Linking of the “Integration von Menschen mit Behinderungen in die Arbeitswelt” (IMBA) to the “International Classification of Functioning, Disability and Health” (ICF)

Stien Hennaert (GTB)
Saskia Decuman (NIHDI)
Dominique Van de Velde (Ugent)
Huget Désiron (KU Leuven)
BACKGROUNDS

The priority of Return To work

- Positive effects of employment on health
- Work disability → societal burden

The challenge of workable work

- The influence of external and personal factors
  - Work related
  - Non-work related
- Work demands ↔ individual capacity
  - Assess
  - Match
  - Adjust

(Heerkens et al., 2004; Waddell&Burtion, 2006; OECD, 2010; Pacolet et al, 2016; Pacolet&Wispelare, 2016; Heerkens et al., 2017; NIHDI, 2018)
Towards the assessment of work capacity

- Disability → Ability
- Functional Capacity Evaluation → needs the assessment of multiple constructs
- Need for tools/assessments to assess work capacity
  - Multidimensional
  - Efficiently
- Need for a conceptual framework and common language

(OECD, 2010; Finger et al., 2012; Reneman, 2015)
ICF in RTW: opportunities and challenges

Reference framework

- Functional Capacity Evaluation (FCE)
- Vocational Rehabilitation (core set ICF-VR)
- Social security (core set ICF-SS)

However: not specifically developed in context of RTW

- Lack of a dynamical aspect → work prognosis?
- Lack of work-related concepts in ICF → not covered or not defined

(Heerkens et al., 2004; Brage et al., 2008; Anner et al., 2012; Finger et al., 2012; Reneman, Soer & Gross, 2013; Escorpizo & Stucki, 2013; Finger et al., 2016; Heerkens et al., 2017)
IMBA in RTW: opportunities and challenges

- Developed in 1996 by IQPR
- Work-related documentation tool
- Based on profile comparison
  - Work ability profile ↔ work requirement profile
- Standardized set of defined items
  - Activity and context related
  - 70 main items
  - 108 detail items
  - 9 main characteristics
- Scoring system
  - Ordinal scale (0-5)
  - Dichotomous scale (yes/no)

(Schian et al., 1996; BMAS, 2000; Kersting & Kaiser, 2002; Adenaur, 2004; Kaiser, 2004; Mozdzanowski & Glatz, 2013)
IMBA profile comparison

Figure 9: The procedure of profile comparison. (German Ministry of Labour and Social Affairs, 2000)
Objectives

- Backgrounds
- Objectives
- Methods
- Results
- Conclusion

Primary objective
- linking IMBA-ICF
  - Concepts
  - Scoring systems

Secondary objectives
- Compare IMBA to ICF core sets: ICF-SS, ICF-VR
- Evaluate relevance of IMBA in RTW and (dis)ability
- Evaluate possible integration of IMBA and ICF
Methods

- Backgrounds
- Objectives
- Methods
- Results
- Conclusion

Process consisting of 7 steps

1. Preparation phase
   - Study ICF e-learning tool
   - IMBA training (IQPR)
   - Practical Experience (GTB)

2. Purposive sampling expert panel (N=8)

3. Initial IMBA-ICF linking by one researcher following the ICF linking rules

4. Feedback round 1 expert panel (N=8) using a semi-structured questionnaire
   - Delphi method: 70% agreement rate
     - ≥70%: initial linking approved
     - <70%: initial linking not approved, registering feedback and new proposals

PRELIMINARY RESULTS
Methods

- Backgrounds
- Objectives
- Methods
- Results
- Conclusion

5. Expert committee (N=7)
   - Nominal Group Technique: discussion of not approved items and new proposals
   - 2 independent expert panels reach consensus: item approved
   - 2 independent expert panel do not reach consensus: item not approved

6. Feedback round 2 expert panel (N=7)
   - Inconsistencies IMBA-ICF after results experts committee
   - 5 questions
   - Delphi method
     - ≥70%: adjustment approved
     - <70%: adjustment not approved

7. Expert meeting IQPR (research team IMBA) (N=2)
   - Discussion not approved items from expert committee
   - Discussion predefinitive results (translation issues German-English IMBA definitions)
   - Exchange remarks

Drop out of 1 expert in the afternoon discussion
PREDEFINITIVE RESULTS
Response rate N=4
DEFINITIVE RESULTS
Results

