunction with this, AT refers to the *individual match between the person and the environment*, and thus refers to *technologies that overcome barriers to mainstream facilities, or compensate for specific functional limitations so as to facilitate or make possible activities of daily living*².

There are several ways of classifying AT, depending on the purpose.

The most widespread classification, the *ISO 9999 / EN 29999 Classification of Technical Aids*, is product-oriented. It groups assistive devices into ten classes (each divided into subclasses and these in turn into divisions) based on their main objective (mobility, housekeeping etc):

- aids for therapy and training;
- prostheses and orthoses;
- aids for personal care and protection;
- aids for personal mobility;
- housekeeping aids;
- furnishing and adaptations to homes and other premises;
- aids for communication, information and signalling;
- aids for handling products and goods;
- aids and equipment for environmental improvements, tools and machines;
- aids for recreation.

This classification is widely used all over the world for database and catalogue compilation, so knowing it is *a must* for anybody interested in the field.

However, the ISO/EN does not cover AT *services*. Moreover, its analytical structure may not be so practical for structuring educational programmes. For this purpose it is possible to resort to other classifications that are not primarily *product-oriented* or *service-oriented*, but rather *knowledge-oriented*, like the *HEART classification*, which is used in these guidelines. This clusters AT knowledge round *technical, human and social components*³.

The same perspective is also common to a major work recently published for the academic education of AT practitioners⁴, where ATs are described as the person's *extrinsic enablers* (as opposed to *intrinsic enablers* such as motor control, perception, cognition etc, which are *human components*). These can be divided in turn into *general-purpose enablers* (seating systems, control interfaces, computers, electronic outputs) and enablers related to specific *performance areas* (communication, mobility, manipulation, sensory functions).

There are also *activity-oriented* classifications like the *MPT (Matching Persons and Technology)*⁵ which approaches AT from the perspective of the various tasks of daily living: *household activities, health maintenance, recreation, self-*

² Ib.

³ HEART. Line E. *Rehabilitation technology training - E.2.1. Report on job profile and training requirements for rehabilitation technology specialists and other related professions*. Brussels: European Commission, 1994

⁴ Cook A.M., Hussey S.M. *Assistive Technologies: Principles and Practice*. Saint Louis: Mosby, 1995

⁵ Scherer M.J. *The Matching Person & Technology (MPT) Model*. Webster: MPT Institute, 1994

care, employment, communication, mobility, vision, hearing, cognition, reading/writing, learning.

Another informal way of classifying AT could be on the basis of its *application environment*: AT for replacing function (prosthetics) or supporting lacking function (orthotics), AT for extending abilities in daily living (technical aids), AT for improving environmental accessibility, AT for facilitating helpers and supporting personal assistance⁶.

There is no fixed formula for classifying AT: it depends on the purpose (cataloguing, teaching, information exchange, organisation of counselling services, etc). The truly important thing is to have a clear idea of *what the term AT means* and *what AT is meant for*.

2.1.2. Service Delivery

In the AT field, the term *service delivery system* (SDS) is used to identify the set of facilities, procedures and processes that act as intermediaries between the AT market and AT users. The SDS facilitates access to AT for persons with disabilities through financial help, professional know-how, information, training and so on⁷.

Each country has a different SDS, and in most cases more than one single SDS is in place, so it is impossible to describe in general terms how the SDS works. Depending on the overall welfare strategy underpinning national or regional legislation, there may be major SDS procedures that have general validity throughout a country (as happens in countries with a national health service), or specific procedures that apply to narrow bands of population (as happens in special sector-based social security provisions). Furthermore, SDS procedures often change in response to political evolution, legislative development, or modification in the availability of public resources.

Nevertheless, seven basic procedural steps can be identified that are common to every SDS⁸:

- the *initiative*, meaning the first contact between the client and the SDS;
- *assessment*, meaning the evaluation of needs;
- identification of solution *typology*, i.e. the appropriate kinds of AT for meeting needs;
- *selection* of the specific set of assistive devices and services;
- *authorisation* by the financing body;
- actual *delivery* of AT to the user (a step also including installation, personalisation and training);

⁶ Andrich: *Ambiente di vita*. In *Una società per tutte le età: La persona anziana, risorsa per un mondo unito*. Roma: Città Nuova, 1997

⁷ HEART. Line C. *Rehabilitation technology service delivery - C.4. Report 2. Rehabilitation technology service delivery systems in Europe*. Brussels: European Commission, 1994

⁸ HEART. *Improving service delivery systems for assistive technology - a European strategy*. Brussels: European Commission, 1995

- subsequent *follow-ups*.

It is crucial that AT users have a thorough knowledge of the SDS they are entitled to. Awareness of one's rights, information on where to go and whom to apply to, understanding *who* is entitled to decide *what* in each step of the process are all inalienable components of empowerment. So examining this issue should be considered a *must* by anybody who organises educational initiatives.

An SDS provides immense benefits since it can compensate for the users' lack of technical competence and financial resources. However, it can also generate technical and financial dependence. For instance, the AT market in Europe cannot really be described as *user-driven*, since SDSs have so much weight in establishing the demand.

Given the enormous differences present throughout Europe, the method for delivering SDS training should be tailored to the specific target group and context. In particular, it is important to provide the key to understanding how the SDS works and what future developments may arise. For this analysis, there are six parameters that may be helpful⁹:

- *accessibility* (how far the SDS is accessible to those who need it);
- *competence* (how far it provides competent solutions);
- *co-ordination* (one-knock door vs. a mix of isolated decision-makers);
- *efficiency* (in terms of cost effectiveness, quality and timing)
- *flexibility* (ability to respond to individual differences);
- *user influence* (how far is it respectful of the user's view).

2.1.3. Disability

AT and SDSs exist in response to a need. The most commonly used term to indicate the reasons behind the need is *disability*. However, other terms such as *impairment* and *handicap* are also used in this field, and serious misunderstandings may arise from inconsistent use. It is of the utmost importance to have full command of the precise meaning of each term, and clear ideas of how AT relates to them all. To put it briefly, it could be said that an assistive device may be designed with specific *impairments* in mind, with a view to solving problems associated to specific *disabilities*, and with the ultimate objective of preventing or overcoming specific *handicaps* so as to allow a person with disabilities or an elderly person to achieve a better quality of life.

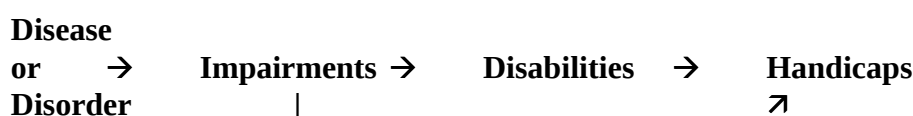
According to the *International Classification of Impairments, Disabilities and Handicaps* (ICIDH)¹⁰:

⁹ *Ib.*

¹⁰ World Health Organisation: *International Classification of Impairment, Disability and Handicap*. Geneva: WHO, 1980

- an *impairment* is any loss or abnormality of psychological, physical or anatomical structure or function, so it is a concept that refers both to the *body* and the *mind*;
- a *disability* results when the impairment leads to an inability to perform an activity in the manner or within the range considered normal for a human being, so it is a concept that refers to the *person*;
- a *handicap* occurs when an individual with an impairment or disability has difficulty fulfilling the normal role expected of him/her by society, so it is a *societal* concept.

This can be shown as follows:



(ICIDH - WHO, 1980)

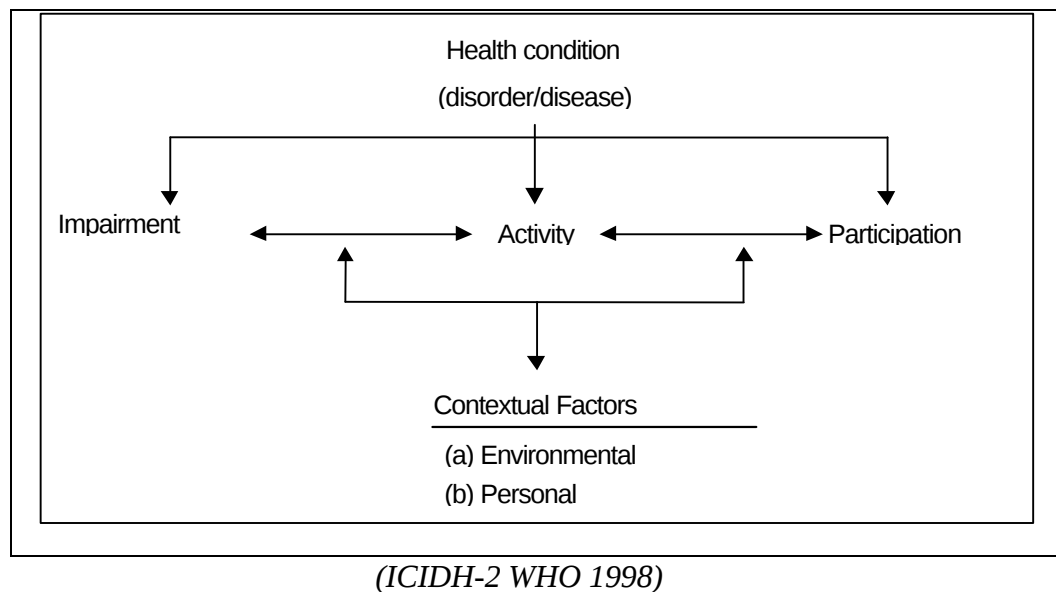
To give an example, an individual who was born without both upper extremities (the *impairment*) may not be able to write or complete self-care tasks in the normal fashion (the *disability*). If this disability prevents normal school participation or employment, a *handicap* arises. However, in spite of the impairment, this person may perform daily activities using his or her feet or mouth, or may use AT devices that allow him/her to overcome handicapping situations.

According to these definitions, a *handicap* is not a characteristic of a person but rather a description of the relationship between the person and the environment. With respect to previous approaches, the ICIDH shifts the *handicap* from the individual to the environment, thus offering an important perspective on the role played by AT in reducing the handicapping effects of disabilities. Describing persons with disabilities in this way also emphasises functional outcomes instead of focusing on limitations, thus reinforcing AT's contribution to successful functional outcomes for persons with disabilities.

Since 1980 considerable experience has been gained worldwide in the use of the ICIDH classification, and the need for revision has become increasingly apparent. As a consequence, the WHO, together with numerous partners, has launched a global initiative to seek consensus on a new classification that is more consistent with recent cultural and technical developments in the field. Currently being drafted, this new classification (ICIDH 2,¹¹) is structured in three dimensions: **Impairments (I)**, **Activities (A)** and **Participation (P)**. It is an attempt to establish a *multi-dimensional* and *multi-perspective* approach to disability-related phenomena, so as to provide the building blocks for developing models and studying the various aspects of such phenomena.

The concept is shown in the following schema:

¹¹ <http://www.who.ch/icidh>



In this model the term *handicap* disappears, while *disability* continues to be used to indicate *activity restrictions*. The main innovation in ICIDH-2, however, is the introduction of a new comprehensive term, *disablement*, to define a situation that results from an interaction, or in any case a complex relationship, between the individual's health condition and contextual factors. This interaction is dynamic, involves all factors at the same time, and works in both directions. For instance, an individual may:

- *have impairment without having any activity limitation (or disability):* e.g. a disfigurement (impairment) due to leprosy may not necessarily lead to activity limitations;
- *have activity limitations (disabilities) without having impairment:* e.g. poor performance in daily activities due to a particular disease;
- *have participation problems without impairment or activity limitations:* e.g. peoples' awkwardness towards an HIV-positive person may make him/her feel excluded;
- *experience a degree of influence in a reverse direction:* e.g. inactivity of muscles may cause atrophy; institutionalisation may result in a loss of social skills.

Contextual factors include both *environmental* and *personal* factors. Environmental factors are extrinsic to (outside of) the individual: they may include the attitudes of society, architectural characteristics of the surrounding environment, or the legal system. Personal factors (yet to be classified in the current version of ICIDH-2) include aspects such as gender, age, fitness, lifestyle, education, profession, past and current experience, all of which have an impact on how disablement is experienced.

This new classification enhances the role of AT, by acknowledging that AT devices can allow greater *participation* of persons with disabilities in social, educational and work activities. Among the many examples of this are two

definitions: "*Aids for personal mobility: apparatus designed to enhance the person's capacity to move, allowing better participation in social, work and/or educational activities*" and "*Aids for communication: devices to enhance the communication process*".

2.1.4. Quality of life

Another frequently heard keyword is "quality of life". It is often said that AT contributes to the quality of life and this is true¹², but what does the term "quality of life" mean exactly?

There are numerous factors that contribute to the quality of life of individuals and their communities: e.g. a healthy environment, financial status, cultural opportunities, etc. Often, an assistive device allows the user to acquire a new ability, but this does not necessarily lead to an improvement in the quality of life. In fact, economists distinguish between *effectiveness* (achievement of planned objectives) and *utility* (the importance the user attributes to those objectives), and this distinction has proved very helpful in evaluating the outcomes of AT¹³.

In general terms, *quality of life* should be seen as a multi-dimensional concept that describes overall comfort with life, which may cover different domains like physical status and functional abilities, psychological status and well being, social interactions, economic or vocational status, and religious or spiritual status¹⁴. Clearly, AT can generate positive changes within any of these domains, and, vice versa, individual acceptance of AT is influenced by how the individual feels in each domain. It is also apparent that *personal variables* (attitudes, education, knowledge about AT, etc), *systemic variables* and *environmental variables* all influence perceived changes in quality of life¹⁵.

So the right question is not "How much does AT improve the quality of life?", but rather "In which aspects of the quality of life does AT bring about improvements?". Researchers have not yet reached firm consensus on the most appropriate answer. Undoubtedly, there is agreement that AT has little to do with "health" in the biological sense, as is the case, say, with health care technology. What's more, from the users' perspective the ultimate impact of AT cannot be properly described within the domain of *functional abilities*: although it is true that most ATs extend abilities, these tend to be regarded by

¹² DeRuyter F. *Evaluating outcomes in assistive technology: do we understand the commitment?* Assistive Technology 1995; 7:3-16

¹³ Persson J, Brodin H. *Prototype tool for assistive technology cost and utility evaluation*. Del.2 TIDE/CERTAIN Project. Brussels: European Commission 1995

¹⁴ Spilker B. Introduction. In Spilker B (Ed). *Quality of Life and Pharmacoeconomics in Clinical Trials*. Philadelphia: Lippincott-Raven Publishers 1996

¹⁵ Andrich R, Ferrario M, Wessels R, DeWitte L., Persson J, Oberg B., Oortwijn W, VanBeekum T, Lorentsen O. *Assessing outcomes of Assistive Technology products and services: the EATS instrument*. Deliverable 3.2/2, Telematics EATS project. Brussels: European Commission, 1998

the user as *means* to achieve personal goals rather than *objectives* in themselves.¹⁶

For a person with disability, the *personal ability* to set, pursue and achieve a personal goal seems more important than the method by which the goal is attained (alone, with personal assistance, with AT, etc), or the level of physical dependence on other people that the chosen method entails¹⁷. In the EUSTAT study, this personal ability has been chosen as a quality of life indicator that AT can specifically improve, and is expressed by the term *autonomy*.

2.1.5. Autonomy

In our context, the term *autonomy* is not a synonym of *independence*: it is an attitude towards life, in some ways a personal characteristic that the individual can acquire and develop.

Autonomy does not necessarily mean “doing things without help”, nor is it restricted to persons with full cognitive ability. Persons who are dependent on others in various aspects of life due to intellectual impairment, cognitive limitations, frailty, disease, or simply ageing or childhood can achieve *autonomy* with respect to their expectations and environment.

Sometimes this concept can be extended to the whole primary network in which the person with disabilities lives, rather than being restricted to the individual: when AT has an impact on the whole network of primary relationships, a systemic view of autonomy may be appropriate in many cases.

The ultimate goal of AT is often described in terms of social keywords like quality of life, social integration and independent living. However, these should be seen as the outcome of a number of factors and circumstances, of which AT is but one. Examples of other factors include environmental accessibility, personal assistance, social provisions, affirmative legislation, cultural acceptance of diversity in the community, financial support, and so on. AT knowledge is not the sole empowerment factor: people with disabilities who are fully conversant in AT and able to make sound decisions are hardly in a position to pursue an independent living plan if they cannot avail themselves of financial means, funding, and a public service delivery system respectful of their decisions.

However, the role played by the *individual* should not be underestimated in favour of societal factors. Achievements in quality of life, social integration and self determination require the full participation of the individual person with disability as the main agent in defining his or her goals and projects, and the main protagonist in carrying out actions for solution. Like a mechanical watch that requires all the cogwheels to be in place but will only work if the

¹⁶ Ib.

¹⁷ Scherer M. *Living in the state of stuck: how technology impacts the lives of people with disabilities*. Cambridge: Brookline Books, 1996

spring is loaded, a *spring* is needed inside the person, one that comprises motivation, ability to identify and formulate needs, goal setting and willingness to pursue projects.

In this work, the “spring” is called *autonomy*. It is not passed on genetically but develops within an individual raised in harmony with his/her surroundings, and whenever this development is hindered it can be rekindled and fostered.

Autonomy can be defined as the *ability to plan one’s own life, to enter into relationships with others and together actively participate in the construction of society*¹⁸.

This definition establishes an equation of the kind *autonomy = relationship*, which in turn includes three types of relationships: *with one’s self*, *with others*, and *with the environment*. Hence, autonomy can be looked upon as a level of *relational comfort*. Clearly, this concept applies to anyone, irrespective of their health or physical or mental status. An able-bodied person may be *non-autonomous* if s/he experiences difficulties in one or more relation domains; conversely, a person with severe disabilities who depends heavily on personal assistance may feel comfortable at all the above relational levels. The onset of disability brings about a change in a person’s life, so in order to resume a situation of *autonomy* s/he needs *personal restructuring*, which means building a new relationship with the self, with others and with the environment.

So, what is the relationship between AT and autonomy?

We like to say that *AT* should be looked upon *as a tool for autonomy*, and thus *a tool for relationships*. This may seem to contradict what was said in the previous chapter, but in fact it does not. Undoubtedly, *AT* is a technical method to achieve personal goals, though not the only one. However, it is also true that a well chosen assistive device somehow integrates with its end-user; it is often felt to be an extension of the body, or a partner that augments the personal capability to relate with one’s self, with others and with the environment.

2.1.6. Empowerment

The term *empowerment* suggests a process through which a person gains more power, not in terms of formal status but in terms of freedom to make sound choices and pursue self-determined objectives.

Depending on the context where the term is used, it sometimes takes on political or social shades of meaning. In the context of these guidelines, we wish to focus on the individual perspective, and look at *empowerment* as the process of personal growth that leads the person with disabilities to greater *autonomy*.

¹⁸ Andrich R, Porqueddu B. *Educazione all'autonomia: esperienze, strumenti, proposte metodologiche*. Europa Medicophysica Vol.26 n.3/1990 pp.121-145. Torino: Minerva Medica, 1990

In educational psychology, empowerment can be defined as the *modification of the cognitive variables that underpin one's evaluation of the actions required to achieve an objective*¹⁹. In practical terms, an educational action can be regarded as an *empowerment* action when it provides not just information, notions and concepts, but more importantly fosters the ability to use them effectively for a fuller, more resourceful way of life. Such an action also broadens horizons, revealing a wider range of choices, new challenges and increased opportunities. Consequently, *empowerment* cannot be generated by exclusively external agents: it is the result of a process of *personal growth* that takes advantage, among other things, of information transmission. It would be contradictory to use the verb “to empower” in a transitive manner: educators cannot “empower trainees”, they can only provide them with *opportunities* for empowerment.

As stated above, the ability to make AT decisions is one important component of empowerment for persons with disabilities. When empowerment is the ultimate objective, the most effective initiatives are those where the trainees are offered more than just information and notions. AT education should promote personal growth in such a way as to enable trainees to identify their own *needs*, set their own *goals*, work out *plans* for achieving those goals and carry out the actions required to implement them. People who have this level of autonomy can be regarded as informed, demanding and responsible consumers of AT

Needs, goals, plans and *actions* cannot be standardised: each individual is unique in his/her values, priorities and choices, and lives a unique life in different human, cultural and physical environments. Effective educational programmes should respect this specificity.

¹⁹ Thomas K M, Velthouse B A: *Cognitive elements of empowerment: an interpretative model of intrinsic task motivation*. Academy of Management Review, 1990 p.666-681

2.2. Empowerment in relation to AT

2.2.1. *Patient Vs. consumer: evolution of the end-user's role*

One frequently heard term in AT Service delivery is *prescription*.

When a funding agency is directly providing an assistive device, somebody will be appointed to decide on the agency's behalf whether the client's need is worth the investment, is legitimate and meets eligibility requirements. In many countries this is considered principally a medical responsibility, while in others it is shared among a set of professionals that varies depending on the type of AT (e.g. physicians, occupational therapists, nurses, social workers, etc): however, clinical professions still have the lion's share²⁰. Hence the tradition of defining this decision with a term borrowed from the medical field - *prescription*.

This term is quite categorical: it evokes the idea of an order given by a *doctor* for the health of a *patient*, and is generally well accepted when the prescription concerns a medical treatment or a drug. It may also be quite appropriate in relation to some kinds of AT that have strong medical implications, like survival equipment (e.g. portable ventilators) or replacement of lost functions (e.g. prosthetic appliances). As a matter of fact the history of AT started with prosthetic equipment and is thus deeply rooted in the medical environment.

However, as AT moves from *body-related* appliances to *activity-related* devices or environmental adaptations, medical considerations tend to lose ground in favour of technical, individual and social aspects. Choosing how to organise one's kitchen may well be more a matter of lifestyle than pathology, and the installation of an elevating platform to overcome a flight of stairs certainly requires a specialised technician rather than a clinical professional. So as far as AT is concerned, the idea of being considered a *patient* reliant on the decision of professionals is nowadays falling out of favour with people with disabilities²¹.

Evolution in the concepts of rehabilitation, social integration and self-determination is being matched by the recent boom in the development of AT, which has put on the market a wealth of devices that allow disabled people to choose their own lifestyle and not give up pursuing personal goals. Both factors are shifting the social image of AT

- from *health-related equipment* to *tools for living*
- from *medical devices* to *common goods*
- from *professional-driven choice* to *user-driven choices*
- from a *patient* status to a *consumer* status.

²⁰ HEART. *European service delivery systems in rehabilitation technology*. Hoensbroek: IRV, 1994

²¹ HELIOS II. *Social Integration and Independent Living. Rapport d'activités*. Brussels: European Commission, 1995

Signs of changing attitudes are beginning to emerge. Some countries have already set up financing systems such as direct payment schemes, whereby the user is granted an overall budget and is responsible for deciding how it is to be utilised for AT and personal assistance. What's more, in some countries *recommendations* are now issued instead of *prescriptions*, and the user is supported in designing individual projects to submit for funding.

Organisers of educational activities must be fully aware of this cultural shift. It opens up great opportunities for empowerment, provided that end-users are offered knowledge, acquire awareness of their role, and have the ability to work on their own needs and goals in partnership with professionals when specific know-how is needed.

2.2.2. How does AT contribute to autonomy?

As previously mentioned, AT should be regarded as a *tool for autonomy*, which also means a *tool for relationships*.

According to this view, AT has the potential to achieve success when it is *appropriate*. This means being *effective* (really performing the task it was expected to do), *contextual* (well suited to the milieu and context of use) and *consonant* (consistent with the user's lifestyle and personality)²². It would be reductive to make AT decisions on the basis of mere task analysis (person's resources vs. activity to be carried out), as if the individual were isolated from the world. In fact, the context of use plays a fundamental role, since it defines the individual's world of relations²³.

Some examples....

A quadriplegic person seeking to manage incontinence may require different AT solutions for different settings, for example when staying at home the afternoon, or going smartly dressed to a theatre premiere, or travelling abroad for a week.

A sophisticated electronic wheelchair might be totally inappropriate for an African returning to his/her hometown, for the simple reason that spare parts may not be available there

The use of a device may bring about such a revolution in the person's lifestyle that it clashes with his or her personal or social values

The individual may be so "technophobic" that s/he feels intimidated by technology and would thus be comfortable only with low-tech solutions, while others may admire advanced technology and gain great advantage from it.

The end-user is the best candidate to judge what is most *appropriate*, *contextual* and *consonant* for him/her in each situation, and the educational process should try to exploit this potentiality.

It may be a good idea to lead the user to "learn to read" the characteristics of his or her life contexts. As a reference guide, these environments or milieus

²² Mainini M L, Ferrari A, Zini M T: *La nascita: relazione madre, padre, bambino*. Proceedings of the USL 4 Childhood Service Conference, pp. 69-102. Parma: USL 4, 1982

²³ Andrich R. *Consigliare gli ausili*. Milan: SIVA, 1996

could be classified as a series of “shells” ranging from the inner shell - the *body* - to outer shells that gradually expand the outreach of social relations²⁴:

- the *personal space* (the space within reach of the AT-augmented body functions);
- the home or *familiar space* (the basic space where the person “always feels safe”);
- the *neighbour space* (the context of primary stable social relations, including work or school);
- the *social space* (the context of normal social life);
- the *world* (any other outer context).

