Module 7

TRAINER GUIDE

Assistive Technology

Editor
Miguel Santos

Authors
Rui Oliva Teles
Miguel Santos

PORTUGAL

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Lifelong Learning Programme

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Training Module for Teachers and Parents "Assistive Technology"

This training module is produced in the scope of CP-PACK project and in accordance with the Need Analysis Report, derived from the results of the focus group interviews and questionnaires among parents and teachers of children with cerebral palsy.

The module is supposed to be very pragmatic and at the same time very eclectic, providing practical and instrumental competences. Collaborative work is essential to exchange ideas and hints in the many areas where AT is important.

Through this training module there will be a discussion about the use of technology and how it helps to overcome functional limitations of children with cerebral palsy in social contexts. Also, information and teaching techniques regarding the use of specific technology for specific functional limitations in CP will be provided.

Subject of training module	Assistive Technology
Target group(s)	Parents and Teachers of children with CP 3-18 years of age
Goal(s)	Parents and teachers of children with CP will be able to identify and search for new devices that promote accessibility and facilitate communication, learning, mobility and daily life activities. They will know how to apply new technological solutions and how to find the adequate assessment and follow-up services;
Learning Outcome(s)	At the end of the training course, trainees will have demonstrated acquisition of the knowledge base and skills necessary to: • Identify assistive technology that maximizes the potential of children with CP and facilitates inclusion. • Demonstrate skills to facilitate the process of the selection of appropriate technology for children with CP • Describe and demonstrate how assistive technology facilitates language skills, remedial skills, functional skills, and life skills. • Describe and demonstrate knowledge of how assistive technology provides access to learning for children with CP

Contents (General and/or Detailed)	**1.** Fundamentals of Assistive Technology Assistive Technology and CP Definitions of AT Technological Literacy Classification Universal Design **2.** Human Components Disability issues Quality of Life, autonomy and empowerment Assessment and Selection Process **3.** Technical Components AT for Communication AT for Mobility AT for Manipulation AT for Orientation **4.** Socio-economic Components Choice factors Service delivery Information resources
Time Needed	6 hours (2 hour contact sessions)
Methodology	Demonstration activities Use of blended learning (LMS Moodle) as a continuous support Collaborative tools (Forum, glossaries and Wiki) Case Study activities
Assessment and evaluation plan (of trainers/ of trainees / examination question databank)	Evaluation through questionnaires, checklists and self assessment at the end of the training course. Participation in place and online activities Case Study
Supporting training material needed	• Handout of papers and power point presentations, prepared scenarios for the case studies and problem based learning, website links, references • State of the Art bibliography in the field of AT • Personal documentation about specific devices and software • Guidelines from EUROPEAN COMMISSION DG XIII - Telematics Applications - Assistive Technology Education for End-Users • Guidelines for Trainer - project DE 3402 / Deliverable D06.3

Educational Environment	A meeting room/conference room during the lectures / presentations, as well as physical interiors appropriate for group work, case studies, workshops, drama, etc. Also, a projector connected to a pc, a screen, a flip chart and internet access. Where needed there must be extra pcs with internet access, video and audiovisual equipment, board and/or special equipment/assistive devices. There is also a virtual environment for collaborative activities and supplementary information, including audio-visual learning objects.
Qualities of Trainer(s)	Trainers must have technological literacy and a broad knowledge about the state of art of assistive technology in international market.

Chapter 1

Fundamentals of Assistive Technology

Duration: 1 hour

Learning Outcomes

Participants are expected to get general knowledge about Technical Aids/Assistive Technology and its different levels of classification and awareness of the role of AT in several contexts, mainly in what concerns cerebral palsy. After the training, they will also relate AT to the Universal Design principles, especially in what concerns educational environments (UDL).

Methodology

This is a presentation module. Participants are invited to fill in a small questionnaire and brainstorm about the role of technologies in their lives and in what concerns their child/student`s daily activities. Several definitions of AT will be presented as well as classifications and a list of international organizations in this field of knowledge.

Examples of low, medium and high technology will be shown, trough contextualized pictures and photos in CP environments. Trainees are also introduced to Universal Design and its relationship with Assistive Technology.