Linking outcome (concepts)

- **70** IMBA items $\rightarrow$ **107** concepts
- **94** concepts $\rightarrow$ **87** different ICF categories (mostly third level)
  - **41** $\rightarrow$ activities and participation (d)
  - **39** $\rightarrow$ body functions (b)
  - **7** $\rightarrow$ environmental factors (e)
- **10** concepts $\rightarrow$ ‘not defined’ in ICF
- **1** concept $\rightarrow$ partially ‘not defined’ in ICF
- **2** concepts $\rightarrow$ ‘not covered’ in ICF
## Results

<table>
<thead>
<tr>
<th>IMBA ITEM</th>
<th>NAME ICF CODE</th>
<th>ICF CODE</th>
<th>ANNOTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>All IMBA Items</td>
<td>Work and employment,(other specified and) unspecified</td>
<td>d 8 59 / /</td>
<td></td>
</tr>
<tr>
<td>1. Sitting</td>
<td>Sitting AND Maintaining a sitting position</td>
<td>d 4 10 3 /</td>
<td></td>
</tr>
<tr>
<td>2. Standing</td>
<td>Standing AND Maintaining a standing position</td>
<td>d 4 10 4 /</td>
<td></td>
</tr>
<tr>
<td>3. Kneeling/ Crouching</td>
<td>Kneeling AND Maintaining a kneeling position OR Maintaining a squatting position</td>
<td>d 4 10 2 /</td>
<td></td>
</tr>
<tr>
<td>4. Lying</td>
<td>Lying down AND Maintaining a lying position</td>
<td>d 4 10 0 /</td>
<td></td>
</tr>
<tr>
<td>5. Bent over/ Stooped</td>
<td>Maintaining a body position, other specified</td>
<td>d 4 15 8 Bent over (up to 30°)/ Stooped (over 30°)</td>
<td></td>
</tr>
<tr>
<td>6. Arms in Compulsory Position</td>
<td>Maintaining a body position, other specified</td>
<td>d 4 15 8 Arms in Compulsory Position</td>
<td></td>
</tr>
<tr>
<td>7. Walking Ascending</td>
<td>Walking AND Going up and down stairs</td>
<td>d 4 50 / /</td>
<td></td>
</tr>
<tr>
<td>8. Climbing</td>
<td>Climbing</td>
<td>d 4 55 1 Climb ladders or scaffolding</td>
<td></td>
</tr>
<tr>
<td>9. Crawling/ Sliding</td>
<td>Crawling OR Moving around, other specified</td>
<td>d 4 55 0 / Sliding</td>
<td></td>
</tr>
</tbody>
</table>

**Fragment IMBA-ICF linking table**
Results

- Backgrounds
- Objectives
- Methods
- Results
- Conclusion

Linking outcome (concepts)

IMBA MAIN CHARACTERISTICS

- Body Posture (1)
- Bodily Locomotion (2)
- Body Part Movement (3)
- Information (4)
- Complex Physical Characteristics (5)
- Key Qualifications (9)

ICF COMPONENTS

- Exclusively ‘activities and participation’
- ‘activities and participation’ AND/OR ‘body functions’
- ‘orderliness’ and ‘punctuality’
- Not defined
- Environmental factors
- Not covered
- Not defined
- Occupational Safety (7)
- Environmental Influences (6)
- Work organization (8)
Results

- IMBA documents information about?
  - Transformed to **first level** of ICF

  - **BODY FUNCTIONS**
    - Mental functions
    - Sensory functions and pain
    - Neuromusculoskeletal and movement-related functions
  
  - **ACTIVITIES AND PARTICIPATION**
    - Learning and applying knowledge
    - Mobility
    - General tasks and demands
    - Communication
    - Interpersonal interactions and relationships
  
  - **ENVIRONMENTAL FACTORS**
    - Natural environment and human made changes to environment’
Comparison of IMBA to ICF core sets

- ICF-SS → covered by IMBA to great extend
- ICF-VR (brief) → covered by IMBA to great extend
  - ICF-VR(brief) = more extensive in environmental factors
- ICF-VR (comprehensive) → great overlap
  - ICF-VR (comprehensive) = more extensive in environmental factors and activities and participation
Results

Linking outcome (scoring systems)