For each individual, all of these spaces are simultaneously geographical and psychological.

A specific problem originated by disability may take different shapes in the various contexts, and thus call for different AT solutions. In each context, any solution has its strengths and weaknesses, so it would be wise for the person to be prepared for alternative options, safety tips, “escape routes”: for instance, if the device runs on electricity it would be wise to train for an alternative low-tech back-up solution.

Finally, in order to contribute to autonomy, AT must be *accepted*.

Acceptance of AT is sometimes an important though difficult step in a person’s life, one that can take various shapes ranging from *enthusiastic acceptance* to *passive resignation*. Favouring acceptance and nurturing motivation should be a primary objective of an educator, and much depends on how the AT image is presented. It is important that trainers have the right attitude towards AT, and avoid unbalanced presentation. Indeed, there may be situations where valuable technical information is provided on AT but the trainers offer an inappropriate perspective by raising unrealistic expectations (the myth whereby AT is the panacea for any disability problem). What’s more, in some cases the feeling that the trainee gets is one of intrusive foreign objects that make disability more visible or exclude the human touch of personal assistance.

On the contrary, educators should convey the message that appropriate AT is a *tool for freedom*, an instrument that matches one’s own personality and a support that relieves the family or those who assist from physical burden and psychological dependence so as to allow a more balanced and intense human relationship with them. This means more than just saying, “AT is great” - a simplistic statement empty of meaning. It is a matter of promoting sincere appreciation of one’s AT as something to be enjoyed, or, to put it in even stronger terms, to be loved, just as anybody can learn to love his/her own body, appearance or self-image.

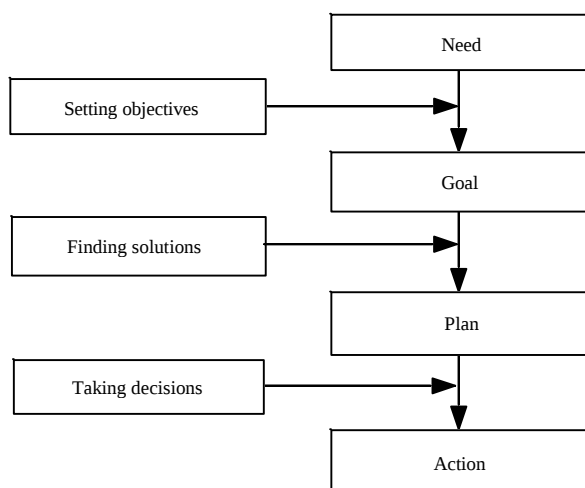
²⁴ Andre J M: *Technical aids: environmental control devices for rehabilitation. Trends, needs and challenges*. Proceedings 1st European Conference on Biomedical Engineering (Nice 17-20/2/91), pp. 70-72. Revue Européenne de Technologie Biomedicale, n.1/91

Under these conditions, end-users may become informed, demanding and responsible consumers who have firm opinions about the choice of AT, use it effectively and creatively, require quality devices and services, appreciate good design, and seek aesthetics and functionality.

2.2.3. How does AT knowledge contribute to empowerment?

As AT is instrumental in solving problems of daily life, AT knowledge is an *empowerment factor* when it helps to develop *problem-solving* and *decision-making* abilities.

Mere technical information on AT is not enough to meet this end. Of course it plays an important role in *empowerment* — without information one would lack the terms for choice — and thus is a *must* in educational programmes. However, the ultimate objective is not just to get knowledge, but rather to *take advantage* of that knowledge in daily life.



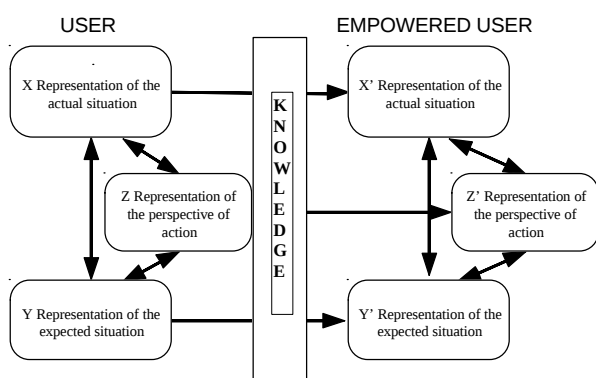
In order to understand what kind of knowledge is needed, we can look at the adoption of an assistive device as the final stage in a personal process comprising four steps: the identification of a *need*, the establishment of a *goal*, the definition of a *plan* and eventually a set of *actions*. In order to engage in this process, the person should be trained to *understand needs*, *set objectives*, *find solutions* and *make decisions*.

There may be cases where it is difficult for an individual to be fully independent in this process. However, it is always possible to maximise independence, for instance, by training to identify information sources or seek advice from appropriate services.

The first step is the identification of the need. This is by no means a trivial step; in fact it is often the most fundamental one. Each individual with disabilities continuously encounters new needs in the course of life, is challenged with the task of clarifying them, and has to make strategic decisions in response to them (e.g. Is this a real need? Is it realistic to accommodate it? and so on). At that stage the whole body of AT knowledge becomes useful: *those who know* are in quite a favourable position with respect to *those who do not know*.

Similar considerations may also apply to the other steps, but the further the process evolves towards concrete initiative, the more specific the required knowledge becomes. In other words, those who have been able to define a need, to establish that it is realistic to accommodate it, and decide to start the

process have overcome the first and most frustrating form of dependence: having other people deciding what the need is.



A need is not an objective attribute of the person; it is an individual or social construction of reality²⁵. A need felt by an individual in a given community might be regarded as nonsense by other individuals or other communities. Something is individually felt as a need when a gap is perceived between the *present situation* and a potentially *better situation*, and there is a feeling that some *actions* might be taken to move towards that better status. Thus the *representation of a need* results from the

interaction between the *representation of a present situation*, the *representation of an expected situation*, and a *perspective of action*.

The acquisition of knowledge modifies each representation, thus providing the end-user with more “power” to clarify his/her needs. However, knowledge transfer should not amount to mere transmission of notions, but should rather involve an injection of ability to 1) better clarify and expand each of the three poles, and 2) better reconcile their interaction. Attaining this ability is a substantial component of autonomy, and should therefore be a prime goal of educators. On the basis of this assumption, it is possible to say that knowledge facilitates *empowerment*.

2.2.4. What level of knowledge should the end-user aim at?

In principle, all the required knowledge should be in the hands of the person, but sometimes this may not actually be realistic. In such cases the missing elements of knowledge may be found somewhere inside the primary network, or sought from external advisors. There is no fixed rule on where the specific component of knowledge may be located: factors related to age, culture, pathology and available social services certainly influence the extent and depth of technical information that can be transferred directly to the end-user.

On the other hand, it is not necessary for the end-user to be a technical AT specialist: this is the expected role of rehabilitation professionals and technology providers. There are people who may be eager to acquire total command of technical topics, but the majority of end-users are generally quite satisfied with just a basic grounding in the specific AT that makes sense for their specific disability, provided they can resort to a qualified professional or peer advisers when needed.

²⁵ Bourgeois E. *L'analyse des besoins de formation dans les organisations. Mesure et Evaluation en éducation*. 1991; 14; 1

Again, empowerment does not mean “doing everything alone”, but being the *actor and protagonist of the process*. Sometimes this may also involve acting in partnership with professionals, deciding whether to follow their advice, or finding the most effective compromise when faced with insurmountable financial barriers: it certainly does not mean *depending* completely on the decision of professionals.

Educators should be aware that providing exclusively *theoretical* knowledge (e.g. the design principles of a wheelchair) or exclusively *practical* knowledge (e.g. the ability to drive wheelchairs) may not guarantee that the end-user can manage any daily-life situation related to the choice or use of AT: each individual is challenged everyday with quite different problems. Therefore, it may well be necessary to provide some *procedural knowledge* (problem-solving “algorithms”, i.e. how to sort out any possible situation) and *know-how* (strategic skills)²⁶. The challenge facing the educator is to find the appropriate mix of knowledge to offer the user.

2.2.5. Managing effective relationships with personal assistants

Persons with severe disabilities often need a certain amount of personal assistance, and this may be provided in accordance with a contractual scheme by formal helpers (hereafter described as *personal assistants*), or sometimes by *informal helpers* (family members, friends, colleagues and so on). Opting for formal or informal assistance may be a matter of personal choice, cultural background, the amount and complexity of the required assistance, financial resources, availability of personal assistance services or public schemes, etc. In some countries, personal assistance has long been a matter of public attention, while in others it is not even considered by social services and is still regarded exclusively as a private matter.

This is not the place for a dissertation on personal assistance in itself; what is important at this stage is to reflect on the relationship between AT and personal assistance.

Personal assistance is sometimes an alternative option to AT. Sometimes it is a baseline support for the disabled person, in that s/he could not manage otherwise, even with the most sophisticated devices. Personal assistance and AT are often complementary. Although the reader might initially baulk at the idea, it is correct to say that in broad terms personal assistance can be considered a *technology*²⁷. This is consistent with the earlier definition of the term “assistive technology”, where *technology* chiefly means a “way of doing things”. It is not reductive towards personal assistants, since it does not mean at all that they should be regarded as “devices”. The objective of this approach is only to highlight the close link between AT and personal assistance, which makes it necessary to consider the topic *personal assistance* in AT educational

²⁶ Malglaive G. *Enseigner à des adultes*. Paris: PUF, 1990

²⁷ Andrich R, Ferrario M, Moi M: *A model of cost outcome analysis for Assistive Technology*. Disability and Rehabilitation 1998; vol.20 n.1, 1-24

programmes. Discussing the respective roles of AT and personal assistance fosters understanding of how to strike the right balance between assistive devices and human help case by case, depending on the level of dependence on either form.

Personal assistants are not machines; they are human beings that differ from one another. So, what fundamental aspects of personal assistance ought to be included in end-user education, especially when this assistance is to be provided by formal helpers? Two main aspects warrant consideration. Firstly, if users need to learn *how to use* their AT, likewise they should learn *how to train* their personal assistant. Secondly, the relationship with a person is not like interacting with a machine: it is not a matter of managing a technique to do things, but rather management of a *human relationship* and *work organisation*. End-users should be encouraged to establish a *respectful relationship* and clear *contract* with personal assistants, whereby the assistant has clearly defined *duties* to perform for the user's autonomy, but also has *rights* as a worker. In other words, end-users should learn to take the sort of responsibility that employers take towards their employees.

The situation is somewhat different and more delicate with *informal* assistants. Here it may be inappropriate to speak of work organisation, duties and rights; rather, it is a matter of shared life experience. However, to ensure a long-lasting and respectful relationship that both parties feel comfortable with, greater attention is called for.

These aspects should not be underestimated. Educators can play a major role in helping people with disabilities to establish an effective and rewarding relationship with personal assistants.

2.2.6. Peer counselling and peer mentoring

A person with disabilities who has gained sound knowledge and experience in using assistive technology can be invaluable to other disabled peers in finding solutions to their needs. He or she can help peers understand their individual situation better, give information, motivate, and serve as a model. The assistive relationship through which one person can help another to clarify needs and widen perspectives on life is often called *counselling*²⁸.

Professional counselling is carried out on the basis of professional expertise, as the term implies. It is a consolidated technique in the field of psychology, where the relationship between the helper and the client is clearly established, as indeed are the objectives and the respective roles.

Peer counselling, on the other hand, is carried out exclusively on the basis of personal experience, and is limited to aspects of life that are common to the

²⁸ International Round Table for the Advancement of Counseling: *Proceedings of the 16° IRTAC Congress*. Vienna: AUVA 1987

two actors: e.g. the experience of disability or the experience of using AT, areas in which both persons can be considered “peers”.

When delivering training in AT, it is worth considering that each end-user is a potential candidate for the role of *peer counsellor*, in that his/her experience can be helpful to others. However, knowing a topic does not necessarily mean being able to transmit the knowledge to others: there are personal qualities that need to be developed, like the ability to listen, empathy, and the ability to focus on what others need instead of explaining “everything I know on the subject”. Clearly not everyone possesses these qualities to the same degree, and hence some people are better suited to peer counselling than others. Nevertheless, these qualities can be shaped and enhanced to a certain extent. All this means that it is a good idea to include some *peer-counselling training* in educational programmes.

Another form of *peer help* is so-called *peer mentoring*, which is somewhat similar to peer counselling but is built on a more long-term relationship of personal confidence²⁹. The mentor concept evokes the idea of a wise and trustworthy person who can serve as a guide in the course of an adaptation process, for example when starting out with independent living. As far as AT is concerned, an expert user may serve as *peer mentor* when s/he assists a novice user to get the best from the new device.

Although the distinction between the two concepts is somewhat blurred, we can say that the *peer counselling* process is mainly aimed at facilitating a choice, while *mentoring* facilitates adaptation to the outcome of choices or contributes when training to get the best from them.

Clarifying these terms is important: *peer counselling* and *peer mentoring* should be used when the help is *provided to a peer on the basis of personal experience*, and *not* on the basis of higher-level knowledge in the field. This means that an AT adviser who has a disability should be regarded as a *professional counsellor*, the professional knowledge being in this case in the forefront when dealing with the client.

²⁹ AA.VV.: *Tools of the TRAID*. Rochester: G-FL TRAID, 1997

3. Setting objectives and adopting methods

This chapter looks at the various kinds of knowledge transfer processes that can be activated for end-users, and clarifies which of them are to be considered “educational”. It also points out some major factors that influence the effectiveness of an educational process, like motivation and teaching methods, and suggests a consistent terminology for classifying educational initiatives.

3.1. Methods for transferring AT knowledge

3.1.1. Knowledge transfer processes

As stated earlier, each end-user should be provided with the maximum amount of sustainable and useful knowledge. But what does “sustainable and useful” mean in practice? And how should knowledge transfer be performed with a view to empowerment?

We shall start by identifying five different processes by which AT knowledge can be transferred:

- *counselling*
- *teaching*
- *training*
- *information*
- *awareness campaigns.*

Although different in scope, these processes are complementary; they can be considered as steps in a continuum and as such are often activated simultaneously. *Awareness campaigns* pave the way for the modification of attitudes in the general public. *Information* activities circulate news about innovation within a large audience of interested people. *Teaching and training* are instrumental in increasing people’s knowledge and competence on given topics. *Counselling* is often the key to solving specific individual problems. Thus each process provides a role, an objective, a specific contribution to facilitate the empowerment of end-users.

Awareness campaigns can be looked upon as a background process addressing a wide and general public rather than individual end-users. An awareness campaign draws attention to specific issues with the intention of shaping attitudes towards them, often by means of carefully chosen advertising

techniques. In the disability field, the campaign often targets prejudices, and thus focuses on general topics. For instance, video clips have been broadcast that challenge the out-of-date image commonly held of people with disabilities as poor, weak people in need of help and assistance. These clips show persons with disabilities independently performing daily activities with the aid of attractive assistive devices, doing a job, helping other people in trouble, playing a vital role in particular situations. There are also campaigns with quite different objectives like fund raising, often carried out as part of important mass-media events. In order to be effective, these often exploit the emotional impact on the audience, and sometimes run the risk of reinforcing social prejudices rather than combating them. Finally, there are campaigns whose specific objective is to advertise an event.

Through an *information* process, relevant notions are given to end-users so that they have the opportunity to increase their technical competence on a specific topic. As such, information is in principle addressed to a large audience. Typical methods of delivering information include product presentations, exhibitions, articles in the press, pamphlets, catalogues, web sites, Internet discussion areas, and one-off conferences that are not part of a teaching or training programme.

Counselling is a one-to-one help relationship through which a counsellor can help a client to clarify needs, possible solutions and plans of action. It is mainly a support for *solving specific problems*.

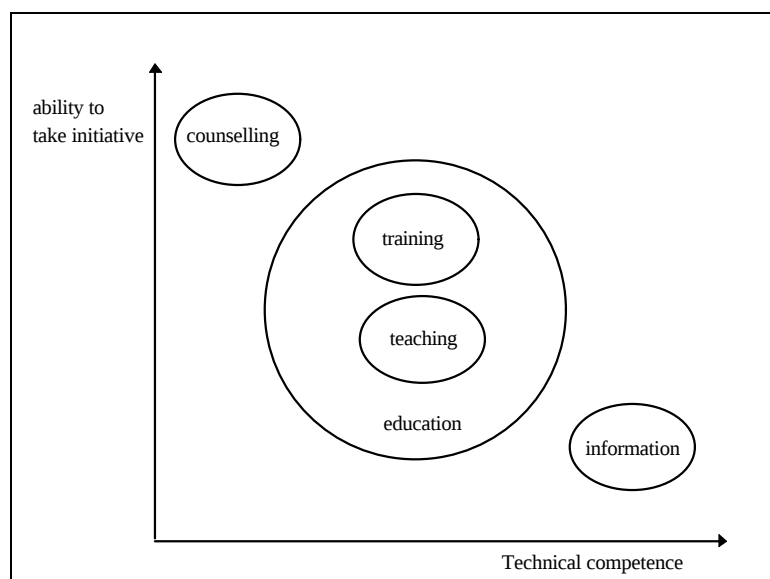
Teaching and *training* are specifically targeted at *personal growth* and are the only processes here that can be described as *educational* in the strict sense of the word. Hence in this book they will often be referred to jointly as *education*.

Obviously, information, counselling and awareness campaigns may sometimes have educational value. However, at most they should be looked upon as opportunities that contribute to education, and not educational processes in themselves.

3.1.2. Technical competence vs. initiative

Counselling, *training*, *teaching* and *information* can be positioned differently according to the stress they put on *supporting initiatives* or rather on *providing technical competence* to end-users.

The diagram below gives a simplified view of how the four processes complement each other. The two opposite poles are occupied by information and counselling. By providing notions, *information* increases the end-user's technical competence, however this does not mean that he or she will be able to use it for taking initiative and solving a personal problem. Conversely, *counselling* primarily helps the end-user to sort out a problem; it may involve the delivery of some technical competence, but this is strictly tailored to the user's need and is subordinate to the main objective, i.e. supporting initiative.



Education occupies the space in between. It strikes a balance between competence and initiative, while *training* places a somewhat stronger accent on the latter.

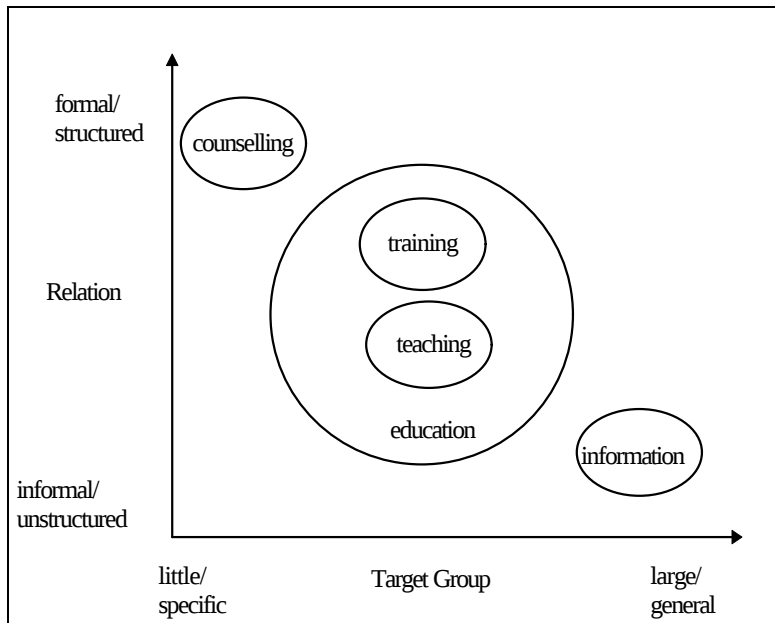
To make an example, an individual who has mobility problems may get a number of ideas for possible solutions by looking at catalogues, visiting an exhibition, browsing the Internet or attending product presentations. In this way s/he gets *informed*, and undoubtedly becomes more

inclined than before to take initiative. However, selecting the most effective and useful solution (which also means investing money, time, effort, etc) may not be so simple. Information in itself is not enough, so it may be a good idea to seek appropriate *counselling*. In this way the individual can get help in preparing for the adoption of, say, an electronic wheelchair. This raises questions like how the device is likely to modify the person's lifestyle and family organisation, how much training is needed, what adaptations are required, whether any clinical or technical drawbacks exist, basic usage and maintenance of the device, how cost effective it is, whether there are plausible alternatives, what funding sources are available, and so on. Considering all these matters can help when making a decision, one that often has a strong impact on the individual's life.

However, if the individual had the opportunity to access AT educational initiatives, his/her potential in dealing with problems and solutions is greatly increased. Higher level knowledge of AT basics and specifics expands life perspectives, generates skills in identifying needs and formulating solution strategies, as well as helping when seeking appropriate information or counselling resources. To put it metaphorically, *information* displays fishes and *counselling* indicates the fish to catch, whereas *education* provides the fishing rod and illustrates the art of fishing.

3.1.3. Target breadth vs. relationship with the target

The four processes can also be positioned differently according to the relationship with the target group and its breadth.



Counselling involves a clearly defined and structured relationship between a counsellor (a professional or a peer) and a client (the end user). Conversely, the relationship between the producers and recipients of *information* is not governed by specific rules and is thus more informal. In *educational* activities, the relationship may be more or less structured depending on the chosen educational approach. However, it is more formal/structured than in information activities, and more informal/unstructured than in counselling.

The four processes also differ in the kind and number of people they address: while *counselling* is primarily addressed to a single individual, *information* may extend to quite a large and undetermined public. Again, educational activities lie somewhere in between.

Within an overall programme to support the empowerment of people with disability in a community, each of these processes is absolutely necessary, and all may work together.

Let's consider a users' organisation that wishes to prepare end-users for a change that has just been introduced into the national AT delivery system. This organisation may start by providing *information* about the system's new concepts, the main differences in comparison to the old system, and the range of AT covered. To this end it may compile and disseminate a specially produced leaflet with appropriate language and format. In parallel, an *awareness campaign* may be conducted through the media so as to attract attention and deliver the basic message (e.g. "something has changed, so get informed!"). Other information initiatives may include conferences open to anyone interested, where experts, policy makers and other speakers outline and clarify the new situation.

At the same time, the organisation may also set up a *counselling* service that gives each end-user the opportunity to obtain guidance on the implications in his/her specific case.

Finally, in order to maximise end-user autonomy in making effective use of the new system, the organisation may hold *educational* courses. These *teach* users the details of the new system, and include exercises or simulations to *train* them how to manage in the most common cases. For each course, factors like group composition and size are decided according to specific criteria, learning

objectives are established, pedagogical methods are selected, timing is decided, and, where an attendance certificate is issued, consideration is given to the use that can be made of it.

3.1.4. Educational processes

Teaching and *training* are educational activities in the strict sense of the term. The boundary between teaching and training is quite blurred; they might even be looked upon merely as different education styles. In fact, both often coexist within the same educational activity.

Through *teaching*, an overall level of understanding, competence and problem-solving capacity is provided regarding a specific subject or knowledge domain. *Training* focuses more specifically on practical knowledge: it provides abilities and skills for coping better with the subject.

As an example, let us take the case of a users' organisation that decides to conduct education for personal assistants. First, the learning needs should be established. Secondly, to ensure that trainees achieve a satisfactory level of competence and ability, certification criteria may be established, thus calling for an examination. The certification policy may also include aspects that are external to the organisation, such as accreditation by other educational or governmental bodies. Finally, a set of *teaching* sessions and *training* sessions is planned. The teaching sessions set the framework and provide a comprehensive view of a topic, e.g. the rationale, methods and implications - depending on the various disabling conditions - of helping a person with severe motor impairments in bed/wheelchair transfer. The training sessions allow trainees to make use of that knowledge in real life, e.g. by trying out a sling hoist with real people in a simulated home situation.

Many methods exist for combining teaching and training. These include:

- separate, co-ordinated theory and practice sessions;
- single sessions where the topic is set in an initial plenary session (teaching) followed by practical training in small groups under the guidance of a tutor;
- full teaching courses - or set of seminars - followed by a number of practical workshops.

It should be made clear that training relates to the development not only of "manual" abilities, but also of organisational, relational or psychological abilities, and so some training methods may be more appropriate than others. This consideration is particularly important from the empowerment perspective, which calls for appropriate attitudes towards AT and towards disability issues in general.

3.1.5. Unlocking the spring: the motivation issue

These days there is solid consensus among educational scientists that one of the most important learning factors is *motivation*. This can be seen in two ways: *motivation to learn* and *motivation to change*.

It is not possible to fill people up with knowledge as if they were just empty bottles, or stuff them with information as if they were turkeys. When the bottle happens to be corked or the turkey is overstuffed the knowledge or information will be lost. Educators face a challenge when seeking to achieve lasting improvements in learners' knowledge: how to involve learners in the learning process; how to kindle and nurture the motivation to learn; how to facilitate a positive attitude towards the perspective of personal changes.

Motivation to learn

While in the past many educational scientists thought that motivation was just one of the various learning “tools”, one that could be induced by *positive reinforcement*, most now believe that learning can be considered a *motivating activity in itself*. Consequently, great importance is now given to the role of *personal discovery* and *individual curiosity*. Researchers also stress the importance of *motivation to personal success*.