Module Presentation (Power Point)

Topics

Assistive Technology and CP

Activity: Brainstorming. Thinking of some situations in everyday life in which AT plays an important role in quality of life of CP children.

Definition(s) of AT

Activity: Comparing the different definitions presented and try to find examples of what is and isn`t assistive technology.

Technological Literacy

Activity: Make a list of low-tec devices and more sophisticated equipment known for assistive purposes and in different contexts.

Classification

Activity: Explore and compare 3 classification tables (ISO9999, MPT, Heart) and try to identify the most common devices used in cerebral palsy.

Universal Design

Activity: Exemplify situations involving the seven principles of universal design and get example situations for each one of them.

Supplementary Training Materials

- Classification and Terminology of Assistive Products: http://cirrie.buffalo.edu/encyclopedia/en/article/265/
- The Seven Principles of Universal Design: http://www.udll.com/media-room/articles/the-seven-principles-of-universal-design/
- Center for Universal Design: http://www.ncsu.edu/project/design-projects/udi/
- Universal Design for Learning: http://www.cast.org/
- National Centre on Universal Design for Learning: http://www.udlcenter.org/
- Designing Everyone In: http://www.data.org.uk/index.php?Itemid=320&id=246&option=com_content&task=view
- Inclusive Design Research Center: http://idrc.ocad.ca/index.php/resources
- Unleashing the Power of INNOVATION for Assistive Technology - National Centre for Technology Innovation, December 11th, 2009

Fundamentals of AT.pptx

Universal Design.pptx

Feedback on the Chapter

Small questionnaire with evaluation and improvement suggestions. Questionnaires will be available on the platform (Moodle).

Chapter 2

Human Components

Duration: 1 hour

Learning Outcomes

Participants are supposed to get a wide view on topics spanning the field of disability, impairment and disadvantage, under social models and perspective of International Classification of Functionality and World Health Organization. They will also get an informed idea of an assessment process (functional) and of the several steps of an AT selection process.

Methodology

This is a reflexive session in which, and by means of demonstrative methods and collaborative discussions, we will analyse several items related to the impact of disablement in the human being and how assistive technology can work to fill the gap between the individual and the environment, facilitating autonomy and empowerment.

The group will have the opportunity to discuss the problem of AT acceptance/refusal and notions of accommodation and adaptation.

Topics

Disability issues

Activity: Discuss (forum) the notions of impairment, disability and handicap and clarify the role of AT

Quality of Life, autonomy and empowerment

Activity: Think about the right attitude to take when choosing a wheelchair for a teenager with CP

Contexts and Environmental variables

Activity: Make a reflexion on the following statements:

Assistive technology products and services are underused

Part of the non-take up of assistive technology is caused by lack of knowledge

In the process of acquiring assistive technology, caring professionals are significant gatekeepers

Assessment and Selection Process

Activity: Enumerate the most significant factors that lead to success or failure of AT

Supplementary Training Materials

- International Classification of Functioning, Disability and Health (ICF): http://www.who.int/classifications/icf/en/
- Classification and terminology of assistive products: http://cirrie.buffalo.edu/encyclopedia/en/article/265/
- Special Needs Technology Assessment Resource Support Team (START): http://www.nsnet.org/start/
- SETT Framework: http://www2.edc.org/ncip/workshops/sett/SETT_Framework.html

Human Factors.pptx

Feedback on the Chapter

Small questionnaire with evaluation and improvement suggestions. Questionnaires will be available on the platform (Moodle).

Chapter 3

Technical Components

Duration: 1 hour

Learning Outcomes

In the end of this session, participants are expected know how to identify and evaluate the potential of several types of assistive equipment and show some proficiency in incorporating them in a functional selection process for a CP child.

In the area of communication they will have contact with AAC materials and learn several software adaptation strategies for usability and accessibility to the PC as well as free hardware and software solutions for physical accessibility to ICT and to help in reading and writing processes.

