Models on technology use in the group of persons with disabilities: a literature review

Dr. Sara Nijs
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Assistive technology

A variety of devices (and services related to their use) aimed at helping persons with disabilities and special educational/rehabilitation needs to function better within their daily context and achieve a higher quality of life.

Lancioni, Sigafos, O'Reilly, & Singh, 2012, p.1
Use or not use

- Price
- Knowledge
- Training
- Flexibility
- Intuitive
- Universal design
- Assessment
- Planning
- …

Models

- Help to understand decisions
- Help to systematically select and implement
Models of technology use in the group of persons with disabilities: a literature review

• Databases
  • Social science citation index
  • Eric
  • CINAHL
  • PubMed

• Search terms
  model OR models OR instrument OR instruments
  OR selection OR assessment OR framework
  AND
  technology OR technologies OR ICT OR information
  communication technology OR computer OR device OR devices
  AND
  disability OR disabilities OR impairment
  OR impairments OR disorder OR disorders.

Models of technology use in the group of persons with disabilities: a literature review

• Inclusion criteria
  • 2000-2016
  • English
  • Journal articles in peer reviewed journals
  • Studies investigating the target group of persons with disabilities across the life span
  • Articles focusing on models and frameworks for technology use

• Results
  • 6630 articles found
  • 5991 excluded based on title
  • 585 excluded based on abstract
  • 30 excluded based on full text
  • 24 included
Analyzing and synthesizing

- AT specific
- Based or linked to another model
- Aim of the model
- Target population
- Stages/components
- Validation of the model
- Assessment method

57 models

- Four outcome measure levels of accommodates of computers and AT
- Framework for prescribing assistive technology
- Framework for service-quality
- Georgia Project For Assistive Technology/
- Horizontal European Activities in Rehabilitation Technology
- IMPACT 2
- Lifespace Access Profile
- Model of AT user's career
- Model of human-performance technology
- Model of providing assistive technologies in special education schools
- Model of Technology Integration Process
- Occupation-performance model
- Participant Assessment Framework
- Perceived attributes Theory
- SIVA counselling model
- Social cognition model
- Stages model
- Team model for decreasing barriers in using AT in children with disabilities
- Tech points
- Technology Team Assessment Process model
- Technology acceptance Model
- The Framework For Modeling the Outcomes of ATD
- The Model of Human Occupation
- The occupational Therapy Intervention Process Model
- Three components model for supporting and involving families in AT decision-making
- Unifying Functional Model
- Unmet Theory of Acceptance and Use of Technology

Matching Person and Technology model
- The Human Activity Assistive Technology model
- The International Classification of Functioning, Disability and Health
- Student, Environment, task and technology
- Theoretical career path of first-time AT device users and factors influencing each stage
- Education TECH points
- The model of Human Performance
- Assistive Technology Service Method
- AT CoPlanner
- CAT model of AT assessment
- CONCERTUS
- Matching Assistive Technology and Child
- Quality Indicators for AT Consortium
- The Canadian Model of Occupational Performance
- The Framework For Modeling the Selection of ATD
- The Social-Cognition Model
- The social-cognitive Model of Assistive Device Use in Older Persons
- Wisconsin Assistive Technology Initiative
- Client focused Social and Participatory Service Delivery Model in Assistive Technology
- AT model
- Access technology delivery protocol
- Adaptation of Baker's ergonomic equation
- Assistive Technology Service Classification
- AT consideration-Quick Wheel
- Barnsley Provision Framework
- Chambers's Model
- A 4-step process for making adaptation decisions to promote children's participation in activities and routines
- A home-centered approach for the AT use in the home environment
- A process of cultural reciprocity and meaningful AT information gathering
- Four critical stages in the provision of AT
### 57 models

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Sara Nijs  
SIRG PIMD Round table 2017  
Fribourg
57 models

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The Human Activity Assistive Technology model 8
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Student, Environment, task and technology 5
Theoretical career path of first-time AT device users and factors influencing each stage 4
Education TECH points 3
The model of Human Performance 3
Example: MPT model (Scherer, 1998)

- **AT specific**: yes
- **Based or linked to another model**: variations were developed
- **Aim of the model**: better match users and devices
- **Target population**: persons with disabilities
- **Stages/components**: (1) environment (2) individual characteristics and preferences of the person with a disability (3) technology’s functions an features
- **Validation of the model**: yes
- **Assessment method**: stepwise procedure for assessment and implementation based on various questionnaires

Model - persons with PIMD

- **Knowledge, beliefs and intentions**
  - of the person with PIMD
  - of the support staff
- **Assessment and planning**
  - Situation in which they are educated and supported
  - Possibilities of various technologies
Build a model

develop and evaluate an adapted model to increase the use of technological devices to support active engagement, interactions and participation of persons with PIMD

Build a model

**Literature review**
Overview of existing models
Persons with disabilities

**Survey study**
Attitudes of paid professionals on technology use
Persons with profound intellectual disabilities
Survey study

- input of paid professionals working with persons with profound intellectual disabilities (teachers, direct support workers, staff, policymakers, therapists, …)

- attitudes and experienced barriers related to technology use in this group

Survey Study

1. Target population & background information

2. Purpose of technology use

3. Personal attitudes and beliefs
   - Cost
   - Characteristics of the person with profound intellectual disabilities
   - Characteristics of the AT device
   - Knowledge and training with regard to AT devices
   - Domains on which AT is used
   - Characteristics of the support worker
   - Characteristics of the organization
   - Characteristics of the environment

4. Extra questions
European Survey

- Nederlands
- Deutsch
- Français
- Español
- English
- Português

European Survey

- Belgium
- The Netherlands
- France
- Germany
- Switzerland
- UK
- Spain
- Portugal
European Survey

Do you want to spread our survey in your country?
Online until 31 October

Did you spread our survey in your country?
Reminders may be send until 31 October

sara.nijs@kuleuven.be

Build a model

Literature review → Develop a model → Validation (Delphi method) → Intervention study

Survey study
SIRG Assistive Technology

- LinkedIn group: Assistive Technology Special Interest Research Group

Questions?