Probably, all the above facets (fulfilment-centred, task-centred, self-centred) coexist within each individual and interact with each other. Each should thus be stimulated, depending on the specific knowledge transfer process and the trainee's individual attitudes.

Task-centred motivation and *self-centred* motivation are probably the most important factors within *teaching* activities, since the objective is to learn contents. Conversely, *positive reinforcement* - when correctly used - may be very helpful in *training*, where individual experimentation is paramount; the reinforcement may come not only from the teacher, but also from the actual improvements experienced by the trainee. Satisfaction at “having been able” starts a virtuous circle towards new learning.

In group situations, the most common case in educational activities, the teacher may find it difficult to pay sufficient attention to the individual motivations, opinions and needs of each trainee. The problem may be solved by means of attractive educational material and proper pedagogical techniques (e.g. explaining the objectives before starting the lesson, summarising the upcoming issues, stimulating meta-cognitive reflections, etc). On the other hand, the group situation offers some remarkable advantages at motivation level: groups can be co-operative by nature, and help foster emulation and competition - situations that can be used as a positive learning factor.

Consequently, it is important for educators to:

1. ensure that task objectives are explicit and shared;
2. verify that trainees are completely engrossed in the task;

3. encourage each member to succeed;
4. discourage demotivating attitudes;
5. maintain an “optimal challenge balance” between new information introduced, new abilities demanded and each trainee’s previous knowledge;
6. use quality educational material and active teaching techniques, so that the learners stay alert and their energies are not wasted;
7. activate co-operative processes and make positive use of the spirit of competition for common objectives;
8. use meta-cognitive activities such as planning schemes, summary grids, guided discussions, etc. that let each trainee verify his/her learning, thus refreshing his/her motivation to carry on.

Motivation to change

The motivation to change - also called *effectance* motivation - is strictly connected to the individual’s past experience; it concerns the ideas a person has already developed about his/her ability to learn and change.

This type of motivation comes strongly into play in the case of social learning. A person who has already accumulated a considerable number of failures in the course of his/her life may have experienced negative judgements, resulting in a lack of motivation to face up to new tasks or changing perspectives. For instance, over the years a person with disability may have experienced unpleasant or frustrating interactions with the environment, resulting in reduced drive to pursue new challenges.

Motivation to change is very important in AT education, given the enormous impact AT has on the end-user’s life. A good teacher should be able to stimulate positive attitudes towards such changes. When setting tasks for trainees, the teacher should carefully weigh up the difficulties involved and find the so-called “optimal challenge”. The task should not be too demanding, otherwise the learner may be discouraged, nor should it contain unnecessary logical implications because these might make it unnecessarily difficult. On the other hand, it should not be too simple, otherwise trainees may depreciate its quality, nourish feelings of disesteem, get bored and lose motivation. Satisfaction arises not just from meeting challenges successfully, but also because those challenges are the optimal ones for the trainee at that moment. In this case a positive reinforcement takes place, which in turn triggers positive feedback towards new shifting, exploration and change.

Educators should never forget that all learning tasks are inseparably linked to emotional and motivational factors. In order to obtain the desired change, a balance must be struck between the nature of the specific educational activities being carried out and trainees’ cognitive and emotional characteristics.

3.2. Structuring educational activities

3.2.1. Providing the fish or the fishing rod? Focusing on active attitudes

The EUSTAT survey of ongoing AT educational experiences revealed a wealth of initiatives, some recently launched and others well consolidated. Those that originated in user organisations seem to share a common history: they set out in a “pioneering stage” with high hopes and sometimes overwhelming enthusiasm about the initial intuition, and then settle into a “maturing age” in which experience has been accumulated, command of methods has been achieved, effective educational material has been developed, and contacts have been established at regional, national or international level for sharing views with similar organisations. In most cases the initial intuition, based on real knowledge of the end-users’ need, does not get lost but is rather exploited as the organisation acquires experience. Without suitable intuition, the end-users’ learning needs may not be properly understood; thus an educational initiative may well fail even if designed by an experienced educational agency.

Such intuition is generally related to the idea that knowledge promotes empowerment. In this view it is not felt sufficient just to make notions available for those who do not yet know them – *giving out fish* to hungry people, in metaphoric terms. Such *fish*, even if absolutely “fresh” and presented in an attractive manner, can feed and satisfy just once. Decades of educational experience addressed to socially or ethnically disadvantaged groups suggests that effective educational processes are those that generate changes in the individual or social group’s history, enable them to stand on their own feet and provide them with the instruments to proceed on their own in personal growth; in brief, *providing the fishing rod and illustrating the art of fishing*.

How can this process be activated?

Several eminent educationalists have found ways. Lorenzo Milani (Italy, 1923-67), for instance, brought about an upheaval in teaching methods by substituting traditional lessons with live activities linked to thought, decision and choice. In his schools, a notion had to be understood, weighed up, looked at from various perspectives, sought from different sources, and possibly discussed with protagonists. In his view, learning should be verified through its practical application in real life. Celestin Freinet (France, 1896-1966) is said to have turned the old wooden desks and the inkpots upside down, transforming his classroom into a printing works: he taught his pupils to manipulate lead types until a text is ready. Teachers who believed in the educational usefulness of this approach started the so-called “Movement for Typography in School”. For John Dewey (USA, 1859-1952), known as the leader of the *activist pedagogy school*, thought begins with action and releases action: any shift in thought is a new organisation of experience. His “philosophy of experience”

gave new substance to the feeling of human solidarity and raised new interest in the social importance of education: experience is the interaction between the human being and the environment, and is thus social in nature.

If we try to worm out the secrets of these and other great educationalists, we will find that the common thread is the special attention towards the induction of active attitudes in students. Case by case, this is achieved through concrete examples, through the adoption or construction of new instruments, through experiencing different roles, or even through the careful implementation of experimental methodologies. The enemies of learning are the passive attitudes of suffering without reacting, being present without taking part, and having the mind elsewhere. This seems to be confirmed by the EUSTAT survey: several organisations stated that they pay special attention to activities that actively involve participants, or said they were dissatisfied with courses based only on traditional academic lessons.

The educational sciences have made available a wide range of methods for stimulating active learning: examples, experimentation, exercise, simulation, role-playing and many other techniques. These can help put learners in the right situation, allow them to test a new condition, and get total involvement. Educationalists suggest that a plurality of methods is better than monism, and so the use of a mixture of methods in an educational initiative is preferable to one single method.

However, active involvement requires caution, patience and experience. Organising participants in groups, asking them to prepare tangible summaries of their group work (e.g. a written report or a speech), setting up role-playing sessions where someone tries playing somebody else's role (e.g. a rival's role in life), or even just asking a person to publicly express a personal opinion: tasks like these expose individuals to each other and this may make some people feel uncomfortable or even frightened on occasions. Educators should constantly check everybody's "emotional temperature" and devote pedagogical and psychological attention. At the same time, they should be amenable and amusing, protective and innovative; none of the trainees should feel obliged, exposed or ashamed. Many such risks can be prevented if the organiser is able to create a general atmosphere of harmony, well being and trust. These considerations mainly apply to longer *courses*, where there is enough time to get to know each other, and relationships may become meaningful. Moreover, generally speaking it is only in these courses that it is possible to implement emotionally demanding methodologies such as simulation and role-playing. Indeed, it is in these more demanding courses that such methodologies make special sense.

3.2.2. Types of educational activities

Educational activities may take a number of different forms that are labelled differently in various countries or cultural environments. So for clarity's sake it is important to use a consistent terminology. In this book, four terms will be

used hereafter to distinguish various types of educational initiatives: *courses, seminars, workshops and conferences*³⁰.

Courses

The term *courses* stands here for educational initiatives aimed at providing trainees with a comprehensive view and a satisfactory command of the chosen *theme*. The primary objective is trainee learning referred to a given body of knowledge and skills, and courses are therefore the most complete kind of educational activity. Course *duration* in terms of the number of hours or lessons may be considerable, and these may either be concentrated within a short period (a few days or a week for intensive courses) or spread over time (several months or even years) so as to foster gradual learning.

The theme may be quite general or very specific. The EUSTAT survey revealed various examples of both approaches. For instance, a course for *disabled leaders* organised in 1997 by the Dublin Centre for Independent Living (Ireland) dealt with general issues such as “Various Models of Disability” or “Rights of People with Disability”. A course for *peer counsellors* organised in the same year by ISL in Erlangen (Germany) focused on the specific theme “Peer counselling: Bases for Conducting a Peer Counselling Meeting”.

A course may be delivered by a single teacher or by a group of *teachers*. It may include *training* activities such as *practice sessions*, where the participants have the opportunity to experience the notions received in lessons. This is particularly important in AT courses, since assistive devices need to be touched, tried out, dismantled and adjusted in order to get full command of them.

Following recent advances in pedagogical science, traditional lectures are giving way to more active *didactical methodologies*, where trainees are challenged to build knowledge together. This generates a lively relational and educational context that allows for more individualised and lasting learning.

In most cases, a course addresses a selected *target*, in terms of the number and characteristics of trainees. When the trainee group is relatively small and the number of teaching or training hours is high, it is possible to take advantage of the *relational aspects* of learning. The relationships established among participants, especially in residential courses, play an important role in the course’s ultimate success or failure, and thus deserve attention by both organisers and teachers. An atmosphere of comfort, well being and co-operation is not only welcome, but also instrumental to educational objectives. Organisational aspects and logistics also play a major role in building such an atmosphere.

³⁰ UNESCO European Centre for Higher Education: *Multilingual lexicon of higher education*. Paris: K.G. Saur, 1993
 See also: Education 2000: *Dictionnaire actuel de l’éducation* - 2eme edition. Montreal: Guerin 1993
 See also: *UNESCO Thesaurus*. Paris: UNESCO Publishing, 1983

Seminars

The term *seminar* is rooted in the university tradition, where it identifies *teaching* activities that are complementary to lectures: for instance, sessions where students can listen to a leading expert who provides details and up-to-date notions on a theme that in the regular course is merely presented and outlined.

In a more general context, the *seminar* can be defined as a special “place” in education attended by people who are specifically interested in that particular theme, one that stands out for the quality and actuality of the notions provided, and for the speaker’s prominence. A *seminar* is typically held over a single day, occasionally lasting two or more days; it may be stand-alone or part of a course, and may sometimes be one of a *series of seminars*.

The theme of the seminar is usually a “hot topic”, e.g. “new advancements in car adaptations allowing independent driving for people with severe impairment”. Generally the public is not pre-selected by the organiser (unless practical constraints make this necessary), since this kind of initiative attracts interested people. Unlike courses, the primary *objective* of a seminar is not to *achieve learning*, but rather to *offer an opportunity* for interested people to refresh, broaden or update their knowledge on the topic. For these reasons, mainly traditional *didactical methodologies* are adopted, such as lectures supported by educational aids or learning material. Sometimes more active tasks like team work or short practice sessions are organised, but to a very limited extent. The key to the success of a seminar lies in the ability of the *lecturer*.

When a series of seminars is organised around a given subject, and these are attended by the same audience, the borders between seminars and courses may become blurred. The distinction depends on the educational purpose the organiser has in mind: *learning* is the keyword characterising a course, while *refreshing, broadening and updating* are typical keywords of seminars.

Workshops

Some characteristics of seminars like duration, specificity and sporadic nature are also shared by workshops. The difference lies in the fact that workshops are typically *training* rather than teaching initiatives.

A workshop focuses mainly on practice, and the objective is for each participant to achieve a set of abilities. For example, a typical workshop on a theme like “Alternative Input Systems for Computers” may include hands-on sessions with devices, discussion of pros and cons, reports on usage experiences, etc. Even if the theme is often set within a theoretical framework, this is instrumental to the better understanding of the practical experience that is to follow or has just finished.

Workshops are addressed to a well-defined *target* of interested people. Unlike seminars, they may call for a restricted number of participants that is manageable in hands-on sessions and discussions. A *teacher-lecturer*, sometimes supported by tutors, introduces the theme and assists in the sessions when needed by providing further explanations. The *logistic* requirements may sometimes be very detailed, including rooms for parallel groups, space for trials, multimedia equipment for presentation, and so on.

Conferences

Conferences and *roundtables* chiefly fall into the category of *information* activities (a roundtable can be considered a particular conference format where speakers put their views). However, they may sometimes be integrated into educational strategies when held in parallel with courses, seminars or workshop, or when part of a *series of conferences*.

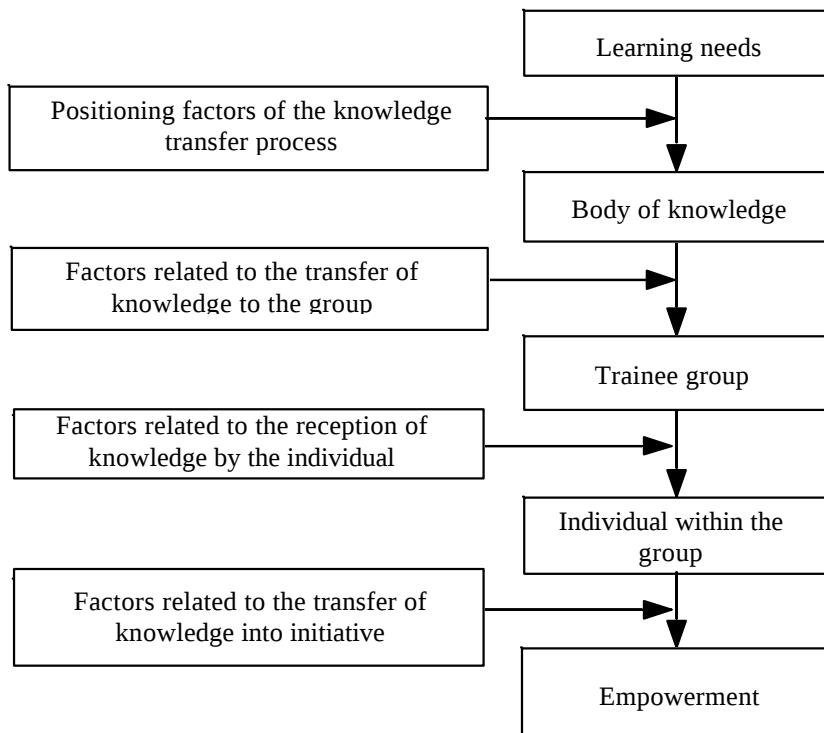
Their main *objective* is to inform a wide public, to generate awareness of a certain theme, or occasionally to introduce themes that will be developed later through courses, seminars or workshops. A conference generally lasts several hours, and often ends with a public debate. The main speakers are not always technical experts; sometimes keynote speeches are delivered by policy makers or testimonials. It is not uncommon for a conference or roundtable to be organised in proximity to a course or series of seminars.

3.2.3. **Critical factors in the educational process**

Armed with the concepts discussed so far, we can now try to identify and classify the major factors to consider when designing educational initiatives. We shall label these as *critical factors*. The term “critical” is not used here as a synonym of “positive”, “negative” or “problematic”: it just means *deserving consideration* and *requiring decisions*. The success of an educational initiative will depend on such decisions. In our context, the term of reference for measuring success will be the extent to which the end-user achieves the expected ability to make informed, effective and satisfactory AT choices.

Most of the critical factors described below are interrelated. Decisions taken in relation to one critical factor may reflect upon many others, so the design of an educational initiative is often an iterative process that seeks to accommodate all factors, sometimes also seeking satisfactory compromises. The *organiser* is the person who sets priorities and takes decisions in response to the specific context.

The following classification is an attempt to bring critical factors to the fore and to sort and describe them with consistent terminology, so as to offer the organiser a *checklist* of aspects for consideration.



Although no inherent hierarchy can be established beforehand, it is possible to identify a number of steps through which learning should take shape in the mind of the organiser. The body of knowledge is identified as a response to the need, and is made instrumental to end-user empowerment. By following this path, it is possible to identify the factors that exert influence at each stage, and group them into

four main clusters:

- *positioning factors*;
- *factors related to the transfer of knowledge to the group*;
- *factors related to the reception of knowledge by the individual*;
- *factors related to the transformation of knowledge into initiative*.

Positioning factors

When setting out to design an educational initiative, by and large the organiser has a policy in mind that defines, even if at a very general level:

- the learning needs he/she wants to address;
- the target (What kind of people does the initiative address? Small groups or large groups?);
- the level of structuring;
- the scope of the knowledge to be provided (What competence level? What ability level?)

The decisions taken in this respect define the *mission* of the educational initiative, and so we can label these factors as *positioning factors*. The concept of positioning is borrowed from marketing terminology, where it indicates in strategic terms the public to which a product is addressed; indeed, although they are usually offered outside any commercial scheme, educational initiatives

can also be seen as “products” addressed to an audience. For instance, the diagrams in Sections 3.1.2 and 3.1.3 show how educational initiatives can be *positioned* with respect to the axes initiative/competence and structuring/target. The identification of a learning need is the starting point for all the process. However, there may be a gap between the learning need that the organiser *decides* to address and the one that *should* be addressed, or at least a bias expressed towards the former. This may result from the corporate strategy of the organising institution, the experience of the organiser, or environmental constraints. Similar external ties may also exist for the other positioning factor: in real life an organiser is seldom in the position to do whatever he/she would like to do, or to do whatever is required to meet the need. The definition of the mission is quite a delicate step: a mission should be *meaningful* and *feasible* at the same time.

Factors related to the transfer of knowledge to the trainee group.

Educational activities are usually directed towards groups of people. Criteria should be established to define who is going to take part in the group, e.g. anybody interested, those who share a common situation, or very specific groups. Decisions have to be taken on aspects like contents, knowledge transfer methods and practical organisation. The choices made at this stage will have an impact on the effectiveness of knowledge transfer to the trainee group, and in turn to the individual trainee. Four classes of factors can be identified:

- pedagogical factors
- content factors
- targeting factors
- management/organisational factors

Factors related to the individual’s reception of knowledge

Individual trainees may not all receive or interiorise the body of knowledge being transferred to the group exactly in the same way or to the same extent. There may be personal factors that affect interest in the topics being taught, the subjective perception of their importance, and the level of attention or concentration. There may also be factors linked to the individual’s background that have an impact on readiness to learn some topics. These factors should be given due consideration in the design stage, as neglecting them might lead to overall ineffectiveness of the educational initiative; they can be properly accommodated in the methodological and organisational decision-making process. Again, four classes of factors can be identified:

- predisposition factors;
- disability-related factors;
- individual attitudes towards disability;
- individual expectations.

Factors related to the transformation of knowledge into individual initiative.

When trainees go back to their daily life environment, they will be the protagonists in their lives and the main decision-makers. Each trainee has to grasp opportunities in the local community, such as available services (e.g. information and counselling), as well as cope with the physical or organisational barriers that may hinder the access to them. The freedom of choice may be restricted by limitations like the unavailability of products, the financial burden, or cultural attitudes. Conversely, it may be enhanced by high-quality service delivery systems, excellent product supply services, or affirmative legislation. The organiser should also bear in mind differences in trainees' living environment: for instance, training a group of people from different countries with different socio-cultural environments may bring into play organisational or methodological considerations that do not apply when training a group of people from the same region. Likewise, if the organiser is aware of market barriers in the community, s/he may decide to give more room in the training curriculum to aspects that are not so critical for trainees who enjoy excellent AT service delivery. On the whole, four classes of factors can be identified:

- environmental factors
- social support factors
- market factors
- social network factors.

An example...

Many examples can be made of how all the above factors interact with one another in the design of an educational initiative. For instance, a user organisation may be planning a set of conferences that give a general introduction to AT. Some decisions concerning *positioning factors* are already embedded in this idea: a learning need (people should know AT basics), a target (all persons with disability or those interested in AT in the community), and a format (the conference) that is geared towards transferring competence rather than ability and which can meet the expectations of a potentially wide general audience. However, before proceeding, the organisation recognises that social attitudes towards disability in that community (*environmental factors*) still represent a hindrance that may compromise a positive reaction to this initiative. In response, the organisation may employ suitable advertising techniques (*management/organisational factors*), or choose attractive speakers (*pedagogical factors*), or may even reconsider the whole idea (*positioning factors*). In the last case, the organisation may decide to scrap the conference in favour of a course addressing a restricted target of people who are likely to play the role of disabled leaders in the community (*targeting factors*). The training method (*pedagogical factors*) is chosen in such a way as to meet the *predisposition factors* of each trainee, while the educational programme (*content factor*) remains the same in principle.

This is just a simple example. The following chapters contain detailed examination that will assist the organiser to make decisions with respect to critical factors.

4. Organising educational initiatives

This chapter looks at the structure, contents, methodology and organisation of educational initiatives. It analyses the critical factors related to the transfer of knowledge to trainee groups, and offers a guide to decision-making about those factors so as to give concrete shape to an educational initiative.

4.1. Defining contents

4.1.1. The HEART Model

The target groups and objectives of AT educational activities for end-users may differ so widely that any attempt to define a standard curriculum would be unwise or even impossible. Consequently, the objective of this chapter is to provide *organisers* with "topic specifications" that might be considered when designing an educational initiative.

As explained earlier in the definition of the term "assistive technology", several models have been developed for classifying AT, some for specifically educational purposes. The model that the EUSTAT researchers considered the most appropriate for end-users' education is based, with some modifications, on the HEART model³¹. This was originally developed within the EU's TIDE Programme for AT training of professionals.

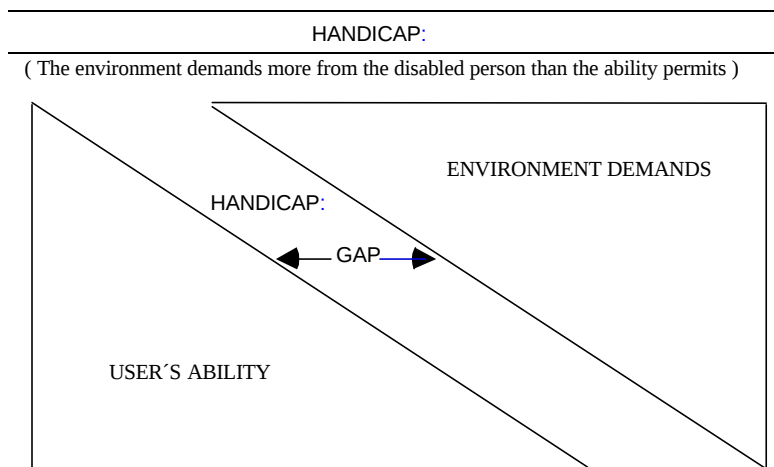
Since the main objective of AT is to use *technology* to help overcome functional limitations of *human beings* in *social* contexts, it is of the utmost importance to examine not only purely technical aspects, but also related human and socio-economic issues, which are just as important. The way AT is used is greatly influenced by both the user's characteristics and the physical and social environment. As a consequence, three major areas within AT education are suggested, hereafter referred to as **technical**, **human** and **socio-economic** components.

HUMAN	TECHNICAL	SOCIO-ECONOMIC
Figure 4.1: Areas of education and training in Assistive Technology		

As stated in the HEART study, "A model for education in AT must be based on a model of human development that takes into account the problems that persons with disabilities face in adapting to an 'adverse' environment...". Persons with disabilities may experience handicaps that AT can help overcome.

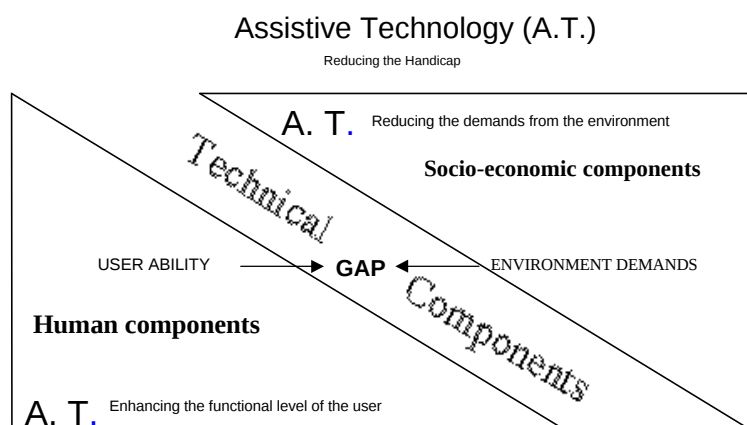
³¹ HEART. Line E. *Rehabilitation technology training - E.2.1. Report on job profile and training requirements for rehabilitation technology specialists and other related professions*. Brussels: European Commission, 1994

A handicap occurs when there is a gap between the *individual's performance* (ability) and the *demands of the social and physical environment*³². The following figure schematises this concept.



The handicap can be diminished either by reducing the demands of the environment and/or by enhancing the functional level (ability) of the end user. AT plays an important role in either case. Therefore clear understanding of the use of AT presupposes on the one hand thorough knowledge of its technicalities (*technical components*), and on the other an understanding of the human being who uses AT (*human components*) as well as the physical social and

economic demands of the environment (*socio-economic components*). Any educational model should integrate these three components. The following figure schematises this concept.