In the area of mobility it is expected that they recognize the most significant equipment for CP children and demonstrate proficiency in selecting the most adequate solution for different environments considering also the importance of architectural accessibility and some technical solutions available, as well as the main modalities and characteristics of adapted sports suitable for CP.

Participants will also recognize practical solutions for daily activity with CP children, available in the market, in areas like feeding, dressing, housekeeping, and domotic solutions and environmental control strategies. It is also expected that they can recognize the most suitable educational and recreational solutions for their children/ pupils

Methodology

The session is entirely dedicated to equipment and devices in the area of assistive technology. Whenever possible it is expected that participants have direct contact with real AT devices, but most of them will be shown in pictures and by internet search.

It is divided into 4 sub modules (following HEART model): Communication, Mobility, Manipulation and Orientation. All efforts should be made to present the items in a functional approach and related to the real needs of CP children.

3.1 Communication

In the area of Communication, participants will have the opportunity to compare several augmentative and alternative communication systems in what concerns the various contexts of application. The module will also focus on the many kinds of equipment for physical and virtual accessibility, as well as different strategies to adapt the operative systems to motor, sensorial or cognitive impairments.

Activities:

- Discuss main communication needs in CP (Forum)
- Compare The same word/symbol in SPC. PECS and BLISS
- Practice accessing the PC without hands and with the help of a chinese stick
- Build a low-tec help for writing (pen holding)

3.2 Mobility

In this sub-module, participants are shown several kinds of mobility devices, mechanical and electrical transportation as well as vehicle adaptations. Different common architectural barriers will be identified and trainees will be invited to engage themselves in possible solutions using AT. Sports and recreational activities should also be addressed.

Activities:

- Discuss several solutions to overcome the difficulty of climbing stairs with a wheelchair (forum)
- Enumerate the main architectural barriers in your home town.
- Organize a Boccia game for a Team / for Players classified as BC 1 and BC 2

3.3 Manipulation

Parents and teachers will have here the chance to identify practical solutions for daily activities with CP children, available in the market, in areas like feeding, dressing, housekeeping, etc. Students must have contact with domotic solutions and environmental control strategies. It is also expected that they can recognize the most suitable recreational solutions for their children/pupils

Activities:

Group will “build” the “perfect house (environment)” with the help of demotic systems

3.4 Orientation

In this session participants will identify some orientation and mobility systems, as well as security solutions based on geo-referencing. Students will also review a list of (mostly free) software for cognitive orientation and educational purposes. Following the same structure of the other technical factors, participants will have contact with orientation solutions based on GPS systems, and will evaluate and compare several types of software useful to handle cognitive impairments.

Activities:

Identify educational software that can be used for cognitive deveopment and write down its main characteristicas

Supplementary Training Materials

Communication

http://www.makaton.fr/

http://www.mayer-johnson.com/

http://www.catedu.es/arasaac/

http://www.words-plus.com/website/products/hand/mmaccs.htm

http://www.pecs.org.uk/general/what.htm

http://www.proloquo2go.com/

http://www.mayer-johnson.co.uk/downloads/trials/details/id/447/?___SID=U

http://www.sensorysoftware.com/

Prices, Keyboards, Tobii:, Brain Control, Muscle-Computer, PC Accessibility , Boardmakershare, Dasher, Camera Mouse, AbilityNet, Accessibility in Apple Products, Accessibility in Microsoft Products, Assistive Technology Eye Tracking Mouse, Open Source Special Access to PC Software

TCCommunication.pptx (Trainer`s Resources

Mobility

Assistive Technology Devices for Kids | eHow.co.uk -

http://www.ehow.co.uk/info_8315500_assistive-technology-devices-kids.html#ixzz1jpSPMteT

Neatech Chair Models: http://www.neatech.it/index.php

Apple: Empowering Disabled Apple Users: http://atmac.org/

Home Solutions: http://www.escadafacil.pt/index.htm

Handy - Occasion: http://mashable.com/2011/10/05/tech-disabled/

iBot: http://www.youtube.com/watch?v=xK5uAeEV7tI

Office Organix: http://www.officeorganix.com/default.htm

TCMobility.pptx (Trainer`s Resources)