- Theoretical frameworks: IMBA ≠ ICF
- IMBA scale: resource-oriented/abilities
- ICF scale: impairments/difficulties

→ Explorative IMBA-ICF conversion
→ Proposal based on expert opinion
→ Can be used in practical setting (for now)
## Results

### IMBA-ICF ordinal scale

<table>
<thead>
<tr>
<th>IMBA PROFILE VALUE</th>
<th>ICF QUALIFIER</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 (no ability/requirement)</td>
<td>4 (complete difficulty/impairment)</td>
</tr>
<tr>
<td>1 (very low ability/requirement)</td>
<td>3 (Severe difficulty/impairment)</td>
</tr>
<tr>
<td>2 (low ability/requirement)</td>
<td>2 (Moderate difficulty/impairment)</td>
</tr>
<tr>
<td>3 (moderate ability/requirement)</td>
<td>1 (Mild difficulty/impairment) (p 25-p50)</td>
</tr>
<tr>
<td></td>
<td>0 (No difficulty/impairment) (p50-p75)</td>
</tr>
<tr>
<td>4 (high ability/requirement)</td>
<td>0 (No difficulty/impairment)</td>
</tr>
<tr>
<td>5 (very high ability/requirement)</td>
<td>0 (No difficulty/impairment)</td>
</tr>
</tbody>
</table>

**Main characteristics**: Body Posture, Bodily Locomotion, Body Part Movement, Information, Key Qualifications
## Results

#### IMBA-ICF dichotomous scale

<table>
<thead>
<tr>
<th>IMBA-ICF LINKING DICHOTOMOUS SCALE</th>
<th>ICF QUALIFIER</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main characteristic</strong></td>
<td><strong>environmental Influences</strong></td>
</tr>
<tr>
<td><strong>IMBA PROFILE COMPARISON</strong></td>
<td>0  (no barrier)</td>
</tr>
<tr>
<td>Requirement YES</td>
<td>+0 (no facilitator)</td>
</tr>
<tr>
<td>Abilities YES</td>
<td>+1 (mild facilitator)</td>
</tr>
<tr>
<td></td>
<td>+2 (moderate facilitator)</td>
</tr>
<tr>
<td>Requirement YES</td>
<td>+3 (substantial facilitator)</td>
</tr>
<tr>
<td>Abilities NO</td>
<td>+4 (complete facilitator)</td>
</tr>
<tr>
<td>Requirement NO</td>
<td>1  (mild barrier)</td>
</tr>
<tr>
<td>Abilities NO</td>
<td>2  (moderate barrier)</td>
</tr>
<tr>
<td></td>
<td>3  (severe barrier)</td>
</tr>
<tr>
<td>Requirement NO</td>
<td>4  (complete barrier)</td>
</tr>
<tr>
<td>Abilities YES</td>
<td>0  (no barrier)</td>
</tr>
<tr>
<td></td>
<td>+0 (no facilitator)</td>
</tr>
<tr>
<td>Requirement NO</td>
<td>0  (no barrier)</td>
</tr>
<tr>
<td>Abilities NO</td>
<td>+0 (no facilitator)</td>
</tr>
</tbody>
</table>
Integration possible to great extend

IMBA and ICF → complement each other

Strengths IMBA
  - Profile comparison → focus = work capacity
  - Specific and relevant work-related items
  - Work demands taken into account

Strengths ICF
  - Reference framework
Conclusion

Further developments

- ICF
  - Extended terminology → work-related categories
  - Classification of personal factors

- IMBA
  - Possible additions (ICF-VR)

- Linking of the scoring systems
  - Pilot study → evaluate explorative linking
  - In depth quantitative research
Affiliations

Stien Hennaert, MSc in Occupational Therapy. Member of staff GTB (Flemish Vocational Rehabilitation Service), Belgium.

Dominique Van de Velde, Prof, Dr. Faculty of Revalidation Sciences, Ghent University, Belgium.

Saskia Decuman, Dr. Faculty of Medicine and Health, Ghent University, Belgium; Expert Research and Development at National Institute of Health and Disability Insurance

Huget Désiron, Dr. Faculty Biomedical Sciences - Environment and Health, University Leuven (KU Leuven), Belgium; Teacher Occupational therapy at PXL; Founder and CEO ACT Désiron.
Bibliography