Within the *technical components*, four main areas of educational importance can be identified:

- communication
- mobility
- manipulation
- orientation.

Most AT topics fall directly within one of these subjects (e.g. “powered mobility” clearly falls within “mobility”). Nevertheless, there are some topics whose position within subjects is

somewhat arbitrary. A good example is the topic *seating and positioning*, which is classified under *mobility* in that it is clearly a major prerequisite for the study of mobility devices, and the teachers’ expertise on this topic is often associated to mobility issues. However, *seating and positioning* is also a prerequisite for many *communication* activities such as *computer access*, or *manipulation* tasks like *activities of daily living*. In these cases, our approach is pragmatic: such topics are classified within the subjects where they are usually dealt with in greatest depth.

Human and *socio-economic components* can be considered “horizontal” aspects, in that they refer to any kind of AT and are to be dealt with globally. The following table schematises this concept.

³² HEART, ib.

HUMAN			
SOCIO-ECONOMIC			
TECHNICAL			
Communication	Mobility	Manipulation	Orientation

The following section examines each component so as to provide educators with a guide for identifying the most appropriate topics for each educational initiative and assembling them into a programme that fits the target group and learning objectives. Educators should be aware that the various components – along with the various topics within a component - are not independent of each other; on the contrary, they interpenetrate as they refer to areas of functionality of the human being.

4.1.2. Technical components

Communication

Communication is the ability to generate, emit, receive and understand messages, interacting with other individuals face to face or at a distance in a particular social context³³.

Communication is a complex process of information transfer that individuals use to influence the behaviour of others³⁴. It involves the transmission of messages (thoughts and feelings, ideas and needs) from one person to another, with participants influencing each other in the course of the exchange. Communication skills are critical for developing and maintaining social relationships, for learning community living, and in general for the satisfaction of almost all human needs. So communication is an ongoing process that occurs throughout each daily activity.

Many of those with communication disorders may not be able to communicate effectively using human modes of communication. In this case, AT may enable these people to be competent communicators. Recent technical developments in areas such as telecommunications, computers and electronics have made available an enormous number of technical applications that may be useful for overcoming functional limitations in communication. The following table lists possible topics related to this subject.

³³ HEART, Ib.

³⁴ Orelove F P, Sobsey D: *Educating children with multiple disabilities: a multidisciplinary approach*. Baltimore: Paul Brooks, 1993

COMMUNICATION	
COMPONENTS	TOPICS
Interpersonal communication	- aided and unaided communication systems - low-tech devices, such as communication boards - high-tech dynamic communication boards - speech output: recorded and synthetic speech - selection techniques: direct, scanning, encoding - rate enhancement and prediction techniques - reading and writing techniques - hearing aids - voice amplifiers - optical aids
Computer access/user interfacing	- control interfaces (switches, joystick, track ball) - alternative keyboards (expanded, reduced) - keyboard and keyboard emulation - mice and mouse emulation - touch screens - head-pointers, mouth-sticks
Telecommunications	- radios, telephones (mobile, text, video), beepers - email systems - Internet and WWW
Reading/writing	- adapted books (books with symbols, books on CD or tape) - computers with screen readers and synthetic speech - devices with Braille output - specially dedicated software - magnification devices - OCR reading machines - tactile displays - Braille writers and embossers

Mobility

Mobility is the individual's ability to execute distinctive activities associated with moving oneself within the environment³⁵.

Mobility is fundamental to each individual's quality of life and is necessary for functioning in performance areas such as self-care, work or school, and play and leisure³⁶. Limitations in functional mobility (as in communication) can be overcome or reduced by the use of AT. The following table lists the possible topics related to this subject.

³⁵ HEART, ib.

³⁶ Cook A, Hussey S, ib.

MOBILITY	
COMPONENTS	TOPICS
Manual mobility	- manual wheelchairs - sticks, crutches, walkers - bicycles and tricycles - transport chairs - manual hoists and transfer aids
Powered mobility	- powered wheelchairs - scooters, carts, mopeds - powered aids for lifting and transfer - interfaces for wheelchair control - robotic arms for wheelchairs
Accessibility	- outdoor and indoor access aids - home adaptations
Private transportation	- special controls for driving - special seats - ramps and platforms
Public transportation	- adaptation of public vehicles - ramps and platforms - lifts
Orthotics and prosthetics	- lower limb orthoses - lower limb prostheses - orthopaedic shoes - gait functional electrical stimulation
Seating & positioning	- seating bio-mechanics and postural control - components of seating and positioning systems - cushions and pressure management

Manipulation

Manipulation is the individual's ability to control the physical environment in order to perform an activity. It also refers to the ability to regulate control mechanisms using any tool, independent of the part of the body used³⁷.

Manipulation is one output of the activities performed by persons with disabilities³⁸. The same authors also call attention to the fact that, at a very basic level, manipulation often refers to those activities normally accomplished by the use of the upper extremities, particularly the fingers and hands. Manipulation is taken to be the end goal of the individual's actions, independent of the way it is achieved. The following table lists the possible topics related to this subject.

³⁷ HEART, ib.

³⁸ Cook A, Hussey S, ib.

MANIPULATION	
COMPONENTS	TOPICS
Environmental control	- environmental control units (ECU) - user control interfaces (voice recognition, ultrasound, switches)
Activities of daily life	- self care (hygiene; incontinence; sexuality; clothing) - housekeeping (cooking; cleaning) - safety, alarm and signalling devices
Robotics	- manipulators and control arms - desktop robots - page turners - feeding robots - grippers
Orthotics and prosthetics	- upper limb orthoses - upper limb prostheses - upper limb functional electrical stimulation
Recreation and sports	- aids for games, exercise, sports, photography, smoking, hunting and fishing - adapted toys - musical instruments - handicraft tools for sport and recreation

Orientation

Orientation is the ability to locate oneself in relation to the dimensions of time and space. It is also the ability to receive stimuli from several sensorial inputs (sight, hearing, smell, touch), assimilate those inputs and provide a suitable response (output)³⁹. The following table lists some of the possible topics related to this subject:

ORIENTATION	
COMPONENTS	TOPICS
Orientation & navigation systems	- canes - orientation and mobility aids - sonic guides - adaptations of the environment
Cognition	- aids for memory compensation - aids for supporting time and space notions

Conclusion

It is important that this division into four areas should be understood as a guideline that *organisers* can adopt to address technical training. It should not be taken as a definitive solution, and it is certainly not restricted to the topics addressed here. The following table summarises all the technical components and topics.

³⁹ HEART, ib.

TECHNICAL COMPONENTS			
<i>Communication</i>	<i>Mobility</i>	<i>Manipulation</i>	<i>Orientation</i>
interpersonal comm	manual mobility	environment control	orient/navig. systems
computer access	powered mobility	activities of daily life	cognition
telecommunications	accessibility	robotics	
reading and writing	private transportation	u.limb orthoses/prostheses	
	public transportation	recreation and sports	
	l.limb orthoses/prostheses		
	seating & positioning		

4.1.3. Human and socio-economic components

Human components

This group of training components includes items related to the impact of disablement on the human being. Notions borrowed from the biological, psychological and sociological sciences may help to understand how the person changes and relates to the environment as a result of a disability, and how AT can facilitate autonomy. The following table lists a selection of possible topics that make sense in relation to AT.

HUMAN	
<i>COMPONENTS</i>	<i>TOPICS</i>
disablement issues	- disabling pathologies - impairment / disability / handicap and ICIDH-2 - rehabilitation and social integration - autonomy and empowerment
accepting AT	- social image of disability - social image of AT - understanding diversity and cultures
selecting AT	- analysing needs and formulating goals - matching person and technology - the process of selecting AT - factors that lead to success or failure of AT
AT counselling	- basics of peer counselling and peer mentoring - developing peer counselling attitudes - building leadership qualities
personal assistance	- management of relationship with personal assistants

Socio-economic Components

This group of training components is intended to facilitate understanding of how providing an assistive device affects interactions within the social context, encompassing all the people and networks that have an impact on the end-user (family members, friends, caregivers, fellow students, co-workers, etc). It also

deals with awareness of the advantages and disadvantages of different service delivery models, together with awareness of the role, constraints, and perspective of manufactures, distributors and suppliers. The following table lists a selection of possible topics that make sense in relation to AT.

SOCIO-ECONOMIC	
COMPONENTS	TOPICS
basics of AT	- definition and classification of AT - ISO 9999 classification - other classification models (HEART, HAAT, MPT etc.)
basics of universal design	- design for all vs. design for a few - concepts of accessibility and usability
employment	- the labour market and labour policies - workplace adaptations - work perspectives in the information society (teleworking etc)
service delivery	- legislation related to the provision of AT - procedures for getting or funding AT - negotiating terms with AT providers and suppliers - maintenance procedures
standardisation/quality	- technology assessment for AT - AT research and development - accessibility standards - AT standards
law/economics	- national legislation concerning disability - evolution of AT policies at international level - cost analysis for AT - outcome analysis for AT - market trends
information resources	- databases on AT - AT Internet resources - catalogues, magazines and other publications - exhibitions and information events - information centres - professional supports for choice of AT

4.2. Getting organised

4.2.1. The planning stage

Once the type of educational initiative (course, seminar, etc) and its contents have been defined, decisions must be made concerning:

- the target group (type and number of participants);
- the teaching team (criteria for choosing teachers, number of teachers, co-ordination and responsibilities);
- advertising and participant recruitment;
- organisational aspects such as venue/logistics, duration/scheduling, budget/fees;
- evaluation methods;
- pedagogical aspects such as topic sequencing, didactical methods, teaching strategies and tools.

The discussion of these aspects that follows will consider all the critical factors that occur at each stage of the design process related to the transfer of knowledge to the trainee group. *Content factors* have been already discussed in Chapter 4, so we shall proceed with the factors to address in the planning stage. These relate to the selection of the two main actors in the educational process: the trainees (*targeting factors*) and the trainers (*teacher selection criteria*).

Targeting factors	Keywords
Age	children, teenagers, adults, the elderly
Impairment	cognitive, sensory (hearing, visual), motor
Barriers faced	orientation, physical independence, mobility, employment, social integration
Role	person with disability, helper, peer counsellor
Diagnosis	homogeneity vs. heterogeneity of disabling condition

Pedagogical factors	Keywords
Teacher selection criteria	staff member of the organisation, level of expertise, reputation, being disabled, being disabled with specific expertise, being a disabled representative

Homogeneous or heterogeneous groups?

The decision whether a group of trainees should be homogeneous or heterogeneous with respect to each targeting factor may have a strong impact on the design of an educational initiative. Either option has its pros and cons; moreover, there may even be additional aspects that need to be considered such as sex, provenance (from the same local community vs. from all over the

world), professional background or personal interest – factors that characterise a group as homogeneous or heterogeneous.

In general, a *homogeneous group* is easier to manage; it has the advantage of sharing to a certain degree social, cultural, health or psychological experiences, thus creating favourable conditions for addressing specific topics in depth. However, it reduces the opportunities for comparing different views and may lead to an unproductive unanimity that impoverishes the educational experience.

Conversely, a *heterogeneous group* may entail a greater organisational burden (e.g. accessibility, accommodation, relationship management) and call for topics to be discussed at a more general level. However, the variety of experiences may introduce a wealth of ideas, debate and comparison that challenges the participants and enriches the educational process.

Age

The age of participants is a decisive factor in the choice of the contents, methods, style, learning setting and physical environment. The EUSTAT survey found that existing educational initiatives always address a single age group at a time. These are not defined in terms of precise age ranges, but rather as answers to the question: “What term best defines the group you are training?”. Most existing initiatives are addressed to *adults*. However, there are also some experiences that involve the *elderly*, *children* or *teenagers*, which differ significantly from those addressed to adults. At the very least, the language and educational style used should be adapted to the specific age group.

There is little or no experience with mixed groups, it being commonly judged inappropriate by organisers. However, the potential of inter-generation exchange (an underestimated value these days, especially in Western countries) might offer an interesting challenge for the development of innovative educational methods.

Impairment

Depending on the specific topic of the course and on the depth of notions covered (general information vs. detailed knowledge) the *impairment* experienced by participants may be a criterion for defining the composition of the trainee group.

For instance, visually impaired people may be interested in finding out details of a technology (e.g. computer reading aids) that are of little interest for people with paraplegia. Courses where the aim of AT knowledge is exclusively to improve personal autonomy can go into considerable detail about specific technology if the group is homogeneous. By contrast, those that also aim to

exploit individual experience of disability for helping others (peer counselling or mentoring) may need to cover a wider spectrum of notions that relate to many types of impairment.

In the case of very homogeneous groups (e.g. people with spinal injury; people with multiple sclerosis; etc), specific disablement can be addressed in greater depth, and may offer the starting point for establishing focused self-help activities. Conversely, the presence of people who experience different impairments (e.g. blindness, motor impairment, etc) enriches the group and widens perspectives: the more “horizontal” the training is, the more it fits a variety of different experiences of impairment. However, in this case care should be taken to avoid the creation of barriers against the most disadvantaged, like people with communication or cognitive problems: forms of involuntary segregation are sometimes seen in heterogeneous groups because such problems are overlooked, and because the course may not be tuned to everybody’s pace.

Barriers faced

A different perspective is to assemble the trainee group according to common problems experienced in society, even disregarding the type of impairment. This is a more social perspective that focuses on the accessibility of the environment, the usability of services available in the community, and the adaptive technology that matches the person with the environment. Since such problems concern very concrete daily life experiences of people with disabilities, some participants may tend to view topics through their very specific personal experience, with the expectation of finding solutions within the course. This challenges teachers to keep the course on track, while making use of the trainees’ personal experiences as an educational opportunity.

Role

The perspective from which AT is viewed varies according to whether the participant him/herself is a *person with disability* willing to make the best use of AT for personal independence, a *helper* (and thus someone who operates another person’s AT or uses AT to facilitate assistance), or a person with disability willing to exploit his/her personal experience to help others make choices (*peer counsellor* or *mentor*). Organisers may choose to run courses for just one of these groups, or to address the various groups at the same time, thus taking advantage of the exchange between different perspectives.

Diagnosis

The criterion of homogeneity with respect to a pathology, or more generally to a disabling condition, is often found in rehabilitation centres or self-help groups. It is more seldom found in AT educational initiatives, since most AT addresses problem-solving rather than body-oriented issues.

A pathology (especially if progressive) may bring about different impairments and disabilities depending on its severity and its clinical course, thus calling for different technologies at different times. Therefore it does not seem a relevant criterion for assembling a group for AT training. In addition, sharing views only with people experiencing the same pathology may offer a very narrow perspective of AT, and shift attention towards medical matters. By contrast, having people with a variety of pathologies widens the perspective, avoids people identifying the experience of disability with just their own pathology, and helps concentrate on practical occurrences of daily living, which are those most appropriately related to AT.

Teacher selection criteria

The success of an educational initiative is often the result the educators' abilities, including their competence, presentation ability, command of the adopted didactical method, and capability to tune in to the trainees' feelings.

Choosing a teacher on the basis of his or her *competence* (in terms of contents and pedagogical and relational aspects) is to an extent a prerequisite for success. This was confirmed by the EUSTAT survey, which found competence to be the major criterion adopted by most organisers of ongoing initiatives.

However, there are other aspects that - if added to competence - may contribute to success. One of these is the teacher's *reputation* regarding his or her knowledge or ability to entertain, which attracts an audience. Another pragmatic criterion used by many organisations is to choose teachers who have a proven track record or even *belong to the same organisation*, so as to be sure they fully share the mission of the educational initiative, and are able to carry out the assigned tasks.

Another criterion that is increasing being adopted today is to choose teachers who are themselves persons with disabilities. The focus may be:

- on the personal experience of disability they can offer to the trainees (*being a disabled person*), or
- on their broad experience with problems faced by disabled persons (*being a disabled representative*), or
- on their specific competence on a given topic (*being a disabled person with specific expertise*).

The fact that the teacher him/herself has a disability not only adds practical experience - and thus credibility - to the notions provided, but may also give

rise to *role modelling* experiences that reinforce the trainees' motivation to learn and to change.

In any case, the choice of teachers should be closely linked to the didactical methods adopted. As will be discussed later on, didactical methodologies should be consistent with the learning objective. A method is only effective in the hands of teachers who are able to master it. If the objective is, say, a change in behaviour, a teacher able to conduct relational and group techniques (group discussions, simulations, etc) should be found. If the objective is to teach how to use a device, a teacher able to train participants actively (drill-and-practice, experimentation, hands-on sessions) should be preferred.

4.2.2. The launching stage

This stage includes advertising activities and recruitment of trainees. The following organisational factors should be addressed.

Organisational factors	Keywords
Advertising process	leaflets/pamphlets, specialised journals, newspaper, radio/TV, Internet
Selection procedure for trainees	open admission, by invitation, verification of eligibility, individual examination

Advertising process

A good advertisement is fundamental for ensuring proper understanding of the subject and objectives of the course, for attracting the intended audience, and for shaping the attitude of people towards the course. In today's *image society*, the choice of medium, the messages delivered and the quality of presentation play a paramount role in getting the educational initiative understood and making it stand out in the flood of messages that we all receive every day.

The EUSTAT survey highlighted that most organisations involved in educational initiatives place great importance on advertising. They often maintain address databases of potentially interested persons and organisations, or even send periodical newsletters to them. They also devote great effort to spreading information through word of mouth or leaflets handed out at the congresses or exhibitions that interested people are expected to attend.

The most traditional (and sometimes still winning) method is the *leaflet* or *pamphlet*. This provides precisely and exhaustively all the information needed, is suitable for handing out or mailing to people, and can be attractively designed to increase appeal. Printing and mailing costs are often very high, depending on the desired print quality and weight of paper used. Powerful desktop publishing software is now available on personal computers, allowing virtually anybody to prepare high-quality leaflets and thus avoiding the costly

process of professional typesetting. Nevertheless, the difference between a professional leaflet and a home-made one is still evident.

Specialised journals such as user organisation magazines, topical journals addressing a specific area and the like are often a good place to publicise a course. Many journals do not even charge for advertisements since they consider such information attractive to readers and thus prefer to have a full article reporting the course in detail. Most journals of this kind are not published very frequently, so it is important to get agreement well in advance to ensure that readers find the news when there is still time to decide to participate.

Newspapers are published more frequently and reach a wider audience, but the advertisement may be buried in the bulk of news and thus overlooked. It is not easy to ensure that information is published accurately, as journalists often have to take account of space restrictions or appeal requirements. Paid advertising certainly avoids this risk but is very expensive.

Needless to say, *radio* and, to a greater extent, *television* have a tremendous potential impact. The effect on the audience depends on transmission time, the format of the programme, the effectiveness of the message, and the ability of those who deliver it. Since television evokes emotional viewing, it is important to remember that a number of secondary messages are always delivered, consciously or otherwise, along with the main intentional message, and these can have both positive and negative effects. Such aspects should be carefully controlled: there is a risk of being misunderstood, giving conflicting cultural messages, and receiving thousands of calls from people who are not really interested.

The *Internet* is taking an increasingly prominent role in this field. Information can be easily and quickly spread at virtually no cost to anyone anywhere in the world who has access to electronic mail, discussion or news groups, or the World Wide Web. The problem is message visibility within the network, a factor that greatly depends on the prominence of the web site and on how well its descriptive language has been written so that the site is picked up by search engines.

The choice of advertising channel depends on the target to be reached. Some media, such as placards posted on walls in certain areas of town, are well suited to a wide and generic target, while others like announcements in category journals may be preferable when the target is specific. Even in mass media such as TV, the outreach may be differentiated through proper placement within the schedule: scientific programmes attract a focused and restricted audience, while so-called magazine programmes reach a wide and generic target. The *type of organisation* carrying out the educational initiative may also be a contributing factor: if the organisation has a reputation in the scientific community, information about its initiatives will be expected to appear in scientific journals; if it is an end-users' organisation, people may expect to be informed through local channels such as radio and TV, placards and leaflets.

The *presentation style* is an important matter. Messages should be concise, consistent with the type of initiative, contain all the essential information, and carefully checked before delivery. Another critical aspect is *timing*. Potential candidates should receive the information neither too earlier (since everybody tends to forget), nor too late with respect to the key deadline. Those who have no previous experience of advertising tend to underestimate the time needed to get a leaflet designed, drafted, proof-read, printed, mailed out and delivered. A good advertising plan generally makes use of different media to “dose” the message at different times.

The following table offers a brief summary of the above concepts.

medium	target	advantages	disadvantages
leaflets, pamphlets	* wide * both generic (congresses, etc) and well-defined (personal mailing)	* precise, exhaustive information * suitable for handling and mailing * may be attractive	high printing and mailing costs, depending on desired quality and paper weight
specialised journal	well-defined and specialised	* reaches a well-known audience * information may be very detailed and exhaustive	* requires agreements with the editors well in advance * does not reach beyond an “inner circle” of people
newspaper	wide, generic	also reaches interested people not yet known to the organisation	* announcement may be buried in the page * difficulty controlling accuracy of printed information * expensive if paid advertisement
radio and television	wide, generic, depending on programme time and format	strong impact on the audience	* requires ability in delivery contents through the specific medium, so as to avoid misunderstandings
Internet	* well-defined within discussion and news groups * unpredictable if on the World Wide Web	* quickness and ease in spreading information * very low cost * worldwide outreach	* the message may be barely visible on the web * not yet a mass-medium in some countries

Participant selection procedure

When it is paramount to maximise participation in order to “spread the message” as widely as possible, and there is no constraint on the number of attendants, the best option may be ***open admission***, meaning that everybody is welcome. In this case, the organisers must be prepared to deal with a broad range of expectations and motivation, or even with people who did not clearly understand the subject. This last problem can be avoided by clear and precise advertising. On-site collection of information about participants (e.g. a questionnaire enclosed in the enrolment form) may help adjust to the audience to a certain extent.

When the educational initiative is designed for a specific target with well-defined learning objectives, some kind of selection is important: one possible option is attendance **by invitation**. This is possible when the organiser knows who will meet the requirements. It must also be made clear that this option gives little opportunity to people who might in principle be suitable candidates, but who are outside the “inner circle”.

An intermediate solution is to advertise the course at large, and establish self-explanatory selection criteria (age, educational level, etc) that permit simple verification of **eligibility**; this can be done through a self-completed form, an interview, or certificates. Such an approach may be an efficient compromise between the need to control the consistency of the group and the need to limit organisational effort in the selection process. However, eligibility criteria alone may not be sufficient to ensure that the group is really consistent.

The safest method may be an **individual interview**, possibly following a verification of eligibility. This allows better insight into the trainee’s background and motivation, helps to identify possible problems in advance, and starts a personal relationship with each trainee. Instead of an “**interview**” in the strict sense, an “introductory chat” may be held, the difference being the more informal level of evaluation. In any case, an **interview** entails organisational demands and requires competent people to carry out the delicate task of evaluating candidates.

4.2.3. The organisation stage

The actual organisation of the course requires that both the pedagogical factors and the purely organisational/management factors be addressed⁴⁰. Pedagogical factors will be discussed later. The table below describes the factors that will be analysed.

Organisational factors	keywords
Venue	residential, on centre, on site (itinerant), domicile
Physical environment	accessibility, technical facilities, personal assistance on site, comfort, resting facilities, aesthetics
Related social activities	assistance with travel/accommodation, meals/refreshments, cultural/recreational events, welcome/farewell sessions
Financial scheme	free of charge, fee contributing partially to costs, fee fully covering costs, scholarships

⁴⁰ AIF (eds): *Professione formazione*. Milan: Franco Angeli, 1993
See also: Pellerey M: *Progettazione didattica*. Torino: SEI, 1983

Venue

The choice of venue has a great impact on both the effectiveness and the outreach of the course.

A *residential* course facilitates personal relationships among participants, but requires people to travel and this may be expensive. Nevertheless, holding a residential course is sometimes the only possible solution when participants come from remote places.

A simpler form of course from the organisational viewpoint is one held *on centre*, in other words on the organiser's premises or at a purposely-hired centre, with sessions scheduled in working hours so that trainees can go back home or to their hotel.

Itinerant courses held *on site* in the various communities where users live avoid people having to travel, take work leave or make complex arrangements for personal assistance. However, they may be complex to organise, and trainees miss the opportunity to meet peers from different environments or cultures and exchange views with them.

The ultimate form of de-localisation is the *domicile* course, where trainees receive education in their own environment. Training may be individualised, extended to members of the family or primary work, or even extended to peers (e.g. in community homes).

There may also be mixed solutions where the educational curriculum comprises a number of modules, each held at a different venue (e.g. a set of on-centre seminars followed by a week-long residential course that is rounded off with a follow-up domicile session).

Physical environment

The quality of the physical environment in which the course takes place is very important for the quality of listening and participation.

The main prerequisite is *accessibility* with respect to the participants' disabilities, which not only means the absence of stairs but also accessible bathrooms, furniture, etc. Physical *comfort* is another important environmental attribute that can help maintain attention levels and avoid undue tiredness: it can be obtained through careful attention to seating arrangements, acoustics (damping background noise and echo), lighting and air conditioning.