Manipulation

Ambient Assisted Living: http://www.aalforum.eu/

Neater Eater: http://www.youtube.com/watch?v=RVjU3jfKHAc

TCManipulation.pptx (Trainer`s Resources)

Orientation

Trekker System: http://www.youtube.com/watch?v=gsTZqKGtkyI

Animation: http://goanimate.com/

Mindmapping: http://www.mindmapping.com/

Podcasting: http://vocaroo.com/

Virtual reality: http://www.vrlogic.com/html/head_mounted_displays.html

Wiki: http://www.wikispaces.com/

Zaid Learning: http://zaidlearn.blogspot.com/2008/04/free-learning-tool-for-every-learning.html

TCOrientation.pptx (Trainer`s Resources)

Chapter 4

Socio-Economic Factors

Duration: 1 hour

Learning Outcomes

At the end of the session, participants will be able to search for information related to AT funding in their own country and demonstrate skills in defining their plan of acquisition, based on the information provided by national or international databases.

They will also be able to evaluate the state of art of assistive technology, market trends and evolution at a European level.

Methodology

This module addresses the need to get information about TA in different countries and for different social and economic contexts. It is supposed to provide valuable hints about who, where, how and when to get institutional or state support, after a careful l and rational choice process among different commercial providers.

Topics

- Choice Factors
- Service Delivery
- Information Resources

Activity:

Search for your national database of technical aids/assistive technology

Organize your own dossier for prescription and financing of an AT package for your child/pupil in your country

Supplementary Training Materials

http://www.eastin.eu/pt-PT/searches/products/index

http://www.vlibank.be/

http://www.handicat.com/

http://www.dlf-data.org.uk/

http://www.hmi-basen.dk/r0x.asp?ldbid=1

http://www.rehadat.de/eastin.htm

http://portale.siva.it/

Resna: http://resna.org/

SNOW: http://snow.idrc.ocad.ca/

WATI: http://www.wati.org/

Unesco: http://www.unesco.org/new/en/education/themes/strengthening-education-systems/inclusive-education/

EASTIN: http://www.eastin.eu/en-GB/searches/products/index

SEconomical.pptx (Trainer`s Resources)

Feedback on the Chapter

Small questionnaire with evaluation and improvement suggestions. Questionnaires will be available on the platform (Moodle).

References

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- Equal Opportunities for Persons with Disabilities: A European Action Plan - EUROPEAN COMMISSION - Brussels, 30.10.2003 - COM (2003) 650 final - Communication from the Commission, the European Parliament, the European Economic and Social Committee and the Committee of the Regions.
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- COOK, A. , M. & HUSSEY, S. M. (2001). Assistive Technologies: Principles And Practice . ISBN: 0323006434. Mosby Inc - an academically-oriented book targeted primarily at undergraduate and graduate university students. It aims to "provide a framework for assistive technology which is both broad in scope and specific in content."
- Hutinger, P.L., & Others. State of Practice: How Assistive Technologies Are Used in Educational Programs of Children With Multiple Disabilities.- a Final Report for the Project: Effective Use of Technology to Meet Educational Goals of Children with Disabilities. Washington, D.C.: Office of Special Education and Rehabilitation Services (1994).
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- Church & Glennen - The handbook of assistive technology, focuses on the "practical application" of assistive technology and is intended to be used as a hand book and resource guide for professionals in their daily work.(1992),
- Fundamentals of assistive technology, RESNA (1999), is a resource manual designed to be used in conjunction with the RESNA Fundamentals in Assistive Technology Course. It contains twelve modules written by experts in the field along with other useful course materials.
- Azevedo L, Féria H, Nunes da Ponte M, Wänn J-E, Zato Recellado J (1994). European Curricula in Rehabilitation Technology Training. Report E.3.2, European Commission Heart Line E Rehabilitation Technology Training project.
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- http://www.eaccessibility.org/
- http://www.ataccess.org/
- http://atnetworkblog.blogspot.com/2010/04/so-what-is-atacp.html
- http://www.cited.org/index.aspx
- http://www.dinf.ne.jp/doc/english/index_e.html