

Assistive technologies and models for evaluation

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Abstract

The process of matching assistive technology to person (Scherer & Craddock, 2002) requires a well designed and researched sequential set of assessments that are administered by professionals with different areas of expertise in specialized centers for technical aids. The team of experts acts as a mediator between the person with a disability and the assistive technology. This summarize of the presentation performed in the panel "Sciences For Inclusion" rests on the following main features: the scientific power of the Assistive Technology Assessment (ATA) process, the new professional profile within a multidisciplinary team working in a center for technical aid, and the importance the assessing personal and environmental factors within the ATA process. The ATA model outlines an ideal process which provides reference guidelines for both public and private centers for technical aid provision, allowing them to compare, evaluate and improve their own matching model.

1. Introduction

The assistive technology assessment process is not a result of a mere academic mental exercise, but provides examples of applications of it. The theoretical view of the ATA process emerges from experimental research applied to rehabilitation and assistive technologies; the international ideal model of assistive technology assessment process is already applied in centers for technical aid. Thanks to scientific and clinical collaboration, economic and operational support of the center for Technical Aid of Rome, Leonarda Vaccari Institute – which, in turn, is part of the Italian Network of centers Advice on Computer and Electronic Aids and cooperates with the Institute for Matching Person & technology. It was possible to define the assessment model proposed in the present workshop since the model is already operative in the center of Rome. This center offers a non-commercial advisory service and support on assistive technologies and computers for communication, learning, and autonomy. The service is free of charge for users who access it through the Italian National Health Service. Several scientific projects granted by the Institute are in progress at the center to verify not only the advantages of a systematic application of the Matching Person & Technology tools in the assessment process, but also the application of the ATA process model.

2. The new International ATA process

Modelling an ideal model of effective Assistive Technology Assessment process of a center for AT provision is difficult if one takes into account the extraordinary variety of systems of

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regional and national health and social care, both public and private in Western countries. Just to synthesize, in a schematic way, some of these differences, we have divided in two models the main national health systems in the Western countries: the Public and the Private health system. According to each national health system model, the recipient of the health system can be characterized as an user of non-commercial advisory service and support on AT, or a client of commercial provision of AT, or a patient of a medical center for technical aid. Finally, according to each national health system model, the AT will be free of charge in a public health system or by paying in a private health system. The elements of each model are often mixed rather than juxtaposed. For example, the recipient of an AT in medical center for AT could be a patient both in Private and in Public Health Systems. The ATA model outlines an ideal process which provides reference guidelines for both public and private centers for technical aid provision, allowing them to compare, evaluate and improve their own matching model. The ATA Process borrows a user-driven working methodology by the Matching Person and Technology Model of Marcia Scherer (Scherer, 1998). Furthermore, the ATA ideal model embraces the ICF biopsychosocial model (WHO, 2001) aiming at the best combination of AT to promote customer's personal well-being.

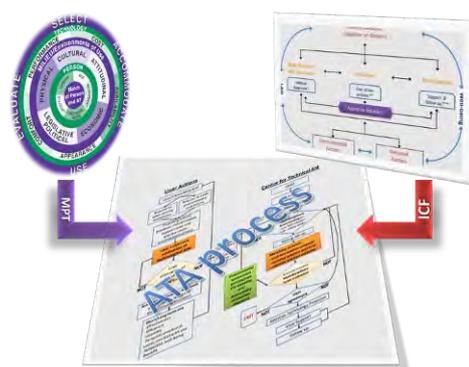


Figure 1 - The background of the ATA ideal model (Federici, 2012 – RESNA Conference, in press)

The ATA process can be read both from the perspective of the user or from the perspective of the center for Technical Aid. Since the ATA is a user-driven process any activity of the staff must to find a correspondence to an user action and vice-versa.

The users' actions of the ATA process can be grouped in three phases.

- Phase 1: the user seeks a solution for one or more own activity limitations or participation restrictions and seeks assistance from a center.
- Phase 2: the user checks the solution tries and checks one or more technological aids provided by the professionals in an suitable evaluation setting (Center, house, hospital, school, rehabilitation center, etc.)

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- Phase 3: the user adopts the solution after obtaining the technological aid(s) from the public health system or public/private insurance, receives training for the daily use of the AT and follow-up.

The actions of the center can be grouped in four phases.

- Phase 1: when the user provides data to the center, data are collected and the case is opened and transmitted to the multidisciplinary team.
- Phase 2: the multidisciplinary team evaluates the data and user's request and arranges a suitable setting for the matching assessment.
- Phase 3: the multidisciplinary team, along with the user, assesses the assistive solution proposed, tries the solution and gathers outcome data. The multidisciplinary team evaluates the outcome of the matching assessment, then proposes the assistive solution to the user. When the assistive solution proposed requires an environmental evaluation, the team initiates the Environmental Assessment Process that we will deepen in the segment 3 of this workshop.
- Phase 4: when the technological aid is delivered to the user a follow-up and on-going user support is activated and the assistive solution is verified in the daily life context of the user.