The educational material and teaching style may call for *technical facilities* like a p.a. (amplifying) system, headsets for simultaneous translation, acoustic loops, overhead and slide projector, flip charts, videotape reader, computers, video-conferencing, video-projector, etc. It is important for testing to be done before the course starts, and that somebody should be appointed to operate or

supervise the use of equipment during the sessions. When an educational session relies on electronic equipment, a technical breakdown may result in the total failure of the session.

Other aspects to be addressed are *personal assistance* on site (so as to allow people with severe disabilities to take part in discussion, change position or go to the bathroom when needed) and the availability of *resting facilities*, the best solution in a residential course being when personal rooms and work rooms are in the same building.

Last but not least of the factors deserving consideration is the *aesthetics* of the site. A teaching room cluttered with material or information (e.g. with an excessive number of wall posters that distract attention) or painted in brash colours may not be an ideal learning setting. The environment is not only a technical space, but also an *expression* that evokes feelings of acceptance, closeness, interest and appreciation.

Related social activities

These may be important for facilitating participation, fostering relationships with fellow trainees and trainers, and creating a climate of comfort.

Accessibility of premises and public transportation may pose a major problem for people with motor disabilities. Uncertainty as to whether assistance is provided when getting off the train, or whether the room and bathroom are really accessible with respect to one's particular needs may discourage participation. So *assistance with travel and accommodation* is more than welcome.

Meals and refreshments on site avoid people wasting time to go out during the breaks. People with motor disabilities often have to dedicate more time and effort than others to get from one place to another. If a proper setting is provided, meals and refreshment breaks can be used as a valuable opportunity to promote relationships and informal exchange.

Cultural or recreational events may be held for relaxation, but also to create a warmer atmosphere; they may also be a useful opportunity for trainees and organisers to get together, and even to mix with the local community where the course is taking place.

A *welcome* session helps to break the ice between the participant and his/her often unknown peers, and is also the opportunity to give practical announcements for the start of the course. A *farewell* session fosters reflection and discussion among participants about the results achieved, helps to instil lasting positive attitudes towards the experience, and sets the ground for further contacts.

Financial scheme

The way costs are covered has a great impact on the quality of the course and on participation.

If sufficient funding is available from one source or another, the *free-of-charge* scheme is certainly the one that offers the best opportunity for anybody to participate. However, it should be remembered that even free events may entail travel and personal assistance expenses that hamper would-be participants with financial problems; in this sense, the experience is not really “free-of-charge” at all.

When external funding sources are available that do not cover all costs, a *reduced fee* (“token fee”) may be applied to cover the balance. Some organisers even prefer to apply a token fee as matter of policy, since dropout rates and motivation failure are higher among those attending free-of-charge than among those who incur costs.

The alternative is to apply *a fee that fully covers costs* (or even makes a profit, if compatible with the organiser’s nature). This has the advantage of totally freeing the course of external sources and related constraints, but the fee may be so high that only a small “elite” can afford it. A sensible solution is to offer *scholarships* that partially or wholly cover the winners’ fees; this entails establishing eligibility criteria, and poses organisational demands for application assessment.

Implementation aspects

There are at least three other aspects that have important organisational consequences: *information collection from participants*, the *opening session* and *teacher co-ordination*.

Whatever the participant selection procedure, it is always a good idea to organise some *information collection on participants*. A registration form may be the easiest method; questions related to cultural background, profession, age, provenance etc. can be asked at this stage, provided that this is done in compliance with existing laws regulating the protection of privacy. In some cases, it may also be a good idea to administer an *introductory questionnaire* or conduct an *interview*. This can be done to collect data on the participants’ expectations, on their pre-course knowledge about the scheduled topics, and on whatever else is considered important for matching the contents and didactical methods with the characteristics of the trainees. After the educational initiative is finished, this data can be filed away or stored in the organisation’s database to be used for later initiatives.

Even in cases where a specific *welcome session* is not planned, attention should nonetheless be devoted to the *opening session*, the first plenary occasion when participants meet each other. Starting off on the right foot makes trainees and

trainers feel comfortable, and establishes the right atmosphere. The opening session may be used to foster *reciprocal knowledge* by means of a self-introduction, or such like. However, some caution is needed: there may be people who feel embarrassed when speaking in public, or participants whose verbal expression is impaired, thus requiring communication aids or just more time or effort to express themselves. It is up to the moderator to quickly evaluate the situation, decide how to facilitate, and intervene when necessary. Good ice breaking helps to establish an effective learning community.

Although *teacher co-ordination* is mainly a pedagogical issue (and will thus be discussed later), it is important that such co-ordination be made apparent to trainees. It calls for consistency between contents and educational style in order to avoid repetitiveness, contradictions and no-man's-lands; it also helps to construct successful relationships among teachers so that they are seen to be working in full co-operation.

One way of achieving this objective is to gather the teachers together in a working group so that a common educational methodology is developed. Ideally, the group should meet regularly during the course, as well as during the lead up and in the aftermath. This is the strategy adopted by Centro Studi Prisma (Italy)⁴¹, to take one example. Their teachers stay together (and with the trainees) during the residential courses, attend each other's lessons whenever possible, and have regular progress meetings to check the trainees' learning, adjust the course to possible unexpected events, and evaluate effectiveness. Such measures help to improve quality remarkably, but also entail considerable human and financial costs.

4.2.4. The evaluation stage

The EUSTAT survey found that most organisations carrying out educational initiatives expressed great interest in the evaluation stage, but seldom used systematic evaluation instruments. Feedback from the audience was mainly collected in an informal way, through discussions devoted to the exchange of personal impressions, or even private conversations. However, this method may not provide a complete picture of the initiative's success: there are other methods that provide a better understanding both of participant satisfaction (*evaluating success*) and long-term effects (*evaluating outcome*)⁴².

⁴¹ see Chapter 6.1

⁴² Amietta P L: *Valutare la formazione: problemi aperti e problemi da chiudere*. In Infelise L (ed): *La formazione in impresa: nuove frontiere in Europa*. Milan: Franco Angeli, 1994

See also: Amietta P L, Amietta F: *Valutare la formazione*. Milan: Unicopli, 1989

See also: Calonghi L: *Valutazione*. Brescia: La Scuola, 1976

Evaluating success

Several *survey methodologies* are available for analysing participant satisfaction, revealing what aspects the participants liked, what they would change, and what they deem to have learned. These methods are summarised in the table below.

survey methodo	type of educat.activity	advantages	disadvantages	recommendations
Collection of personal impressions at the end of the educational initiative	short and light (seminars, workshops, conferences)	undemanding in terms of time and organisation	* informal * unreliable * difficult to manage negative statements * difficult to involve shy persons or those with communication limitations	use when the relationship with the audience is already firmly established
Discussion guided by a moderator	any	* reliable * focus on key issues	* may appear too controlled * only partially open to the audience's requests	try to cluster opinions around prevailing key ideas
Final questionnaire	courses (especially residential), series of seminars	* consolidated methodology * possibility of quantitative analysis * reliable (anonymity) * allows comparison with the introductory questionnaire if applicable	* demands of designing the questionnaire and analysing data * whole process takes considerable time * open-ended questions are difficult to analyse * multiple choice questions may fail to gauge participants' real opinions	* avoid open-ended questions if the group is large

From the *organisers'* perspective, the participants' judgements - along with self-evaluation - are also useful for identifying mistakes that may have been made at any stage. Reflecting about these helps when seeking to identify possible remedial actions or improvements to implement in further editions of the same educational initiative.

Evaluating outcome

In the field of education, outcome evaluation is currently considered of fundamental importance, but still represents a major challenge: no final consensus has yet been reached on the focus of evaluation, on timing, or on the instruments to be used⁴³. However, in specific areas such as AT education it is somewhat easier to identify at least two appropriate outcome indicators:

⁴³ Meignan A: *Manager la formation*. Paris: Liasons, 1991

See also: Forti D (ed): *Orizzonte formazione*. Milan: Franco Angeli, 1991

- * Were the learning objectives achieved?
- * Did the knowledge learned activate real, positive changes towards empowerment in the participants' lives?

The first aspect - *learning new knowledge* - can be evaluated through forms or questionnaires administered in the aftermath of the educational event. This evaluation is obviously paramount for educational initiatives that issue certificates, which in some cases may even require an examination in the true sense. Sometimes this evaluation is also important from the perspective of the participants' sender. For example, a person with disability paying for his/her personal assistant's education may be interested in finding out the training's effectiveness. In this case, the evaluation might even be carried out by personally contacting the sender and asking him/her to fill in a form or provide a report stating whether the learning was consistent with the educational needs.

The second aspect - *How did the learning contribute to empowerment?* – is particularly interesting but difficult to investigate. Empowerment is a process of personal growth and re-appropriation, so it can only be experienced and appreciated by the person him/herself.

Some suggestions...

The most suitable instruments in this case are survey methodologies based on personal contact, such as interviews and conversation with the involved persons.

Participants can give their opinion about the results they ascribe to the received education, and about the spheres of their life that have been affected by education. A previously prepared script can be useful for direct comparison of different opinions, but the interviewees should also be allowed to reveal their most personal opinions.

Interviewers should be careful to avoid giving any hints about the aspects of change they are most interested in.

4.3. Pedagogical issues

4.3.1. Didactical methods

Numerous didactical methodologies can be used in education, and these may be identified with different terms in different countries⁴⁴. The methodologies that apply to AT education are described below.

Pedagogical factor	Key words
Didactical method	lecture, group work, simulation, role-play, learning by doing, modelling, co-operative learning, distance learning

Lecture	
<i>Definition</i>	The most typical teaching methodology, where a speaker transfers contents to a listening audience.
<i>Aim</i>	To transfer items of knowledge to the public.
<i>Description</i>	The speaker may make use of teaching aids or educational material; these serve to attract the listeners' attention, fix their ideas on the main points, and accompany the most demanding logical implications.
<i>Duration</i>	An hour to an hour and a half; longer lectures require a break or the introduction of engaging activities (hands-on sessions, group work or discussions).

Group work	
<i>Definition</i>	A grouping of possible methodologies that emphasises experience-led activities, including hands-on sessions. Mostly used within training activities.
<i>Aim</i>	To take advantage of thinking together, and comparing ideas during discussion.
<i>Description</i>	Small work groups are assigned a well-defined task to be accomplished within a predefined time, and are to report the results in a plenary session. The groups may be set a common task (e.g. to test an instrument and give impressions so as to compile a list of pros and cons) or different, complementary tasks (e.g. to develop sub-parts of the one project). The various work groups may be formed by the participants' voluntary aggregation, or defined by the initiative leader. If group work plays an important role in the educational project, careful attention should be paid to setting up well-balanced groups; if the purpose is to provide an opportunity for practice, no special supervision is required. Having a work co-ordinator may help to facilitate discussion, resolve doubts, bring in the leader to settle disputes, or simply report the final results.
<i>Duration</i>	Variable, from one to four hours.
<i>Examples</i>	Team exercise, business games, drill and practice, team learning, share doing, etc.

⁴⁴ Infelise L: *Modalità ed alternative strategiche di uso della formazione verso una nuova logica di apprendimento*. In Infelise L (ed): *La formazione in impresa: nuove frontiere in Europa*. Milan: Franco Angeli, 1994

Special group activities	
Simulation This is a special kind of exemplification that “stages” reality by reproducing it in an experimental way; it gives the opportunity to show a process. Examples include the simulation of a lesson planning session, or the negotiation of the employer-employee relationship. A problematical situation can be simulated to challenge the listeners to find the best solutions; then the proposed solutions can be represented in their turn, so that their pros and cons can become more evident. Simulation is quite a complex technique requiring a leader with specific experience and the willingness of the persons involved. The variables in play must be clearly explained, avoiding the interference of secondary elements, and preventing the discussion from developing in useless directions. The methodology has a strong force of attraction, and is powerful in encouraging learning.	Role-playing This is a special kind of simulation technique, where the relationships among persons are represented. The aim of role-playing is to verify how the roles performed by persons in human relationships can influence the type and the quality of the relationship itself. This technique was developed within clinical and organisational psychology and has since been widely used in those fields; more recently it has also been used in the fields of education and business training. In the AT domain, role-playing might for example simulate a professional relationship between a person with disabilities and his/her personal assistant, who both learn to recognise and solve difficulties or misunderstandings. This technique cannot be improvised because of the intense and realistic feelings it might solicit both in the actors and in the audience; it should be used with extreme caution, under supervision of experts.

Learning by doing	
Definition	An educational methodology that begins with practice and problem solving and moves on to problem theorisation and representation.
Aim	To bring about real learning, which in this view is considered a mix of theory and practice.
Description	Well-planned, well-structured practical experiences are organised, in which the learner has the opportunity to do things and then make hypotheses and evaluations; only at that point are problems examined at a theoretical and generalised level.
Duration	Variable, according to the kind of activity.

Modelling	
Definition	An educational technique based on the type of relationship between the teachers and each learner, even within a group. It is used as an additional technique (almost subliminal) within any educational initiative.
Aim	To propose a model of behaviour and thinking that is considered positive and worthy of imitation.
Description	The teacher’s charisma creates a sort of imprinting, both in transmitting contents and in suggesting behaviours and thinking frameworks, etc. This requires considerable experience in the educational field. The educator simply teaches through acting, resolving situations, answering questions both generally and individually, etc.
Example	A skilled speaker, who happens to be a person with disability, delivers an impressive speech, and this inspires admiration and emulation. Alternatively, during group work based on case studies, a disabled leader becomes a model as a result of the special cognitive approach he/she proposes to the group, the alternatives he/she considers, the ways of going about problem solving.

Co-operative learning

<i>Definition</i>	This indicates the methodology whereby learning is based on individuals collaborating together as a group on a common project.
<i>Aim</i>	To demonstrate that the results that a well-formed and well-guided group can achieve are different and superior to the sum of results obtained by single individuals; to develop ideas co-operatively and represent complex situations involving numerous variables. It is especially suitable for developing the meta-cognitive ability of “learning to learn”.
<i>Description</i>	Group work strategies based on solid project planning; the general project co-ordinator plays the demanding role of mediator/moderator for overall group learning. Learning is achieved through group discussion and group activities, which are always mediated and supervised.
<i>Example</i>	In the field of empowerment towards autonomy, co-operative learning may be implemented by setting up a group of learners guided by an expert leader, whose task is to outline an ideal educational programme in the field of AT. The participants, guided by the moderator, should discuss the contents involved and reach a general consensus about their arrangement, divide the main topic into issues, choose methodologies, select the target, etc. The theoretical and practical implications of each stage are examined more thoroughly than if the project had been examined individually.

<i>Distance learning</i>	
<i>Definition</i>	This indicates an educational situation in which teachers and learners may be distant and separate from one another but are connected up in various ways ⁴⁵ . It is often mediated by technology.
<i>Aim</i>	To spare financial and organisational efforts and to involve a wider public. It is usually adopted when the speaker is an eminent figure, when the event covers something outstanding, or in order to connect twin organisations affiliated in the same initiative.
<i>Examples</i>	Video-conferencing, learning circles, etc.
<i>Description</i>	Video-conferencing is often adopted for content transfer in a traditional lecture format. Other techniques based on distant communication such as so-called learning circles are more complex: the most commonly used methodology here is co-operative learning.
<i>Remarks</i>	Distant learning presents additional advantages for persons with disabilities, who in some cases have transport difficulties; participation in an educational event, even at a distance, can become an incentive to strive towards empowerment.

⁴⁵ Cooper A: *Distance learning and management education*. Media in Education and Development vol.18 n.1, 1992
See also: Kaye A, Rumble G (eds): *Distance teaching for higher and adult education*. London: Crom Helm, 1981

4.3.2. Tools and strategies

Pedagogical factor	Key words
Knowledge to be gained	theoretical knowledge, procedural knowledge, practical knowledge, know-how
Teaching style	questioning, interactivity, discussion, real-life examples, well-structured presentation
Teaching aids	no material, handouts, audiovisuals, Information & Communication Technology (ICT)
Educational material	information kits, publications, software, technical aids
Learning setting	residential, full immersion, distributed over time, random scheduling
Co-ordination of teaching activities	sole teacher, teaching team with a co-ordinator, team/progress meetings, no co-ordination

Knowledge to be gained

Theoretical and *procedural* knowledge⁴⁶ are mainly acquired through symbolic means such as lectures, while *practical knowledge* and *know-how* may require the concrete manipulation of objects and reproduction & experimentation or trial & error experiences. To provide the full picture, so-called *knowledge of being* should also be considered: this relates to the individual's inner dimensions and underpins the other forms of knowledge by giving them personal meaning.

Two examples may help to clarify this concept

John....

is a person with disabilities, who has been driving a wheelchair for more than twenty years. So he has certainly some "hand skills" and "effective tricks" by which he manages to obtain a satisfactory level of comfort: this is his know-how. However, John also has available some procedural knowledge: instruction for use of the wheelchair supplied by the manufacturer, technical handbooks, safety warnings etc., but he does not have necessarily the theoretical knowledge to deal with technicalities: understanding the working of the batteries, the electronic control, the motor etc.

Charles...

is a technician; he knows the engineering aspects of wheelchairs, so he has the theoretical knowledge. He also knows John's practical requirements related to the wheelchair and his special needs, so he has practical knowledge too. Finally, he has procedural knowledge available (technical manual, standard procedure in case of failures etc.).

A person can be knowledgeable about a subject without necessarily managing all four types of knowledge. Nevertheless, any action of knowledge transfer to the end-user should embrace the above dimensions and try to integrate them effectively.

⁴⁶ see Chapter 2.2.4

Teaching style

The teaching style greatly depends on the individual teacher's qualities and previous experience⁴⁷.

The *presentation* of a lecture can be defined as *well structured* when its contents are developed following a logical path that is clear to the learners. Graphical schemes may be used to help listeners keep the path in mind and memorise contents. Plain but engaging language is recommended. Evocative, exemplifying, sometimes ironical speaking may be useful, however these attitudes should always be tuned to the participants' socio-cultural background⁴⁸. Educational instruments and material can help to brighten up the lesson.

Remember...

The success of the lesson might be determined by other aspects such as the speaker's tone of voice, wealth of the verbal expressions, body postures, gestures and facial expressions. How many teachers do we remember because of the boredom they provoked with their flat tone? How many failures at school did we ascribe to a bad human relationship with the teacher?

An atmosphere of *interactivity* and co-operation within the learning group may make the lecture livelier, and favour concentration and listening. Teachers who make extensive use of *questioning*, for instance, establish great interactivity: they challenge participants with questions, listen to their opinions, and promote interpersonal exchange. By putting the right questions, they help listeners to recall notions and open their minds to new information.

For example...

Before presenting a lesson on augmentative communication aids, the teacher may ask the trainees to make a list of all the aids they already know, use or have seen used. The list will be a common basis for the lesson; it may contain gaps, mistakes or imprecision that reveal to the teacher the quality and type of the learners' knowledge. The lesson will then confirm the right notions and disconfirm the wrong ones. The participants will be able to store knowledge easily in their memory.

Whereas *questioning* aims to involve each and every listener, *discussion* aims at more generic involvement, everyone being free to contribute or not. The focus of the discussion usually follows the flow of the debate.

Remember...

A discussion might become captivating, especially if the topics treated are up-to-date and lively and the interlocutors are skilful. If the discussion comes only at the end of the lesson, it is unlikely to introduce real interactivity into the educational process. However, in this way final explanations can be given and the participants' opinions can be collected.

⁴⁷ Schmidt A: *Come fare formazione tecnica*. Milan: Franco Angeli, 1988

See also: Castagna M: *Progettare la formazione. Guida metodologica per la progettazione del lavoro in aula*. Milano: Franco Angeli, 1991

See also: Castagna M: *La lezione*. Milan: Unicopli, 1988

See also: Mazzotta M: *Come organizzare la lezione*. Teramo: Giunti e Lisciani, 1985

⁴⁸ DeLandsheere G, Delchambre A: *I comportamenti non verbali dell'insegnante*. Teramo: Giunti e Lisciani 1981

Some teachers like to use many *real life examples* in order to keep the listeners' attention. This practice is good for illustrating the practical implications of the theoretical information conveyed; it may be particularly useful when the audience is less accustomed to educational activities.

Teaching aids

Whatever the preferred methodology, most teachers use teaching aids to support their work. There are some speakers who use *no material* and place full trust in their ability to entertain the audience; however, if they are not blessed with the “gift of the gab”, they may be not able to catalyse the listeners' attention effectively. In most cases, the use of teaching aids is recommended; the table below lists the most common ones.

	Handouts	Audio-visual equipment (overhead projector, slides, etc)	Computer tools
<i>type of lessons</i>	mainly practical	mainly theoretical	both
<i>design</i>	grids, tables to fill in, graphics to draw	* concise content * graphical support	graphics, text, pictures; some animation available
<i>use</i>	* to exercise in practical lessons * to fix some notions, add information, facilitate listening	* to facilitate listening * to highlight the logical path of the presentation	* to facilitate listening * to attract attention * to exemplify, represent, connect
<i>points of attention</i>	* with visually impaired people, use Braille versions if possible * with motor impaired people, use computer versions, alternative supports, personal assistance.	* with visually impaired people, use handouts in Braille if possible; large, sharply printed fonts; black & white contrast; avoid using a pen or detailed drawings, read slide contents aloud.	* with visually impaired people, use handouts in Braille if possible; large, sharply printed fonts; black & white contrast; avoid using a pen or detailed drawings, read the content aloud.

Some recently introduced forms of *Information & Communication Technology (ICT)* offer additional possibilities such as real-time or asynchronous connection with persons and groups at a distance, videoconferencing, distance learning, remote database querying, viewing material on World Wide Web sites, and searching on-line for certain material using Internet search engines.

Educational material

Well-designed educational material may help to improve the richness and liveliness - and thus effectiveness - of educational initiatives. Such material may not have been produced specifically for educational purposes, but a skilled teacher can transform it into an educational tool. The most widespread materials are:

- *printed material* such as handouts, grids, leaflets, lists and directories;
- *publications*: reports, brochures, manuals;

- *software*: electronic versions of printed materials, multimedia presentations, demos, thematic CD ROMs;
- *technical aids*: in AT courses, AT devices that may be used as educational material themselves - by the teacher for explaining concepts and ways of doing things, and by the participants for hands-on experimentation.

For example...

If the educational initiative aims at educating expert teachers in the field of disability, some publicity leaflets can be used as educational material for critical analysis. Similarly, a publication on assistive devices compiled for information purposes can be used as a working tool during a lesson to assess its content and presentation.

Learning setting

The choice of learning setting is never independent of higher-order decisions, however some logistical aspects have an impact on the learning process or are even instrumental to learning objectives.

A *residential* course requires a remarkable organisational effort. Venues already fitted out for this purpose are called for, such as hotels or colleges with conference rooms, where concentration is aided and relationships among participants are fostered. Residential courses usually last from a weekend to a whole week, or even a fortnight.

Running a residential course requires a solid work group, where the spirit of co-operation and flexibility are strong. People who experience *problems coping* with their disability, for example, may initially find intense peer relationships psychologically demanding, and require some support. On the other hand, the residential situation often proves to be ideal for fostering stable learning and supporting personal change.

While the residential course is based on living together and sharing recreational activities as well, in the *full immersion* format group involvement - although intense and demanding - is limited to working hours only. Its pedagogical power lies in the concentration required of the participants, usually over a short duration.

Initiatives that are *distributed over time*, and even have *random scheduling*, may be monographic (with the audience varying according to the topic) or arranged in sequences of educational events addressing the same group.

Whatever the learning setting, the accessibility and availability of teaching aids should be a major area of attention, as well as other environmental features that favour psycho-physical well-being such as lighting and temperature control, furniture comfort both for participants (seats, tables for taking notes) and speakers. The seating arrangement depends on the type of educational activity and the didactical method employed: whereas a conference usually calls for the lecturer to speak in front of the audience, a seminar or workshop may involve informal arrangements like a circular lay-out at given stages. Hands-on sessions

may require work in small groups, side by side, or done softly. Work groups focusing on planning and inventive tasks may benefit from conversation corners, which encourage intimacy and privacy.

Co-ordination of the teaching process

Educational initiatives involving a *sole teacher* obviously do not need any co-ordination. If a teaching team is involved, the appointment of a *co-ordinator* is the most basic level of co-ordination. Usually the co-ordinator belongs to the organisation, so s/he is expected to know its mission and express its organisational, theoretical and pedagogical motivations. The co-ordinator handles contact between the various teachers, arrangement of schedules and timing, and decision-making on logistical issues. S/he should also be able to define clearly the educational framework so as to advise the teachers on contents to deliver, didactical methods and teaching styles. The co-ordinator is expected to provide the teachers with any information available on the trainees. It is up to him/her to judge whether the initiative is on track, consistent, and exhaustive, and if not whether s/he should intervene directly or guide the teachers to take action.

Co-ordinator duties may be supported or even taken over in some cases by a *teaching team* that meets regularly to monitor progress collectively, anticipate upcoming problems and tune the educational initiative. The team is particularly useful when the initiative is a demanding one with a long duration, and when relationships between participants are intense.

Organising educational initiatives without *co-ordination* is extremely risky. Employing resources in co-ordination will prove to be a good investment for success.

