

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

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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.*

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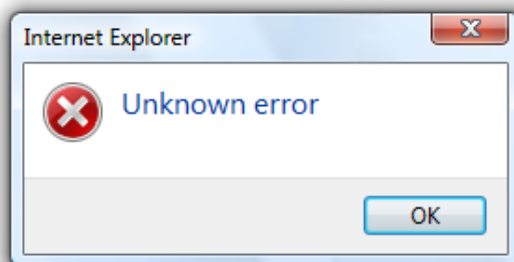
Lancioni, Sigafoos, O'Reilly, & Singh, 2012, p.1

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USING TECHNOLOGICAL DEVICES IN PERSONS WITH PIMD



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## Use or not use

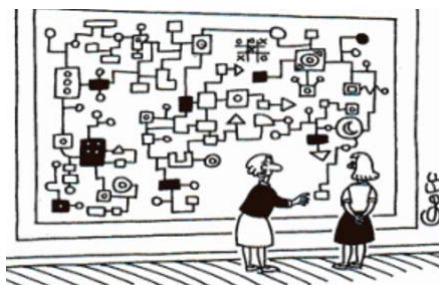
- Price
- Knowledge
- Training
- Flexibility
- Intuitive
- Universal design
- Assessment
- Planning
- ...



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## Models

- Help to understand decisions
- Help to systematically select and implement



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## 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.

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## 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

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## 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

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## 57 models

Four outcome measure levels of accomodatin of cumputers 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 counseling model
Social cognition model
Stages model
Team model for decreasing barriers in using AT in children with disabilities
Tech points
Technolgy 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 compenents model for supporting and involving families in AT decision making
Unifying Functional Model
Univied 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
CONSORTIUM
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
A3 model
Access technology delivery protocol
Adaptation of Baker's ergonomic equation
Assistive Technology Device Classification
AT consideration Quick Wheel
Barnsley Provision Framework
Chamber'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

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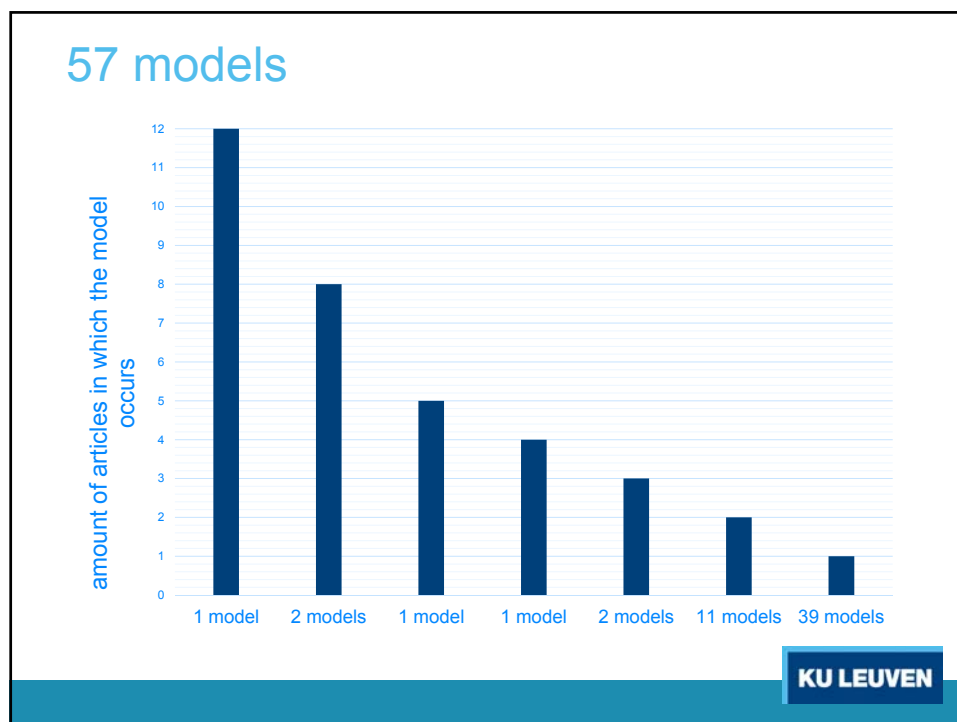
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Matching Person and Technology model	12
The Human Activity Assistive Technology model	8
The International Classification of Functioning, Disability and Health	8
Student, Environment, task and technology	5
Theoretical career path of first-time AT device users and factors influencing each stage	4
Education TECH points	3
The model of Human Performance	3

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## 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 and features
- **Validation of the model:** yes
- **Assessment method:** stepwise procedure for assessment and implementation based on various questionnaires

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## 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

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## 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



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## 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

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## 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

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## 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

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## European Survey

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

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## European Survey

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



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## 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

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## Build a model

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USING TECHNOLOGICAL DESIGN IN PERSONALITY PIMD

Literature review

Survey study

Develop a model

Validation (Delphi method)

Intervention study

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## SIRG Assistive Technology

- LinkedIn group: Assistive Technology Special Interest Research Group



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Questions?



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