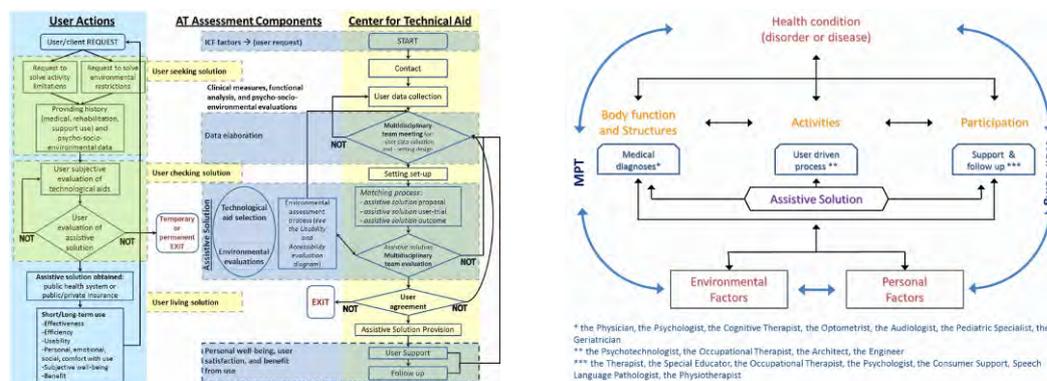


Figure 2 - The ATA process flow chart and the ATA process under the lens of the ICF biopsychosocial model (Federici, Scherer - 2012)

The ATA process is embedded in the ICF model and the process describes the complexity of the biopsychosocial model. The ATA process means to guide a multidisciplinary team to provide not just devices but much more: assistive solutions; in order to empower the user and improve the well-being. The individual functioning and disability of the user are taken into account by the multidisciplinary team that evaluates health conditions of the user. The matching process then aims to support activity limitations and enhance individual functioning. Finally, overcoming a disablement may involve something more than just a device, it often

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requires a mix of mainstream and assistive technologies whose matching is different from one individual and another, and from one context to another. Therefore, the multidisciplinary team has to take in a serious account the participation restrictions. This model, therefore, intends to express, in an idealized and essential form, an assessment process carried out in a center for assistive technology provision, since it provides such tools for assessment and the professional skill set that defined “psychotechnological”. However, one of the unsolved problems is the difficulty, already met several times, of defining the features of a center for technical aid. The modelling process of a center for technical aid is difficult if one takes into account the extraordinary variety of systems of regional and national health and social care, both public and private (Müller, 2012). Because of the difficulty of finding an adequate and effective synthesis of the various models proposed by specific national systems of public health and welfare, the scientific community is facing an assistive technology system delivery system which will be increasingly individualized, due to the social and cultural diversity of users and the necessary adjustment of the center’s functioning to the local health system. However, it should be noted that this particularization of the model is to clash with some trends that are aimed at promoting, instead, globalization (for example, this occurs both in social and health policies of the European Community and in those of the World Health Organization). The internationalization of a model, indeed, is advantageous since it often emerges as a synthesis of experiences of regional models. Moreover, it offers the opportunity, by sharing a theoretical model and evaluation criteria, to share data essential to scientific research, planning, and evaluation of national and international policies and the verification of the quality of public services.

3. Assessing in a center for technical aid

For nearly two decades the scientific literature has given increasing attention to the issue of assistive technologies abandonment (Philips and Zhao 1993; Scherer 1998; Kittel et al. 2002; Scherer et al. 2004, 2005; Dijcks et al. 2006; Federici and Borsci, 2011). The nature of the phenomenon is complex and this is one of the reasons why the abandonment has been frequently called in different ways: neglect, discard, discontinuity. Each of these terms reflects different ideas about the causes and the modalities of non-use of assistive technologies. However, a significant part of the literature on this topic identifies the lack of consideration given to personal factors as a major cause of abandonment. The early study of Philips and Zhao in 1993 found that three out of four factors significantly related to abandonment – lack of consideration of user opinion in selection, easy device procurement and change in user needs or priorities – were significantly related to personal factors. In the last 7 years, a growing number of scholars have turned their focus on the role of personal factors in the relationship between user and assistive technology. Despite of this, the most

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important international classification of functioning and disability, the ICF (WHO, 2001), grounded on the biopsychosocial model of disability, has never classified the personal factors. The ICF imputes the lack of codes for the personal factors to “the large social and cultural variance associated with them.” (WHO, 2001, p. 9). A short term business approach to rehabilitation has led to neglect the role of personal factors due to the ignorance on their relevance for a successful outcome and for reducing economic waste. By following the biopsychosocial perspective, the new professional figure, the psychotechnologist, investigates both barriers and facilitators within the interaction system to obtain the best integration among three different systems: the Person, the Technology, and the Environmental factors. This intra-systemic methodology aims to provide a certain level of autonomy by taking into account the person’s peculiarities and needs, and, at the same time, matching them to the related contextual factors and technological features and functions. The psychotechnologist identifies the real user’s needs by seeking, in cooperation with the multidisciplinary team, the technologies that more fit with the user-system and his or her socio-environmental context.

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