5. Gearing to the audience

This chapter looks at factors that influence the individual trainee's reception of the knowledge delivered to a group. Educators can address these factors in many ways, with a view to maximising the amount of knowledge transferred to each person while meeting the individual pace of learning. Factors related to trainees' living context in their community are also analysed. If properly addressed in the educational process, the objective of empowerment may be successfully achieved, in terms of helping the individual to make effective use in daily life of the knowledge received.

5.1. Meeting the pace of learning

5.1.1. Predisposition factors

Five factors can be identified that influence the individual's level of understanding of the knowledge delivered to the group.

factor	keywords
educational level	illiteracy primary education secondary education higher education
awareness of diagnosis	scant vs. in-depth knowledge of one's own disabling condition
acquaintance with technology	technophilia vs. technophobia
seniority of disability	recent onset vs. prolonged disability
previous experience with AT	no experience limited experience extensive experience

Educational level

Becoming a proficient and successful user of AT certainly does not depend on educational level; however it is obvious that the depth of notions and the language used in transferring knowledge should be geared to the trainees' educational background.

In some cases, educational prerequisites may be required. However, experience shows that these are not linked to the AT training itself but rather to the use that trainees will make of such training. For instance, if peer counselling is the objective, some previous experience may be required to ensure that the trainee is able to establish suitable relationships with clients.

When the trainee group comprises people of different levels, care may be needed to avoid situations that exclude either those with lower education (overly demanding learning tasks) or those with higher education (boredom through the lack of challenge). Ways of managing this problem include:

- optional instructional tutorial or pre-courses, or
- separate sessions for in-depth study at given stages of the course, or
- simply making it clear from the outset what approach and language will be used.

In the last case, each participant will judge what is accessible to him/her (so it does not matter if something is not understood) or what s/he already knows (so it is seen as consolidation of knowledge, or as an opportunity to identify areas where one can be helpful to less expert people).

Awareness/Understanding of diagnosis

Awareness of the prognosis and the implications of one's pathology or medical conditions underlying one's disabilities may have remarkable consequences on the predisposition to pursue autonomy or use AT. In some cases, this awareness may be scant as a result of the user's cognitive limitations, poor information received from health and rehabilitation professionals, psychological obstacles to "receiving the truth", or sometimes to rare disorders whose implications are not well documented.

The issue of AT often goes to the heart of problems related to disability. As acceptance of AT is linked to acceptance of one's disability, people may feel uncomfortable speaking about this subject whenever it raises questions about the real truth surrounding personal status. Educators should be aware that scant awareness exposes people to possible negative psychological reactions, and they should therefore be prepared to cope with that.

Acquaintance with technology

Irrespective of educational level or cultural background, there are people who feel intimidated by technology and others who feel comfortable or even enthusiastic about it⁴⁹. One common example is the computer, which some see as a good friend while others dread like a foe.

Since AT is technology, and sometimes even leading-edge technology, it is important to devote special care to help technophobic people get acquainted with it. For example, these people may need to:

- handle and practice using technology more than others;
- confer with peers who are successful AT users;
- learn by practical example.

There are people who will never become effective users of technology. Nevertheless, no matter how deep-rooted it is, technophobia can always be reduced or overcome by helping such people look beyond technology and concentrate on what can be achieved by using it. An individual may not like sophisticated electronic wheelchairs, but s/he will be more likely to consider

⁴⁹ Enders A, Hall M: *Assistive Technology Sourcebook*. Washington D.C.: Resna Press, 1990

adopting one after experiencing how much faster, or more safely or comfortably important activities can be performed by using it.

Seniority of disability

In general terms, it is expected that the longer the personal experience of a disability, the more the person will become knowledgeable about its practical implications and “hidden sides” in daily life. The more time that has elapsed from the onset of the disability, the greater the likelihood that the personal adaptation process will have been completed. In other words, those with longer personal experience may be in a better position to know “what is best” for them.

The same may not apply to people with progressive pathologies that lead to a step-by-step progression of disability. Each “step down” leads to a new and as yet unknown situation, which may mean starting the adaptation process over again and thus possibly generating demotivation⁵⁰. This has implications for the predisposition toward receiving AT knowledge (“Why should I bother, if the situation is going to get worse anyway?”), and calls for special attention from educators. Due consideration should be given to the value of *maintaining* autonomy, which is not a poor cousin of *improving* autonomy.

Previous experience with AT

People who have had previous experience using AT tend to be far better informed and more demanding AT consumers than novice users, who often seek to delegate choices to professionals. Highly experienced users may even be more knowledgeable in this field than professionals, since they live with AT round the clock and not only during working hours. People with no AT experience at all may need to learn aspects that are obvious for experienced people: even simple technical aids like adapted grips might not be properly understood if the usage technique is not illustrated in full detail. Within a course, it may be beneficial to promote interchange between people with solid experience and those without it.

5.1.2. Disability-related factors

It may seem contradictory to look upon disabilities as an issue here. However, there are two disability-related factors that influence the individual’s availability to receive knowledge being delivered to the group; both call for the educators’ attention in adjusting timing, language, and logistic arrangements.

⁵⁰ Andrich R, Ferrario M. *Cost outcome analysis for assistive technology: case studies*. Del.3 TIDE/CERTAIN Project. Brussels: European Commission, 1996

Factor	keywords
physical stress tolerance	short- vs. long-term endurance
cognitive ability	attention concentration memory

Physical stress tolerance

Some impairments derive from a pathology or medical status that limits endurance of physical stress. In such cases, overly long lessons or excessively short breaks make it impossible for the person to listen, participate and learn proficiently.

People with severe disabilities generally need to devote additional energy to tasks like taking notes or speaking with a communicator during lessons, reaching the bathroom and transferring to the toilet during breaks, and getting ready in the morning. This can make the whole day very physically demanding, thus reducing the energy available for educational activities. These aspects can be addressed through careful schedule planning; in addition, proper arrangement of the physical environment (e.g. selecting a course meeting room adjacent to toilets and resting rooms) also plays a very important role in optimising people's energy use.

Cognitive ability

There is no “standard” level of cognitive ability, since everybody is differently gifted in terms of **attention** (ability to focus on the task), **concentration** (ability to participate in the task) and **memory** (ability to remember). However, there is a general understanding of what can be considered “average” attention, concentration and memory for people of different ages (consider the memory capacity of children and of the elderly).

With respect to this average, cognitive performance can sometimes be lowered by fatigue, by biological factors related to the specific pathology (e.g. multiple sclerosis or ALS) or to secondary consequences of disability (e.g. inability to communicate verbally).

An interactive teaching style may help to obtain timely feedback on the trainee's participation in learning.

5.1.3. The individual's attitudes towards disability

Motivation to learn is closely linked to acceptance or refusal of disability. Three factors can be identified that influence the individual's motivation to receive the knowledge being delivered to the group.

factor	keywords
the individual's image of disability	labelling underestimation superman acknowledgement self-determination
the individual's image of AT	extending abilities tool for living burden but need stigma of disability
the individual's feeling about autonomy	independence vs. dependence desire

The individual's image of disability

The way a person regards his/her disability may have a serious impact on the willingness to use AT. Educators should be aware of the continuum of possible attitudes, which can be clustered round five paradigms⁵¹:

Labelling (rejection of difference): “I have been labelled as different, therefore I lack something. I am not a complete person. My label tells I am weak and dependent. I would like to be as able-bodied and powerful as others, but this will never be possible.”

Underestimation (denial of difference): “People look at me as if I were different, but they are wrong - I am not different. The difference is only in their eyes: I have no special problem.”

Superman (extraordinary difference): “My disability exists and I am proud of it. It is a challenge for me. Last year I climbed the highest mountain in Europe, now I'm preparing to climb Everest unaided. I want to demonstrate that people with disabilities are better and braver than others.”

Acknowledgement of difference: “Disability affects some aspects of my life: I need somebody's help in doing activities such as opening a can, feeding the fish, or taking a shower. I can do some activities by using technology in an intelligent way: I use the lift to overcome stairs, when I travel by train I get organised well in advance... Sometimes this condition is not particularly good, sometimes not really bad: isn't that the same for any other person, after all?”

Self-determination: “I am a person with disabilities and I am aware of it. This condition is neither better nor worse than others, but it is certainly a special condition. We, persons with disabilities, have special needs, and may have to seek out knowledge to get the right solutions. Some of us may need technology, others personal assistance, and there are also those who only need to change their attitude towards disability. Some persons with disabilities look up to me as an example because I seem lively and active. They say I am a leader... perhaps I am. What I know is that I may always need some help from others, but I am definitely autonomous and I like to pursue independent living.”

⁵¹ Hales G: *The educational experience of disabled people: irresistible force or immovable object*. Milton Keynes: Open University, 1987

See also: Nelson J A: *The disabled, the media and the information age*. Westport London: Greenwood Press, 1994

See also: Finkelstein V: *Attitudes and disabled people: issues for discussion*. Washington: World Rehabilitation Fund, 1985

The individual's image of AT

The individual's image of AT is another factor that influences the willingness to learn and use AT. Usually it is closely linked to the image of disability, but not always: there are cases where disability is well accepted, but the person has poor information on AT that this is filtered through cultural paradigms.

AT can be seen positively as a tool for *extending abilities* ("it allows me to make the best use of the abilities I already have"). Alternatively, it can be seen positively but with less enthusiasm as a *tool for living* ("like any able-bodied person I use a pen to write, I just need a pen that has an augmented grip").

Less positively, AT can be perceived as something that is *needed but makes life unpleasant* ("I am *forced* to travel in a wheelchair"), or even as an exterior sign – a *stigma*- which "reminds me and others that I will never be able" ("I am *confined* to a wheelchair").

Depending on his/her self-image, the user may pay attention to aspects of AT (e.g. aesthetics, technical quality, etc) that are of little interest to less motivated people. One of the educators' challenges is to promote positive attitudes towards AT where these do not yet exist.

The individual's feeling about autonomy

There are people who strive to gain full control of their lives and people who do not feel motivated enough to take the lead in those aspects of life where they still depend psychologically, technically or financially on other people.

This may be linked to factors like age, temperament, previous history and experience, and existing relationships in the primary network. The individual's feeling about autonomy is a dynamic process that evolves over time; AT education is often part of more comprehensive education addressing *autonomy*. AT and autonomy are interrelated: knowledge of AT facilitates the achievement of autonomy, and, in turn, autonomy increases interest in AT. Trainee groups often include people with a strong desire for independence and others who show limited or no desire - people who have full control over their lives and people who have none. This variation in attitude should be a matter of attention for educators.

5.1.4. The individual's expectations

Expectations of AT represent another predisposition factor that influences the individual's willingness to learn. Given that *autonomy* can be described as the level of *relational comfort* with oneself, with the environment and with other people, it cannot be defined in absolute terms. It is related to the individual's priorities and personality: in the same situation one individual may regard him/herself as *autonomous*, while another might feel *restricted*. Likewise, a

person may experience both feelings in different periods of life as a result of personal growth. What makes the difference in these cases is the level of individual *expectations*⁵². This term may well refer to life as a whole (general satisfaction or dissatisfaction with life); however, in this context we wish to focus on concrete objectives that the person wishes to set for him/herself.

Factor	keywords
expectations in the domain of inner relations	self-esteem assertiveness problem-solving ability
expectations in the domain of daily activities	range, preferences, priorities and value that each person assigns to various daily-life activities
expectations in the domain of outer relations	range, value and depth of relationships with other people as desired by the individual

Expectations in the domain of inner relations

Expectations in the domain of *inner relations* concern aspects like self-esteem, acceptance of disability, assertiveness, perseverance, and decision-making and problem-solving abilities⁵³. An assistive device that meets expectations of this kind can be qualified as *consonant* to the individual. One individual may place great importance in the aesthetics of an assistive device, while another may find aesthetics merely a hindrance to functionality. This variance is often linked to socially agreed views and values, and may well depend on the local culture - an area that presents enormous variation throughout Europe.

Low expectations in these domains may pose barriers to the exploitation of AT potential. Conversely, unrealistic expectations may lead to frustration and dissatisfaction when not met. The failure of an assistive device is often the result of an unhappy experience associated to it.

Educators should devote attention to these aspects, estimate individual expectation levels, and make the user aware that appropriate AT can help meet expectations in this domain.

Expectations in the domain of daily activities

As stated earlier, AT must also be *competent* and *contextual*; in other words, it should make it possible to achieve the intended operational objectives, in the environment where they make sense.

This clearly depends on the user's expectation level related to each activity of daily living, which in turn may depend on age, education, culture, disability, lifestyle before the disabling event, etc. The importance of some basic activities like personal care or carrying out a job is indisputable for the entire population. Nevertheless it is true that each individual prioritises daily activities differently:

⁵² Lorentsen O, Hem G K: *Critical factors and general outcomes of assistive technology*. Deliverable 1 TIDE/CERTAIN study. Brussels: European Commission, 1995

⁵³ *Ib.*

for one person, being independent in cooking and housekeeping may be a top priority, while for another the most important thing may be pursuit of a hobby or engaging in a social activity⁵⁴.

Such different views towards activities means that each individual will pay more or less attention to one topic or another as presented by the educators, as if s/he viewed AT through filtering glasses, so to speak. When interviewing participants after a course dealing with a broad range of AT topics, answers to the question “What aspect did you find most interesting?” commonly cover most of the topics - an indicator that there is also a wide spread of expectation levels.

Educators should be aware that the level of importance they place on the various topics might not correspond to each participant’s view. This calls for active-learning pedagogical approaches, where participants are offered the opportunity to focus on areas matching their individual expectations. What’s more, it may also require strategies that facilitate the re-definition of expectations.

Expectations in the domain of outer relations

Another aspect of *contextuality* is the human setting of each person’s activities.

Many daily-living activities have no meaning in themselves; they are just tools to establish relationships with other people. So individual expectations concerning the range, value and depth of outer relations in some way determines expectations in activity domains. Of course, all three domains are closely interrelated: an augmentative communication system for writing and talking (activity) may exert a dramatic influence on self-esteem (inner) and motivate the individual to take an active role in the community (outer); a social role in turn may activate the need for other activities (e.g. mobility) that previously attracted little interest⁵⁵. Very often a technical aid brings about positive results in activities that at first glance appear to have nothing to do with the purpose of the device.

Educators should be aware of the existence of these three domains, and of the correlation existing among them. This classification can be used as a tool for gaining insight into the participants’ expectations, as well as a tool their self-reflection.

Motivation is one of the key factors in learning. On the one hand, existing expectations can be used as a powerful tool to maximise learning. On the other, participants can be encouraged to modify those expectations in terms of either *generating expectations* towards aspects that were not considered before, or *tuning expectations* to a realistic level. Lectures and speeches can only *increase*

⁵⁴ Ib.

⁵⁵ Ib.

awareness and knowledge of expectations; they are unable to *generate* them inside people. Conversely, much can be achieved by facilitating relationships among participants, leading to comparison of different expectations or even the creation of role-modelling experiences (a particular peer who has solved problems I feel are important can represent “a model for me”).

5.2. Preparing trainees for action

5.2.1. Environmental factors

When trainees go back to their community, the challenge begins; it is time to put the knowledge received into action. However, the community may support or hinder the individual's pursuit of autonomy and adoption of AT. Four factors related to human, physical and organisational aspects need to be addressed.

factor	keywords
image of disability in the community	labelling underestimation superman acknowledgement self-determination
architectural barriers	accessible vs. inaccessible architectural environment
organisational barriers to the use of community services	complexity cost co-ordination continuity attitude
living environment	own home rented home institution small group supported living

Image of disability in the community

The varied attitudes that persons may have towards their disability are often found in the community as well.

Although each member of the community holds an individual image, a *general* attitude ("public opinion") may often be encountered in the local community as a result of cultural heritage, previous experience of people with disabilities, human openness, and opinion leading in the media. The way AT is regarded forms part of this attitude, since public opinion usually relates AT directly to disability. Thus persons with disabilities who have developed a positive and active attitude often have to face prejudices and may find themselves in the position of "ground breakers" towards more civilised attitudes. This position may make them feel alone and uncomfortable with the "unwanted" public role they have to play in the community. This can lead to awkwardness and the urge to give up - fighting is tiring.

Conversely, a community in which the image of disability is positive and balanced may offer a very supportive environment for any initiative that the person wishes to take in order to solve his/her problems.

Educators should understand what societal attitudes await trainees when they go back home. Some educational exercises can be carried out to prepare them for possible demanding impacts.

Architectural barriers

Environmental accessibility is a prerequisite for any successful action. Architectural barriers in the community may not present an insurmountable problem, in that technical solutions are often available to overcome them. However, they may call for expensive AT and personal assistance set-ups that are not within everybody's reach.

The greater the barriers, the higher the level of dependence the persons are exposed to, so high-level problem-solving abilities should be provided. Persons who live in an accessible environment may not even need to consider, say, overall wheelchair width, while others who everyday face curbs, steps, narrow doors, traps, badly parked cars and the like should expect any trip outdoors to be a kind of jungle safari where they can get stuck or find themselves in danger anywhere. These persons need to be "jungle-wise", which requires them to have greater experience, assertiveness, determination, tricks-of-hand and creativity than their "lucky" peers living in a civilised community.

In most countries such barriers are illegal, or at least there are provisions to encourage their elimination. In this case, a good empowerment tool is knowledge of such *legally-established rights* and the ways or procedures to activate intervention of the competent authorities.

Finally, those pioneers who confidently move about in public in spite of barriers may sometimes find themselves involuntarily become public figures. Their moving about attracts public interest towards them as living tokens of the faults in society. As stated earlier, not everybody feels comfortable when suddenly projected into a public role, and some may not resist the temptation to withdraw.

Nevertheless, educators can help to transform this problem into a challenge by pointing out that only the active presence of persons with disability in society can shape the societal culture. Many trainees are willing to take on this challenge - to go ahead not just for their own sake but also to shape public attitudes and prepare a better future for both themselves and other persons with disabilities.

Organisational barriers to the use of community services

Other barriers may exist in the community that are not related to the architectural environment but to the way public services are organised. We are not referring here to missing pieces in the jigsaw puzzle of accessibility arrangements, such as the classic "accessible bathroom that nobody can find the key to", a situation that should be considered an architectural barrier in the broad sense. What we are referring to here is *people* and *procedures*.

Any service, like an AT service delivery system or a municipal social service providing personal assistance, is of little use if not easily accessible to those who need it⁵⁶.

An initial barrier may be **complexity**, when people have trouble understanding where and whom to apply to, have to knock on many doors and receive only cryptic answers in bureaucratic language. A second barrier may be **costs**, represented not only by the actual charge for each set of services but also by any related human costs (time employed, effort spent in travel, etc) and material costs (transportation to reach the service centre, etc) borne by the user.

Co-ordination barriers may be encountered between the various steps of the service provision procedure, between the various professionals who participate in the process, or between interrelated services (e.g. AT service delivery and personal assistance; technical requirements imposed on AT that are obsolete with respect to current market standards; personal assistance regulations that conflict with labour legislation). **Continuity** barriers are often present in services whose organisation is adjusted to the staff's rather than the users' needs; users may find that the service is unavailable in the very moment they really need it and cannot wait.

Last but not least, it should not be overlooked that services are carried out by people (officers, health/social professionals, etc) whose attitude towards users can vary, thus greatly affecting service quality. From the users' viewpoint, **attitudinal** barriers are often a major source of unreliability in services. Consequently, users tend to develop the attitude that you have to push hard to get what is due to you, but at the same time the individual may feel intimidated because power lies in the hands of exactly those people who represent the barrier.

Training users to get the most out of services, as well as developing abilities to overcome such barriers, is an important objective for educators.

Living environment

The environment where the person regularly lives provides opportunities but at the same time may place limitations on what the user can really do in terms of AT.

In principle, users living in their **own home** can do whatever they like, since they own the spaces where the equipment will be used or installed. The situation is different for people living in a **rented home**, where all installations or adaptations should in principle be made in such a way that they can be removed after the resident leaves.

⁵⁶ HEART. *Improving service delivery systems for assistive technology - a European strategy*, Brussels: European Commission, 1995

A situation where the user's decisions are highly subjected to others is the **institution**, where in principle only mobile or movable equipment can be used at the user's discretion, provided it places no burden on other residents or the personnel. Other types of living environments common among people with disability in Europe who wish to live independently are **small group** flats, where several users live together, or **supported living**, where users live alone or with their families but can rely on a round-the-clock assistance service for basic needs. Given that these set-ups are designed for people with disabilities, it would be reasonable to expect them to be arranged for extensive AT use; however, this is not always the case.

An issue that educators should bear in mind, and thus transmit to trainees, is “What does the living environment allow - or force - me to do?”.

5.2.2. Social support factors

Facilities, services and competence are often available in the local community (or within easy reach) to support the individual in making informed, responsible and effective AT choices. However, such social supports may in some cases be lacking. Depending on the situation, educators may need to teach trainees how to get the most out of existing supports, or even how to act in their absence.

Factor	keywords
information services	databases catalogues guides publications exhibitions
counselling services	technical aids advice services disability resource centres peer counselling
advocacy /management services	practical assistance in implementing the individual's initiative
health / rehabilitation facilities	AT expertise of health/rehabilitation professionals in the local community
AT service delivery system	legislation procedures fixed list of prescribable devices user influence on decision appeal
Public funding	full funding substantial funding little funding no funding

Information services

If knowledge paves the way to understanding AT, information allows users to keep up-to-date on market developments and thus make use of their knowledge in the future as well. Since empowerment means having not only the “fish” in hand but also the “fishing rod”, a major aspect of AT education is to enable people to find out information, or make use of information resources, on their own.

This should be based on thorough knowledge of the information sources that are within easy reach of the user. **AT Databases** are available in a number of countries, including Belgium⁵⁷, France⁵⁸, Germany⁵⁹, Great Britain⁶⁰ and

⁵⁷ VLIBASE CD-ROM. Leuven, Copyright VLICHT Katholieke Universiteit Leuven

Italy⁶¹. Not all of them are primarily intended for end-users, but anyone who has received basic AT training would have little difficulty understanding the information contained. The European Commission's Handynet programme (part of the DG5/Helios project - 1988/96) is the largest European initiative that has so far been devoted to AT information. The Handynet database was produced on CD-ROM until 1997 and is now no longer available; however, the classification and description standards it generated have since been adopted for most databases in the field. This makes it fairly easy to interpret data when switching from one database to another.

Catalogues are the most common commercial method of product information. Printed catalogues are still the most familiar and attractive way to access information, and in fact they are the only means accessible to people who do not use a computer.

Research centres, information services, and even some firms produce valuable **guides** that offer an outlook on AT topics (e.g. choosing a wheelchair, getting funding from the SDS, etc). In some countries there is also a wealth of accurate, well-designed **publications** that are easy for AT users to understand. Unfortunately, such resources are not available in all countries, and not everyone is able to read English or French, the languages in which most of the publications in this field are produced.

Some of the above information can be found on the **Internet**, in the form of web sites on disability, online databases accessible from WWW, or on-line catalogues or guides. Currently, there is an international trend popularly called the *Worldwide AT Information Network* to interconnect the various existing information systems on the *World Wide Web*. This is still in the early days, and is destined to evolve rapidly in directions that are difficult to foresee today.

Finally, a significant role in the dissemination of AT information is played by commercial **exhibitions**, which are held regularly in each country.

Counselling services

Advice, guidance and counselling services addressing the individual offer a tremendous opportunity for persons with disabilities. They can provide specific knowledge and expertise whenever a decision in AT is to be made, or simply when some help in clarifying needs is required.

Educators should be aware that it is virtually impossible to provide trainees with the ability to solve *all* their AT problems just through an educational curriculum. Needs evolve over time, horizons shift, technology develops, and medical conditions or health status may undergo modification, so the individual

⁵⁸ HANDYBASE. Paris, Copyright CNLH. [Http://www.handybase.fr](http://www.handybase.fr)

⁵⁹ REHADAT CD-ROM. Cologne, Copyright Institut der Deutschen Wirtschaft. Also on the Internet. <http://www.rehadat.de>

⁶⁰ DLFBASE. [Http://www.dlf.org.uk](http://www.dlf.org.uk)

⁶¹ SIVA CD-ROM. Milan, Copyright Fondazione Don Carlo Gnocchi. Also on the Internet <http://www.siva.it>

is called upon to make new choices and decisions every day. Therefore, when concluding an educational process it is important to help the trainee identify services, places and people to refer to whenever guidance is needed.

Some parts of Europe are quite well served, while others are almost completely lacking in such services or, if they do have them, offer low-grade expertise. If suitable services are not in place in the community where the person lives, the user can be helped to get in contact with quality services located elsewhere. Distance may be a problem, but having something far away is much better than having nothing nearby: knowing that there is somebody ready to help at the other end of a telephone line makes a big difference.

In some countries **technical aids advice services** are common. These provide information, guidance, advice and counselling to individual end-users, family members, rehabilitation professionals, and technologists looking after disabled clients. These services are sometimes located within rehabilitation departments of hospitals or community services, or alternatively are stand-alone centres set up by public bodies, insurance agencies or users organisations. The coverage and level of expertise they can provide varies greatly, depending on the size and qualification of the staff, the information resources used (databases, catalogues, etc), and the possibility of seeing and trying out technical aids on permanent display. The staff in some centres is made up exclusively of information officers with basic AT training. Others have an interdisciplinary staff of clinical professionals and technologists who are able to carry out a thorough assessment (often including home inspections) and thus provide detailed recommendations for individual AT programmes. Then there are other centres that play a “gatekeeping” role in AT service delivery, in that they have responsibility for prescribing individual AT programmes, installing and fitting devices, training users and ensuring maintenance.

Disability resource centres are another valuable facility, where a broader spectrum of information is offered to people with disabilities, covering AT, legislation, benefits, community services, accessible tourism, events and initiatives, literature and the like. Covering such a wide scope, these centres obviously provide less specialised AT assistance than technical aids advice services do; however, they are always extremely useful early guidance points.

Another service that may be available is **peer counselling**, either on an informal basis or formally structured at both group level (e.g. self-help or mutual-help groups) and individual level (experienced AT users on hand to discuss possible problem-solving approaches with novice users). *Peer counselling* should not be seen as an alternative to *professional counselling*, since their objectives are very different.

Educators should understand the value of both forms of counselling, and try to teach trainees to be good users of such services and to co-operate with them as far as possible.

Advocacy/management services

These are services whose mission is to assist users in carrying out the steps involved in solving a problem. This can be done by advocating users' rights before competent bodies, or even by acting on the user's behalf in handling complex matters, administrative procedures, shipping and handling operations, aggressive adversaries, etc, in order to implemented fully the individual's initiative. Indeed, *advocacy and management* services help to overcome organisational barriers in society, which present a major threat to the user's power.

Such services are sometimes offered by companies on a commercial basis, where the user pays periodical subscriptions or single-service fees. However, they are more commonly offered by non-profit user organisations committed to the empowerment of people with disabilities (in both the political and social sense).

Educators should know whether advocacy services exist and encourage trainees to get in touch with them.

Health / rehabilitation facilities

In recent years, professionals in the health and social service fields have acquired greater understanding of the role of AT, even though in many countries AT is barely covered in their academic training.

Thorough knowledge of AT should be a fundamental attribute of a good rehabilitation team: it is a prerequisite for consistency between AT and therapeutic decision-making, the individual's lifestyle and priorities, and economic resources. Many rehabilitation services have expert knowledge, with clinical protocols that hold AT in the highest consideration, occupational therapists with solid AT experience, specialised technologists like prosthetists or rehabilitation engineers, technical aids advice services, educational programmes for end users, facilities for self-organised peer counselling, and so on.

By contrast, the focus in many other centres is on strictly medical aspects, AT intervention being considered as somehow external to the team's responsibility. In this case the end-user may be left with nothing but a filled-in prescription form in his/her hands, and have to set out alone to find a commercial AT supplier that will really look after his/her problem. It is not uncommon to find users whose problems do not receive due consideration simply because the *prescriber's* AT expertise was inadequate.

In principle, most persons with disabilities will not need rehabilitation services unless their medical condition specifically requires it. However, keeping in contact with rehabilitation teams may be necessary in those countries where access to publicly-funded AT is granted through medical prescriptions.

Educators should help the trainee to evaluate the AT expertise of professionals, and choose, wherever possible, those services that are likely to provide a high level of competence. The best weapon against the ignorance of others is knowledge and information; informed, demanding, assertive and responsible users can challenge public services and demand suitable responses, thus leading to service improvement in the long run.

AT service delivery system

End-users are very keen to learn about the systems they have *access* to. In courses attended by people from different countries with different SDSs, few trainees are particularly interested in finding out about other systems: they wish to concentrate on the SDS they themselves will use, like “a car that is worth learning to drive perfectly”. That is one reason why training in SDSs should be tailored to the contexts in which the trainees live.

The SDS is rooted in **legislation**, and the trainee should understand - if not the details - the philosophy, approach and future evolution. In times when welfare legislation is undergoing fundamental reform, it is important for end-users to understand what is changing and why. They should be made aware of the major tools for following such changes, i.e. the mass media and specialised information sources like online legislation databases specialising in disability matters.

If legislation states *what* it is possible to do, **procedures** establish *how* to do it. Procedures are described in official documents, but many people find the bureaucratic language used to be cryptic. It is more important to gain practical knowledge through examples and case studies that:

- describe problem-solving situations;
- illustrate how failures sometimes lie not so much in the procedures themselves but in the people responsible their implementation;
- challenge trainees to overcome obstacles.

Another important subject to cover is the **fixed list of prescribable devices**, if the SDS has one, so as to be able to forecast if the related application is likely to be successful or not.

Finally, it is important to know the level of **user influence** such procedures allow and how to make use of that right, including the ways to **appeal** (where this is possible) against professional decisions that the end-user deems to be wrong.

Public funding

Wealth may not necessarily lead to happiness, but neither does the lack of money. The availability of public funding for AT makes a real difference to people whose wallet is not fat.

So economic considerations assume increasing weight in the choice of AT the further we move away from **full** or **substantial funding** to contexts where **little** or even **no funding** is provided. In the more favourable contexts, attention should chiefly be focused on SDS procedures, which may sometimes be quite complex and need sorting out with the help of an advocacy service, but will finally ensure that the desired technology is in place. In the less favourable contexts, attention may be shifted to the best ways of evaluating a device's cost-benefit ratio, and to establishing which devices are *top priority* and which are *useful but not necessary*.

In any case, the cost-benefit issue should be given proper consideration in AT education. With **full** or **substantial funding**, it is presumed that professional services are capable of evaluating the cost-benefit ratio of the device to be funded. However, the user's assessment may sometimes class with the professional judgement. The more the user thinks in terms of cost-benefits, the stronger his/her negotiation position with professionals will be. Where **little** or **no funding** is available, the user bears the direct economic consequence of his/her choices, so once again performing cost/benefit analysis it of prime importance. Cost analysis should not be restricted to the purchase/investment cost of the AT device, but should also include costs related to maintenance, associated services, and the personal assistance required⁶². As a basis for comparison, trainers should present the *cost of not having the device*.

5.2.3. Market factors

The existence of an effective AT market is to some extent a prerequisite for freedom of choice. Educators should know the ins and outs of the AT market so as to guide trainees to negotiate good terms with providers or suppliers. As shown below, there are five market factors that influence end-users' accessibility to AT.

⁶² Persson J, Brodin H. *Prototype tool for assistive technology cost and utility evaluation*. Deliverable 2 TIDE/CERTAIN Project. Brussels, European Commission 1995

factor	keywords
purchase cost	insignificant affordable unaffordable
maintenance cost	insignificant affordable unaffordable
range of available products	limited vs. comprehensive
product design factors	safety standardisation/certification ergonomics robustness performance compatibility upgradability aesthetics
supply service quality	pre-purchase trial sales after-sale service training maintenance recycling renting

Purchase cost

Since AT encompasses an array of products and services that range widely in cost, it is impossible to deal with this topic in general terms. Some AT products are accessible to anybody free of charge (e.g. free-domain software), while others cost many thousands of Euros (e.g. a sophisticated electronic wheelchair, or an eye-gaze-operated computer control). Since it makes no sense to define costs in absolute terms, they should be looked at from the end-user's viewpoint. The cost of the device may not correspond to the actual purchase price, but just to the amount of money the user personally has to disburse. For instance, the user considers an expensive device that has been paid for entirely by the state as costing zero.

Therefore the cost issue should be approached in terms of the individual's situation, which depends on the kind of technology needed, the wealth of the would-be user, and the market situation and SDS provisions in the country or region concerned. Within an educational programme, the cost topic should be dealt with in terms of designing funding strategies and exerting market influence, instead of fruitlessly complaining about the high cost of AT.

This is why it is more correct to speak - and encourage the trainees to speak - in relative terms like **insignificant** / **affordable** / **unaffordable** than in absolute terms like *low* / *medium* / *high cost*. A very rich person may regard the price of an expensive device as an *insignificant cost* even if s/he has to cover it completely out of his/her own pocket. On the other hand, even if 90% of the cost of the same device is covered by the National Health Service, the remainder might still represent an *unaffordable cost* for a poor person.

Finally, users should be helped to evaluate the real purchase price, which may differ from the figures shown in the supplier's price-lists. The term *real cost* refers to the device installed and ready to serve the person's autonomy, which may incur assessment costs, shipping and handling, installation, fitting, personalisation, and last but not least the cost of training to use it properly. In other words, *real cost* is the *cost of having the problem solved*.

Maintenance cost

The maintenance cost is often an underestimated factor. Therefore, if educators decide to enter the cost issue, they should bear in mind that from the users' viewpoint maintenance cost is a major issue.

An AT device, or a mix of AT devices serving a given purpose, serves the user for a certain period in which resources are needed for maintenance. Some SDSs also cover maintenance, but more commonly the user him/herself will have to provide for maintenance even if the device was purchased with public funds. The above considerations also apply to maintenance costs, so once again it is improper to speak in terms of low/medium/high cost; the categories ***insignificant/ affordable/unaffordable*** are more meaningful.

Maintenance is a *running cost* that includes both *technology-related* and *human assistance-related* aspects. Cleaning, electricity, repairs, spare parts etc. are *technology-related* costs that are incurred continuously or at regular intervals in order to ensure that AT works well for its whole technical lifetime. Some devices may also involve *associated services*; for example, taking a bulky wheelchair on a long-distance trip may entail hiring a special transport service. *Assistance-related* costs concern the nature and amount of human resources needed to get the AT solution working⁶³. For instance, a pushchair makes sense only if pushed by a personal assistant. It is often difficult to calculate such costs in monetary terms because they mainly comprise *man-hours*, which may be paid for or not depending on whether a formal or informal helper is used. In any case, man-hours are a resource that is drawn on and thus a cost to be considered.

Range of products available

AT choices are necessarily limited by the range of products and services available on the market.

However, a distinction should be drawn between the *theoretical market range*, i.e. the entire range of products available somewhere in the world at any given time, the *real market range*, comprising products actually accessible to a specific person living in a certain place, and the *apparent market range*, i.e. what the user *thinks* is available.

The extent of the *apparent* market range does not depend solely on the spread of AT retailers throughout the territory; it depends greatly on the person's ability to look around and get in touch with a supplier. Those who have always lived in the same place and have little experience of the outside world may view the market range in terms of the three or four retailers in town, whose decisions about what devices to stock or display are guided by commercial

⁶³ Andrich R, Ferrario M. *Cost outcome analysis for assistive technology: case studies*. Del.3 TIDE/CERTAIN Project. Brussels: European Commission, 1996

considerations. Consequently, they are highly dependent on the vendors' proposals and may be quite disadvantaged if they live in badly served areas. By contrast, a well-travelled person who visits exhibitions, speaks a foreign language, is assertive with vendors and asks to be regularly informed may get a more realistic picture of the AT market; he or she will probably evaluate the quality of products and suppliers, and analyse a wider range of offers whenever a choice is called for.

Technical aids advice services play a very important role in helping users to broaden their view of the *apparent market* and match it to the *real market* range. Since the aim of retailers is to sell their goods, they cannot be expected to provide the kind of unbiased advice expected of a technical aids advice centre. Therefore, the problem can be overcome to a certain extent by encouraging AT users to get independent advice before deciding.

At the same time, the root of the problem is to train users to become informed and responsible consumers who understand what the *real market* is. Moving from individual to group level, another dimension of the problem is to promote consumers' initiatives to bring about an improvement in the real market range. These considerations pose quite interesting challenges for educators.

Product design factors

The effectiveness and utility of AT depends not only on appropriate choice of the individual AT programme, but also on the technical quality of the products themselves.

Devices that frequently fail, that require undue effort from the user, or that are incompatible with the environment or with other devices may generate more problems than they solve. What's more, they may not actually permit the user to reach the expected objectives, resulting in frustration and loss of autonomy.

Therefore, it is important to understand what level of quality can be expected and required of products. In its popular meaning, *quality* is not seen in absolute terms but with respect to the specific context of use; it is the *quality of the solution*, rather than the *quality of the device*, that is of interest to the user. However, product design characteristics often play a fundamental role in ensuring a good-quality solution, especially in a tough environment (think of an electronic wheelchair for a person living in a place with steep slopes).

There are many parameters that affect the technical quality of the device. Educators should strive to help end-users make their own evaluation of product quality, and to understand the meaning of ***certification*** labels they may find on their products. This does not mean that users need to know the complex technical details of ***standardisation*** requirements; what is important is to understand that when a "medical device" such as a wheelchair bears a CE label, this guarantees that some fundamental ***safety*** requirements have been

met, and so the manufacturer is liable for any injury or damage the user may incur due to technical failure⁶⁴.

Other aspects that should be evaluated include: **ergonomics**, i.e. the way the product matches the user's characteristics and abilities; **robustness** and **performance**; **compatibility**, i.e. suitability for environmental constraints and association with other AT devices; and **upgradability**, i.e. the possibility to modify, augment or improve the device in response to changing user needs (consider a seating system for children), or technological advances (consider a computer interface)⁶⁵.

Today, all these aspects tend to be grouped together as part of good product design. In addition, the concept of **usability** - and *usability engineering* - has recently been introduced to identify the overall set of attributes that result in products gaining strong consumer acceptance, e.g. effectiveness, efficiency, safety, comfort etc⁶⁶.

Another important aspect, although subjectively weighted, is **aesthetics**. Educators should help users to appreciate this factor, since AT devices are often objects that integrate with body image or with home furnishing, and thus should reflect the user's taste and personality.

Supply service quality

The story does not finish when a device has been chosen: the user can expect to face many other problems.

Choosing a good supplier may sometimes be more difficult than choosing the device itself. The same device is often supplied by different vendors with widely varying price and service conditions, and it is not always true that the closer the supplier, the better the service. The ability to negotiate good terms with a supplier is an important issue that educators should consider well. It involves knowing what constitutes good practice in product supply, and being aware of potential problems that may arise at any step in the supply/service chain.

The offer of a **pre-purchase trial** is a sure indicator of quality; the potential buyer can avoid many traps by testing out the device before purchase. This service is not always on offer, especially when the vendor is a small firm that has, say, imported an expensive piece of equipment. However, a sense of the firm's willingness to *serve the customer* and not just *sell goods* can anyway be gained from the initial impression.

⁶⁴ HEART. Line A. *New and more efficient standardisation for users with disabilities*. Brussels: European Commission, 1994

⁶⁵ Batavia A, Hammer G: *Towards the development of consumer-based criteria for the evaluation of assistive devices*. Journal of Rehabilitation Research & Development, vol.27/4, pp.425-436

⁶⁶ USER Consortium. *Userfit: a practical handbook on user-centred design for assistive technology*. European Commission, TIDE/USER project, Brussels 1997

The **sales** conditions may contain surprises like unexpected surcharges for “mandatory” accessories, packaging and delivery, which the user can easily avoid if trained to find out all cost items beforehand. At this stage, the user should be eager to negotiate possible alternative payment schemes (e.g. leasing), and **after-sale service** conditions like warranty. The user should also be informed about any **training** needs, about who is to provide that training, and whether it involves additional costs. Clear information should be sought from the supplier about expected **maintenance**, what to do in case of repair, whether maintenance schemes exist, and the related costs. Finally, it is worth knowing what to do if the device becomes obsolete for some reason before reaching the end of its lifetime, for instance whether it can be **recycled** for reuse by others. It may also be worth exploring the possibility of **rental** when the AT is for temporary use, especially in the case of expensive equipment.

5.2.4. Social network factors

The primary network around the user (family, friends and others who figure significantly) certainly has an influence on the design and implementation of the individual AT programme⁶⁷. Four factors need to be considered in this respect.

Factor	keywords
expectations of the family / primary network	eagerness vs. resistance to change favouring vs. restraining independence
expectations of professionals	AT consistency vs. inconsistency with the individual's rehabilitation programme
expectations of the outer network	role of the individual in the community
role modelling	presence in the network of peers looked up to as models

Expectations of family/primary network

AT programmes often have an impact not only on the individual but also on the whole *system* of primary relationships.

Within the system, the role and weight of the various members with respect to disability problems and AT differs from one case to another, and can even vary over time. There are cases in which the individual with disability does not need to consider the views of others; cases where s/he chooses to share life with others; cases where a wider group is involved; and even cases where the actual end-users of AT are the helpers. In turn, there may be cases where technology is well accepted by the individual but not by the primary network; cases where technology is aimed at family relief rather than at the individual with disabilities; and cases where technology simultaneously offers direct support to the individual and indirect support through the primary network.

⁶⁷ Lorentsen O, Hem G K: *Critical factors and general outcomes of assistive technology*. Deliverable 1 TIDE/CERTAIN study. Brussels: European Commission, 1995

Some aspects of the individual's life project are hard to separate from the family's life project. A range of expectations may originate from the relationship with the spouse, who in turn may have other needs and aspirations that are then shared by the partner. The introduction of AT in a family may call for personal changes among family members. It may also require modifications in the organisation of personal assistance, and thus a change in the attitudes and habits of personal assistants. The success of the same technology provided to the same person may vary if placed within a different primary network⁶⁸.

In all these cases, the members of the primary network can have an influence and a role in the choice and use of AT. They may endorse back or resist the lifestyle changes brought about by the introduction of AT; they may represent incentives or disincentives towards independence and freedom of choice. It is not a matter of having good or bad companions in life, but of recognising that not everybody will find changing habits and lifestyle so easy or pleasant.

Educators should help AT users prepare for potential conflicts. At the same time, they should train the primary network to respect the views of others, be assertive in pursuing vital goals, work towards changing attitudes within the network, and wait patiently for changes to take effect.

Expectation of professionals

It is not always true that the expectations of rehabilitation professionals and AT providers necessarily match those of the individual. What professionals consider as "best for you" is generally seen by an assertive AT user as a respected opinion, an expert suggestion that is worth considering, but not the only option.

Good rehabilitation professionals are aware that they should play the role of educators in helping the user to discover new horizons or perspectives on life that are often unexpected when the person is stuck with personal, physical and psychological problems. But they should also be aware that each individual has his/her own life priorities, so "golden rules" in rehabilitation practice are to be seen not as absolute truth, but as guides to actions that need to be tailored to the individual's actual priorities.

Thus gaps can sometimes be expected between the views of the professional and those of the user, who should be aware of this potential discrepancy. Users should take advantage of the potential that this gap offers in terms of challenge, reflection about unexplored issues, and building of a dialogue and partnership with professionals.

Professionals may be looking at aspects like prevention of medical complications, functional rehabilitation, educational or vocational objectives

⁶⁸ Andrich R, Ferrario M, Wessels R, DeWitte L., Persson J, Oberg B., Oortwijn W, VanBeekum T, Lorentsen O. *Assessing outcomes of Assistive Technology products and services: the EATS instrument*. Deliverable 3.2/2, Telematics EATS project. Brussels: European Commission, 1998

etc, and thus approach AT in terms of the *effectiveness* it offers in reaching those objectives. The user may place greater priority on other aspects, ones that the professional would judge less important but that have greater *utility* for him or her. The result is that s/he may place obstacles to the rehabilitation treatment as designed by the physician. It is not uncommon to encounter situations where AT programmes generate conflicts between the user and professionals, or even clashes within the professional community. The latter situation may be due to differences in professional background, the different bodies involved, lack of co-ordination, or even lack of knowledge.

To be prepared for such a situation, it is important that the user has a positive attitude towards professionals and understands the objective difficulty of identifying “the truth” in complex situations where different truths co-exist. By the same token, they should never take it for granted that all professionals know AT in depth. In other words, users should be led to regard themselves as active protagonists in their rehabilitation.

Expectations of the outer network

Last but not least, AT is in most cases affected to some extent by the local community in which the person lives.

Reintegration in the community may involve reorganising services like transport, adjusting the milieu where the individual with a disability lives (e.g. logistics, workflow, relationships in the workplace), and modelling social attitudes. For instance, the removal of architectural barriers to integrate a disabled person in a school will make it easier to integrate others in the future, in both practical and cultural terms. In other words, the visible presence in the community of members with disabilities brings about a cultural change. In communities where it is common to see persons with disabilities taking part in social life on an equal footing, it may be easier for those who are not born pioneers to reintegrate.

The term “expectations” can be used to define the practical consequences of social attitudes towards disabilities. In an integrated community, people may find nothing unusual in a visually impaired person walking alone in the street with an assistive device or taking the initiative in asking for help when it’s needed, and any passer-by will be glad to offer the required help. In such communities, things like offering a bus seat to an older person, or helping a disabled workmate have lunch or go to the bathroom tend to be considered no more than the civilised behaviour one would expect of a “normal” polite person. Conversely, many people in other communities would not expect an AT user to go around alone, and would feel quite embarrassed and at a loss when encountering such a person. They may think that responsibility for assistance lies solely with professional services, and admire the small minority of “saints” who feel comfortable with disabled persons “even if they are not paid to look after them”.

It is important that users are led to understand the societal expectations towards each of them, in order to be prepared for the awkward situations they may find themselves in. As was the case for the primary network, the user can act as a community educator and promote changes in expectations.

Role modelling

In this context, role modelling can be described as the self-identification of an AT user with a peer who has apparently been successful in solving problems that are felt to be important. “I like the way s/he is coping - I would like to be him/her” is a typical common made by a person with disabilities who is looking at another AT user as a role model.

Seeing living examples of what the user feels to be a “better situation” represents a powerful tool not only for motivation and challenge, but also for identifying hidden needs. Educators can approach the issue of role modelling from three different perspectives: the presence in the teaching staff or trainee group of people that have role model characteristics; the presence in the living environment of other AT users that can be considered role models (“When you go back home, have a look at how what’s-his-name has organised his flat”); and the potential of each trainee to become (consciously or unconsciously) a role model in his or her community.

6. Case studies

*This chapter provides three case studies of educational initiatives for end users carried out during 1998 in Italy, Belgium and France respectively. Many of the concepts discussed in this book are reflected in these experiences. The Italian case (PRISMA) consists of a pair of **residential courses**, while the Belgian (ANLH) and French (GIHP) cases can be defined respectively as a **seminar** and a **course**.*

6.1. The PRISMA case

6.1.1. Context

Centro Studi Prisma was founded in Belluno (Italy) in 1984 as an interdisciplinary association for information and research into technical and social aspects of independent living and social integration of people with disabilities. It is a cultural association composed of people from all over Italy who are professionally or personally engaged in the field of disability, most of them being disabled persons themselves. Based on an interdisciplinary approach, Centro Studi Prisma works to promote culture, information and knowledge concerning all aspects of rehabilitation, social integration and independent living. The underlying idea is that knowledge is the fundamental basis for helping to remove social, cultural and technical barriers that hinder full participation of disabled persons in society.

Pursuing the idea that disabled persons' daily experience with disability makes them the main actors in their social integration, Centro Studi Prisma has held training courses every summer since 1985: these were originally entitled "*Disability and Daily Life: Education Toward Independent Living*" and are now also called *first-level courses*. They are addressed to adults of various ages (including the elderly) with motor and other disabilities - heterogeneity is preferred. The courses are also addressed to personal assistants, who fully participate by attending the same programme (with the exception of group-work sessions, which they attend separately from disabled participants). Up to 1998, the first level course was attended by 274 persons with disabilities and 243 personal assistants from all over Italy and from abroad.

In 1988 the training programme was extended to include a *second-level course* entitled "*Disability and Society: Promotion of Independent Living*", in which the participants are encouraged to act as promoters of independent living in their communities. Before being admitted to this course, participants must have completed the *first level course*. Up to 1998, four editions were held, attended by 89 persons with disabilities and 75 personal assistants.

Both courses are entirely organised, directed and run by a team of experts who have disabilities themselves. Several teachers without disability were invited to join the staff in order to widen its areas of expertise.

The concept of autonomy is central to these courses and AT plays a key role. Independent living is viewed as a way of approaching life and coping actively with disability, on the understanding that nobody is fully independent, everyone depending in some way on others. Trainees are helped to gain awareness of the value of their personal experience, to practice rationalising it when solving daily life problems, and possibly to make use of it for role modelling or peer-counselling for others with disabilities. The programme of the *first-level course* mostly focuses on *technical components* of AT education, however some *human* and *socio-economic* subjects are also dealt with. The *second-level course* focuses exclusively on *human* and *socio-economic* issues, addressing topics such as combating social prejudice towards disability and AT. On the whole, the courses provide comprehensive training on AT, help to shape users' attitudes towards taking control of their lives, and favour the exploitation of personal experience of disability for social growth.

6.1.2. Design and set-up

Planning

In 1998, Prisma held the fourteenth edition of the *first-level course* together with the tenth edition of the *second-level course*. A preliminary announcement was circulated at the beginning of the year containing information about general course objectives, the venue, the duration and dates. These aspects had been decided the previous summer at the conclusion of the previous edition.

In March, the Prisma staff met to plan the courses operationally and organise them. At that meeting a number of responsibilities were assigned: appointments included a *course co-ordinator* (director), *teaching staff* (four experts), five *group work co-ordinators*, an *organisational manager* and the *secretariat*. A final programme was worked out, practicalities were defined, and deadlines for the launching stage were established.

The chosen location was a holiday resort in the Dolomite Mountains lying 1,200 metres above sea level; this resort is fully accessible to people with disabilities but open to the general public. The venue was the same used for previous editions, since it had proved highly satisfactory in terms of general comfort, overall accessibility, lodging and bathroom accessibility, aesthetics and seating arrangements, as well as being set in a fresh and healthy location. Favourable accommodation rates were negotiated, and an individual registration fee for trainees was fixed in order to cover some of the costs of the course.

Publicity

The courses were widely publicised by means of leaflets (sent out to the addresses contained in the Prisma database), articles in specialised journals, announcements on local television, and, for the second-level course, by contacting those who participated in previous editions of level one. Leaflets were also sent out to voluntary organisations, technical aids information centres, rehabilitation centres, as well as being handed out at congresses and exhibitions. Information was also spread by word of mouth.

Trainee Selection

As the courses were aimed at a very specific *target* and had well-defined *learning objectives*, it was important to ensure the participation of suitable trainees. A selection procedure was established and a person internally referred to as the *filter* was appointed to implement it. The *filter* interviewed candidates over the phone and filled-in a confidential form divided into two parts, one for general information on the candidate and the other for the compiler's notes. The *filter*'s main tasks were to:

1. collect essential information on the candidate (disabilities, life context, autonomy etc);
2. provide the candidate with as much information as possible on the course;
3. understand the candidate's motivations for attending the course;
4. verify that the candidate had read the programme carefully and had understood that the course was residential;
5. give accommodation details and find out whether the candidate was willing to room with others;
6. explain that the organisers were unable to offer personal assistance during the course, so candidates had to bring their personal assistant if needed;
7. find out any special practical needs the participant may have, including possible medical needs requiring health facilities available at easy reach.

The *filter* sought to talk personally with each candidate. However, this was not possible in all cases because some candidates with severe communication problems could not manage a phone conversation. Consequently, it was sometimes necessary to talk with relatives, assistants, or even rehabilitation professionals who had proposed the course to their clients.

The information collected during this phase was essential not only for admitting participants, but also for other purposes, including:

1. logistic organisation - accommodating for the various levels of independence, mobility problems, specific needs, habits, difficulties, accompanying persons;
2. composition of work groups - established before the start of the course so as to separate persons with disabilities from personal assistants, and make each group as heterogeneous as possible in terms of age, geographic origin, pathology and disablement;

3. adjustment of teaching contents and style in response to the participants' cultural background and level of autonomy.

At the end of the selection process, 26 persons with disabilities and 27 personal assistants were recruited for the two courses. Their ages ranged from 18 to 75, the average being forty. The disabilities originated from a wide variety of pathologies, some of them progressive. Some persons also had verbal communication impairments.

6.1.3. The programme

First Level Course		Programme	
		session	Topic
Sunday 26/7/98	Afternoon	arrival / accommodation	
	Evening	Welcome session	· Introduction to the course
Monday 27/7/98	Morning	General concepts	· Impairment, disability, handicap · Accessibility, assistive devices
	Afternoon	Group-work No.1	· Definition of autonomy
Tuesday 28/7/98	Morning	Personal Care	· Organising the home · Personal hygiene and body care
	Afternoon	Group-work No.2	· Adapting a flat to participant needs
Wednesday 29/7/98	Morning	Wheelchairs and seating	· Manual and electronic wheelchairs · Seating systems
	Afternoon	Legislation	· Italy's legislative framework · Regulations on AT and accessibility
Thursday 30/7/98	Morning	Outdoor environment	· AT for outdoor mobility · AT for leisure and sport
	Afternoon	Social programme	· Outing in the Dolomite Mountains
Friday 31/7/98	Morning	Communication	· AT for communication · Environmental control and telecommunication devices · Corporeity aspects: body, communication, sexuality
	Afternoon	Group-work No.3	· The individual, family and society
Saturday 1/8/98	Morning	Computer access	· Computer-based AT · Technical aids exhibition
	Afternoon	Information resources	· The SIVA information network · Centro Studi Prisma · Networks in the European Union
	Evening	Farewell session	· Course Evaluation
Sunday 2/8/98	Morning	Departure	

Second Level Course		Programme	
		Session	Topic
Sunday 2/8/98	Afternoon	Arrival / accommodation	
	Evening	Welcome session	
Monday 3/8/98	Morning	Social image of disability	· Disability and AT in the mass-media · Analysis of contents in the media
	Afternoon	Group work No. 1	· Analysis of messages
Tuesday 4/8/98	Morning	Disability and School	· Disability and AT as educational experiences

	Afternoon	Group work No. 2	· Bringing the disability experience to the school
Wednesday 5/8/98	Morning	Human relationships	· Talking techniques and group dynamics
	Afternoon	Group work No. 3	· Practising relationships
Thursday 6/8/98	Morning	Organisational techniques	· Peer counselling and peer mentoring · Setting up AT information services
	Afternoon	Group work No. 4	· Organising educational initiatives
Friday 7/8/98	Morning	Social image of disability	· Creating messages
	Afternoon	Group work No. 5	· Interviewing
Saturday 8/8/98	Morning	Acting and networking	· Promotion of autonomy in local communities
	Afternoon	Farewell session	· Course evaluation

Courses	timetable							
9.00	10.30	11.00	13.00	16.00	17.30	18.00	20.00	21.30
Lesson	coffee break	Lesson	Lunch	Group-work or lesson	coffee break	Discussion or lesson	Dinner	Social programme

6.1.4. Running the course

Co-ordination and management

As the courses were residential, great attention was paid to accommodation matters (distribution of rooms, time necessary to get ready in the morning, etc).

Educational co-ordination involved the whole staff (director, teachers and group work co-ordinators) attending two progress meetings scheduled on Monday and Thursday at 9.30 p.m., and a final evaluation meeting held on Sunday morning from 9 a.m. to 1 p.m.

The *director's* tasks were to ensure the coherence of the course, co-ordinate all teaching matters, and make any organisational and financial decisions. He co-ordinated the team meetings, attended all the lessons, and - with the help of the other teachers - prepared the educational material, the handouts and the group-work material. He also had to ensure that all aspects adhered to the mission, approach and style of *Centro Studi Prisma*. To this end, the directors of the various editions over the years were people who had been first *trainees* in both the first and second-level courses, then *group work co-ordinators*, and possibly also *teachers*. Strong co-ordination proved to be extremely important for the success of the course.

Lessons

Most lessons were in the form of a lecture. Teachers were asked to use simple language, to include numerous examples, and make extensive use of overhead, slide, video and computer presentations. In each lesson, handouts were distributed listing the main concepts covered, so as to facilitate understanding and memorisation, and prepare for the group work to be held in the afternoon.

Interactivity, discussion, learning by doing and good presentation were the four keywords used by the teachers to describe their preferred learning style.

The lectures were aimed at introducing basic concepts, problems and solutions related to daily living with a disability; AT products were sometimes presented and demonstrated. Whenever possible, the whole teaching staff attended each lecture, so as to ensure solid feedback afterwards and to avoid repetitions or gaps. This did not limit each teacher's freedom to choose teaching style, since differences in style were greatly appreciated and considered valuable. The development of topics within each lesson was often sorted so as to start from the body level, then gradually expand to wider living spaces such as the person, the home, the neighbour, the town and the world.

Each teacher was selected on the grounds of his/her competence and experience in the assigned subject. At competence parity, preference was given to candidates with a disability (being able to speak from "inside the disability"), maturity (being able to speak from "outside the disability"), and ability to communicate positively.

Group work

Each group work session was led by a *work-group co-ordinator*. All the co-ordinators were persons with disabilities, chosen for their experience, competence and reliability, as well for having participated in previous editions of the course. In the *first level course*, the participants were divided into five work groups, three of them composed of disabled persons (eight per group) and the other two of their personal assistants (nine per group). The groups of participants with disability were heterogeneous in terms of disability, age, sex and place of origin. The groups of personal assistants were heterogeneous in terms of role (family member, friend, volunteer, professional, etc), age, sex, and place of origin. At the end of each group-work session, the groups presented the results of their studies in a plenary session.

AT information and personal advice

During the breaks in the *first-level course*, a professional AT expert - herself a person with disabilities and a member of the Prisma staff - was available upon appointment to discuss personally individual problems that could be solved by AT. The chosen setting was one deemed appropriate for conversation and equipped with a computer for browsing the SIVA CD-ROM (the Italian Assistive Technology database).

An exhibition of selected AT devices was also set up on the last day of the *first-level course*, in co-operation with some AT suppliers. As well as viewing the products on show, participants were invited to share their personal experiences of AT (home arrangements, aids, inventions, tips for autonomy, etc) and to illustrate them with slides, photos and the like.

Social programme

Although offered as optional activities, the social events were designed to be consistent with the course mission. The social programme of the *first-level course* consisted of four evening meetings:

- videos on subjects covered in the day's lessons (Monday);
- meeting with representatives from the region's user organisations (Wednesday);
- meeting with representatives from the local authorities (Friday);
- farewell party organised by the participants themselves (Saturday).

In addition, an outing in the Dolomites was organised for Thursday afternoon, including a visit to beauty spots, a ride along the area's one accessible mountain trail, a ride up to a mountain top in an accessible cable-car, and free time for shopping and leisure. This outing followed the morning lessons about AT for outdoor mobility, leisure and sport. It was an opportunity to strengthen relationships among participants, and for many a discovery that "nature can be accessible".

Evaluation and follow-up

In the farewell session, the trainees were issued with an attendance certificate. A general discussion was held in which each participant publicly expressed his/her views on the course. A final questionnaire was also handed out, compiled and collected. The information thus gathered was later used by the staff to evaluate not only the effectiveness of the course, but also the organisation's general educational activity.

6.2. The GIHP and ANLH cases

6.2.1. Context

Since 1979, **GIHP** Aquitaine (Groupement pour l'Insertion des Personnes Handicapées Physiques), an association of disabled people based in Bordeaux (France), has been running individual courses for people with disabilities who were seeking to increase autonomy in daily life. The first course was addressed to visually impaired people, and then temporary accommodation and home support services were created for people with motor impairment. Over the past few years, an accessible lodging service and a computer training service have also been added.

In order to ensure that these services were properly run, the association hired a team of skilled professionals in social and employment integration. Thanks to the impetus of the founding members, these professionals (an occupational therapist, a social worker, a psychologist, an educationalist, and an instructor in locomotion, Braille and daily living) developed considerable experience in supporting people in their daily life environment. This support has always taken into account the various complementary aspects of autonomy: psychological aspects related to either the individual or the family, socio-economic aspects, and technical aspects related to increasing autonomy in daily activities. This last element relates directly to the use of AT as a tool for autonomy. GIHP's activities have mainly been organised around individual work focusing on individual needs and based on a co-ordinated multidisciplinary approach.

In 1998, at the behest of the EUSTAT project, GIHP Aquitaine decided to organise a course on technical aids for a group of persons with disabilities. This was a fairly novel experience for the association, joining professionals and users together in a common process.

In a similar context, **ANLH** (Association Nationale pour le Logement des personnes handicapées) in Brussels also undertook the organisation of a new educational initiative for end-users in Belgium. The main mission of ANLH (the National Association for the Lodging of People with Disability) is to promote the social integration of people with physical disability by providing lodging and a living environment adapted to their needs. With this aim in view, ANLH established a set of services called **AVJ** (Daily Life Activities), whereby persons with severe physical can opt for an autonomous lifestyle in their private lodging, supported by a personal assistance service that is on call round the clock seven days a week.

In 1998, following a request from several AVJ services, ANLH launched a training initiative for both users and staff. This had a twofold aim: to provide the knowledge and know-how that disabled persons need in order to find their

own way towards independent living, both in daily life and work; and to train personal assistants in how best to support an independent lifestyle. Named *EPIL*, this training project received funding from the European Commission within the framework of the DG5 Employment / Horizon programme. The topics covered related to disability in general, centring on five key subjects:

- AT and accessibility
- Communication issues
- AVJ services and activities of daily life
- Legislation
- Employment.

It was decided to spread the training over five monographic *seminars*, each lasting one or two or three days to be repeated for three different regions: Brussels, Wallonie and Flanders. This meant that the AT module, designed on the basis of the EUSTAT model, would consist of a *one-day seminar* to be held in three different locations for three different groups of trainees, and in two different languages (French and Dutch). The title chosen was "*From Technical Aids to Decision*".

6.2.2. Design and set-up

GIHP

GIHP decided to dedicate this initiative solely to persons with disabilities, although it had initially been argued that it would also be useful for many others such as families, helpers and professionals, with a fruitful and enriching exchange occurring among the four groups.

A letter was sent out to 900 people who had benefited from GIHP services in the past. The letter contained the project presentation, a phone number for further information and a registration form to send back before the deadline. Applicants were also called on to specify the personal motivations for attending the seminars, so as to assess the spontaneous response to such an innovative programme.

For pedagogical reasons, it was decided to limit the number of participants to twelve, as it was believed that work with a larger group would be less efficient, particularly where practical work, tutoring or exchange sessions were concerned. A register of the applicants' phone calls was compiled, including the kind of information asked and whether the candidate eventually registered. Two selection criteria were applied:

- personal motivation, and
- date on which the registration form arrived.

The training team included two occupational therapists, a social worker, a psychologist, two computer trainers, disabled persons and AT providers. The mix of professionals and end-users was felt necessary to ensure a range of views on AT. Some disabled persons were engaged as professionals, and others

on the grounds of their role in the association. It was also felt that the contribution of the occupational therapists, the social worker and the psychologist would be indispensable, and that the computer technician was essential for computer support and the use of information and communication data. The organisers considered that direct contact and dialogue with AT providers during live testing and exhibition of materials would be extremely useful.

ANLH

Analysis of training needs was the first step in operational planning. This consisted of a brainstorming session attended by AVJ co-ordinators, administrators and end-users, which confirmed that end-users:

- often had limited knowledge of workable technical possibilities;
- had difficulty in using the AT presented to them due to psychological reticence, technical difficulties or functional problems;
- did not know where to go for information, adaptations, maintenance and repairs.

As a result of this brainstorming session, a questionnaire was drawn up and sent out to every trainee, along with an invitation letter to attend the seminar. Returning the questionnaire was voluntary, and trainees were invited to share their personal experience so as to help complete needs analysis.

A set of specifications was then drafted, which identified the AT used and outlined the human environment and socio-economic elements to be covered in the seminar. This provided a guideline that the training officer could follow when planning the day's activities, and setting pedagogical aspects, content and expected results.

The preliminary estimate for attendance was 12 people per region but no limit was set on the number of registrations; if the number of applications proved to be higher a supplementary day would be organised. The trainees were persons with disabilities, most of whom were users of AVJ services in the three regions: Brussels, Wallonie and Flanders. The event was free of charge, and ANLH provided services such as transport and personal assistance in response to the needs expressed in a special coupon that each candidate had filled in and returned. Training was also open to AVJ assistants wishing to participate: agreements with their employers were made beforehand in order to decide whether and to what degree the training session was to be considered as working time.

In order to gather the required training expertise, three specialised centres in the local area were contacted: CRET (Centre de Réadaptation), SAPH (Service d'Aide aux Personnes Handicapées, an affiliate of the Red Cross) and the LBSP (Ligue Belge de la Sclérose en Plaques). The multidisciplinary nature of the training team, including AT users, was important in order to tackle various AT-related fields. It was absolutely essential for the training to be practical, since many trainees had described themselves as having little or no experience.

Trainees and Trainers

At the end of the selection process, the trainee group in the *GIHP* course comprised ten persons ranging in age from 35 to 60, some with visual impairments and the others motor disabilities. The teaching team consisted of an occupational therapist, a social worker, a psychologist, a computer trainer, and some disabled persons and AT providers. The team was led by a training co-ordinator.

72 *trainees* were enrolled for the *ANLH* seminar: 51 persons with disabilities ranging in age from 20 to 60 with severe physical disabilities (such as tetraplegia, paraplegia, muscular dystrophy, polio and multiple sclerosis); and 21 personal assistants ranging in age from 18 to 40, all employees of AVJ services. The group of disabled persons comprised 21 from Brussels, 22 from Wallonie and eight from Flanders, while the group of personal assistants comprised nine people from Brussels, five from Wallonie and seven from Flanders. There were three *trainers* for each site: an educationalist and an occupational therapy from LBSP, and a service delivery expert from the Ministry of Health.

6.2.3. The programmes

The GIHP Course		
<i>Date</i>	<i>Session</i>	<i>Topic</i>
Friday 5/6/1998	Introduction	Trainer/trainee introduction; explanation of the motivations and objectives of the training programme; presentation of the EUSTAT project; self-evaluation questionnaire.
	Theory 1	General concepts; definition of handicap according to the WHO definition; AT as a support for handicap situations and for independent living.
	Theory 2	Definition of AT; ISO classification; standard classification (ten categories); AT research based on the classifications; information resources.
Friday 12/6/98	Theory 3	Choice of AT; individual needs; local resources enabling the individual to make decisions.
	Practice 1	Presentation, demo of computer aids adapted for different impairments.
	Practice 2	Presentation and practice with the Internet; HANDYBASE databank.
Friday 19/6/1998	Theory 4	Half-group session in flats adapted either for visual impairment or motor disabilities; psychological aspects of personal autonomy within community and society; difference between autonomy and dependence; acceptance of AT.
	Practice 3	Half-group session in flats adapted either for visual impairment or motor disabilities. Comparative testing of AT used during daily activities; manipulations; analysis of the differences between models.
Friday 26/6/1998	Theory 5	Socio-economic aspects of AT; costs of AT; financial and legal aspects; funding.
	Practice 4	Half-group session organised on the basis of visual impairment or motor disabilities. AT demo by a supplier
	Practice 5	Critical analysis of Practical Session 4
	Closing	Course evaluation; theoretical and practical competence acquired; analysis of course contents; tips for course improvement.

The ANLH Seminar		
Time	Session	Topics
10.00	Introduction	· Presentation of the EUSTAT and EPIL programs. · Presentation of the EUSTAT User Manual.
11.00	Lecture	· Presentation of a counselling service. · The different types of professionals and when they intervene. · Legislative and financial aspects. · Traps to avoid and handy tricks. · How can end users make autonomous choices?
12.00	Discussion	Questions & answers
14.00	Examples	Two users presented their own experience in AT: history of the choice; why they chose an assistive device; problems, people and specialists encountered; finance; uses of AT; improvements gained from AT; training in AT use; whether the users would make the same decisions if they had to choose again.
15.00	Discussion	Discussion of user testimony.
16.00	Discussion	Seminar evaluation.

6.2.4. Running the courses

Being a short initiative, the ANLH seminar is sufficiently self-explained by the programme above, but further information concerning the GIHP course might prove useful.

The GIHP programme comprised three types of sessions:

- theoretical: definitions, key words, classification, information sources, psychological and socio-economic aspects, choice procedures;
- practical: comparative tests, materials exhibition, adapted computer and introduction to the Internet;
- discussion: roundtables, case studies.

The sessions were spread over a month in order to allow trainers and trainees time for elaboration. The range of topics could have been extended with more lectures, but GIHP wished to give priority to practical sessions so as to maximise interactivity and to involve everybody actively in the work.

It was felt necessary to tackle fundamental aspects of disability definition (such as ICIDH and ICIDH-2) and to relate disability to the human, physical and community environment. AT was approached in conjunction with the concept of autonomy; AT use and the various existing classifications, especially the ISO classification, were discussed.

These concepts were also explored in hands-on sessions for various AT categories. Comparative tests were done to foster reflection about the value of each characteristic. Trainees also attended a commercial exhibition of AT tools, and discussed their relative advantages, drawbacks, limits, and appropriate use contexts. This was followed by discussion of the relationship between providers and end-users.

AT was also studied in relation to individual psychological facets, and the difficulties inherent in the process of prescription, acceptance and use of AT were highlighted. At the same time, stress was placed on how an open, tolerant and well-informed community (including the community of professionals) could foster the acceptance and use of the AT.

A large part of the GIHP course was devoted to the socio-economic dimension, involving law, costs and procedures for AT acceptance. This made it possible to discuss the economic dimensions of AT, to exchange views on the inadequacies of current systems, and to understand the differences between the existing system (thinking about the best way to use it) and what would be the most appropriate system. One of the objectives of this approach was to help trainees stick to reality and be constructive.

By associating this basic knowledge with the use of available tools, trainers and trainees built a dynamic research process. It was particularly important to identify a procedure grounded on individual, needs-based initiative that would lead to satisfactory and confident use of AT. This raised fundamental questions like:

- What are the different steps in this procedure and what are their characteristics?
- What tools can ensure a good result?

The process involved human aspects of problem solving: starting with a precise need; assessing the situation; searching for information; meeting somebody and establishing a relationship; carrying out tests and investigations; and making decisions. An inventory of existing resources was drawn up, featuring: professional know-how; user organisations; and information sources such as magazines, articles, Information & Communication Technology (ICT) and exhibitions). In addition, practice was gained in the use of information sources, especially the Internet, and through some small role-plays and simulation of real cases.

The teaching aids and educational material used during the course included whiteboard, overhead projector, videos, publications and handouts. Various methods were used to transmit knowledge on AT to disabled persons. Stress was also placed on creating a dynamic and constructive exchange so that positive effects would be produced in daily life after training. The contributions of some disabled persons who are both professionals and daily AT users contributed to get across this message. Group work appeared to be more suitable and useful than the individual work adopted in the previous training initiatives. Consequently, this course was not designed just for solving the individual's problems, but rather to help participants situate themselves in a "meta" position in relation to AT and its daily support of autonomy. Personal testimony made a major contribution in this direction.

At the end of the course, participants were asked for their views about the course, the quality of teaching, and their personal contribution. It was interesting to see how this experience influenced individual and collective

perspectives. Further evaluation was planned in the form of another meeting held six months after the course ended.

ANNEX

Other public documents produced within the EUSTAT Study

Go for it! A User Manual on Assistive Technology

Available in English, Danish, Dutch, French, Italian and Portuguese.

This book is a basic educational package to be used directly by end-users of Assistive Technology or as a textbook for educational initiatives. It is written in plain, easy-to-understand language. It is divided into eight chapters that progressively lead the reader from a basic understanding of Assistive Technology (AT), how to choose it and how to seek advice to a deeper insight into the implications of AT at both individual and social level. In this way, the manual is helpful to novice and expert users alike. It can also assist readers in their personal growth towards more in-depth knowledge, which can be used not only for improving personal autonomy, but also for helping others by acting as peer counsellors.

After some introductory considerations, three chapters (*Be prepared for the process of getting AT; Choosing and getting AT; and The service delivery system*) offer methods for analysing one's own daily life activities in order to identify areas where AT can be useful; they also highlight aspects the user should be aware of when seeking external advice or accessing a public service delivery system. Concrete examples are offered by the chapter *People and AT: some stories of success*, that illustrate how AT could solve problems in real life for five persons with disabilities. A comprehensive description follows (chapter *Knowing AT*) of existing AT products and services, together with many practical examples and pictures. Chapter *Information resources and personal advice on AT* describes information tools, information sites, and other possible sources of advice that can be sought when choosing AT. In the chapter *For you who want to know more* the focus shifts from an individual perspective to a social one, so as to understand the impact of AT on society, to communicate better with professionals and other stakeholders, and to be ready to keep pace with future developments. The final chapter (*The next challenge: from user to peer counsellor*) offers ideas, methods and tips for those expert users who wish to make their experience available to novice users.

Critical factors involved in end-users' education in relation to Assistive Technology

Available in English

The term *critical factors* refers to aspects that deserve careful consideration when approaching the transfer of knowledge to end-users so as to achieve empowerment or prepare the ground for it. This report identifies, describes and analyses such critical factors, and gives rise to a conceptual framework for the development of educational initiatives. The main concern of this study is the process that leads from expression of the need to the choice of AT. *Chapter 1* introduces the philosophy of the EUSTAT project, clarifies some basic concepts and describes the contents and methodology

adopted. *Chapter Two* deals with the relationship between AT and end-users, and describes knowledge transfer as a key factor for bridging the gap. In *Chapter Three*, a systematic classification of critical factors is given. This is based on a model of the educational process that embraces the sequence of logical steps through which a body of knowledge takes shape in the mind of someone organising an educational initiative, is delivered to end-users, and gradually brings about their empowerment. *Chapter Four* lists supporting literature, and also includes a comprehensive review of selected handbooks on AT deemed useful for end-user education.

Programs in Assistive Technology education for End-Users in Europe.

Available in English

This book is the result of a wide international survey aimed at identifying, classifying and describing existing examples of educational programs in AT for persons with disabilities and the elderly. The survey was carried out at international level mainly by means of questionnaires. On-site visits were also made in order to collect further information and insight about a number of outstanding programs that adopt different approaches.

This book is divided into two parts. *Part One* is devoted to analysis of existing educational programs in AT. It contains a detailed section-by-section discussion of the data obtained from the survey, description of seven programs visited on-site, and 87 programs analysed on the basis of the questionnaires. *Part Two* presents the obtained data in both numerical and graphical form.

For more information visit the EUSTAT web-site at

www.siva.it/research/eustat

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