Proposal for an IEA International VET (Vocational Education and Training) Study

prepared by a group of experts within IEA Germany

Prof. Dr. Susan Seeber
Chair of Business Education and Human Resource Development
Georg-August-University Göttingen
Faculty of Economic Sciences
Platz der Göttinger Sieben 5
37073 Göttingen
Phone: +49 551 39-4421
Fax +49 661 39-4417
susan.seeber@wiwi.uni-goettingen.de

Prof. em. Dr. Dr. h.c. mult. Frank Achtenhagen
Business Education and Human Resource Development
Georg-August-University Göttingen
Faculty of Economic Sciences
Platz der Göttinger Sieben 5
37073 Göttingen
Phone: +49 551 39-4421
Fax +49 661 39-4417
fachten@uni-goettingen.de

Prof. i. R. Dr. Dr. h.c. Rainer Lehmann
School of Education
Humboldt-University
Unter den Linden 6
10099 Berlin
Phone: +49 176 28196277
lehmannr@hu-berlin.de
IEA mission

• „… gaining indepth understanding of the effects of policies and practices within and across systems of education“
• „…provide international benchmarks to assist policymakers in identifying the relative strengths and weaknesses of their educational systems“
• „…develop and improve the capacity of education systems to engage in national strategies for educational monitoring and improvement“
Vocational Education and Training (VET): effects on competencies, occupational careers, labor market and economic welfare

- Different systems of VET and economic organizations obviously show different success.
- Youth unemployment on the one hand and a lack of qualified workforce on the other mark central challenges for national economies.
- Preparation for workplaces: We find excellent preparation, but also maladaptations such as too narrow preparation for workplace needs or overqualification in domains with little demand.
VET systems: perspectives for evaluation

<table>
<thead>
<tr>
<th>Competence</th>
<th>Human Resources</th>
<th>Social Cohesion</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Development of personal competence, self-regulation and autonomy as well as occupational mobility.</td>
<td>(2) Efficient use of human resources from an societal and indivual perspective.</td>
<td>(3) Fostering social participation and equal opportunities for individuals and strengthening social cohesion</td>
</tr>
</tbody>
</table>
Evaluating VET systems: Methodological challenges

In measuring and comparing the performance of national VET systems with regard to these perspectives, specific methodological challenges have to be taken into account:

(1) How can vocational competencies be measured and compared?

(2) How can the relevant micro- and macrostructural conditions of VET systems in different countries be analyzed and compared?

(3) Acknowledging the differences of job classification schemes in participating countries: How can occupational fields and work activities be identified?
Completed Preparatory Activities

- Feasibility study for a large-scale assessment for VET: Baethge & al., 2006
- Subsequent Expert Survey with N = 349 experts from eight European countries: Baethge & Arends, 2009

  Analyses of training conditions in three occupational domains: industrial/technical (car mechatronics and electricians) vs. business and administration vs. social and health care

Result: In these three domains, conditions are comparable with regard to:

1. Standards in terms of O*NET, ISCED, ISCO
2. Identification of typical occupational tasks
3. Judgments of their relevance

- Pilot studies on computer-based, comprehensive, authentic assessment tasks: Industrial clerks (Achtenhagen & Winter); carmechanics (Nickolaus et al.) (National Priority research Program on Educational Measurement)

- Large Scale, Technology-Based Assessment Initiatives (ASCOT Program)
Measuring Vocational Competencies: Two complementary approaches

**Work ability** (specific vocational competence as workplace related knowledge, skills, and values)

**Employability** (generic vocational competence as a person’s generic skill set and his or her formal and informal qualifications)
Measuring Vocational Competencies: approach #1

Work ability – specific vocational competencies (i.e., competencies that are strongly related to work) such as task relevant knowledge, skills, behavior, and judgement.

Patterns of work – orientation, planning, reasoning aspect (e.g. reasoning strategies in the context of everyday work, occupational identity)

Requirements and tools of work – action aspect (tasks that are strategically significant to the workplace and activities that an employee/worker must demonstrate)

Ways of working – soft skills aspect (e.g. communication, judgment, content and demands)

Economic domain  Industrial/technical domain  Health domain
Tests for Car Mechanics:
Repairing a car requires the same competences worldwide

Prototypes can be internationally implemented; they are open for country-specific issues.

Tools of Working
- Electronic test equipment
- Expert system

Tasks of Working
- Understanding trouble symptoms and fix a car
- Electrotechnical measurements

Measuring car mechatronics’ troubleshooting competence
- Ecologically valid troubleshooting scenarios
Please, select the material for the wound care of the knee injury of your patient, Ms. Schmidt.

(Clicking on the material in the picture)
Test for Medical Assistants: Task 2

Video Vignette: It’s Saturday afternoon, the medical practice has emergency hours. A female patient comes to the desk and asked to see the doctor for insulin, she had decided to stay longer in the city than planned, but she hadn’t enough insulin with her. She was asked by the medical assistant to sit down in the waiting room. … A couple of minutes and three patients later a patient comes running up to the desk and shout, that the older lady is obviously in a poor health status and needs help.

Test persons were asked, what to do. (Situation: The doctor is caring of another emergency patient.)

Scoring:
3 and 4 right answers = 2 points
2 right answers = 1 point
0 and 1 right answers = 0 point
Test for Medical Assistants
Three-dimensional model has best fit

Competencies in business-administration

Competencies in patient care and elementary diagnostics

Competencies in laboratory diagnostics and hygiene management

3-dimensional model fits data best; latent correlation:
(1) business-administr./(2) comp. patient care: 0.606
(1) business-administr./(3) comp. laboratory work, hygiene manag.: 0.640
(2) comp. patient care/(3) comp. Laboratory work, hygiene manag.: 0.807

Problem solving tasks (Partial credits items) with simple straightforward solutions (1) and more sophisticated alternatives (2)
Employability – Generic vocational Competencies = cross-sectoral cognitive and non-cognitive dispositions related to work activities and tasks.

Different aspects/domains of literacy related to vocational aspects

Living in the world of work (e.g. dispositions for self-regulated learning)

Abilities related to continuous learning, collaboration and responsible action
Explanatory Factors
to be measured at the individual, institutional and context levels, allowing to analyze use of human resources and social cohesion

Individual level (e.g. socio economic background, gender, work experience, life long learning aspirations)

Institutional level (e.g. opportunities to learn and work, design and support of learning processes)

Context level (e.g. structure of the vocational training system, value-added measurement of workplace and market characteristics)
## Time table of a VET-Study

### Overview

<table>
<thead>
<tr>
<th>Year</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>Policy study (expert interviews in countries)</td>
</tr>
<tr>
<td>2017</td>
<td>Report on Policy Study</td>
</tr>
<tr>
<td>2018 - 2019</td>
<td>VET-Pilot-Study:</td>
</tr>
<tr>
<td></td>
<td>- Modification and translation of instruments and decision about instruments</td>
</tr>
<tr>
<td></td>
<td>- Pilotstudy instruments</td>
</tr>
<tr>
<td>2020 - 2021</td>
<td>VET-Main-Study:</td>
</tr>
<tr>
<td></td>
<td>- Sampling procedure</td>
</tr>
<tr>
<td></td>
<td>- Data Collection</td>
</tr>
<tr>
<td></td>
<td>- Report</td>
</tr>
</tbody>
</table>
Communicating the importance of a VET study to policy makers both in education and in labor market policy

<table>
<thead>
<tr>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridging the gap between general education and vocational training with respect to labor market needs and personal development.</td>
</tr>
<tr>
<td>Facilitating the articulation of national priorities for political strategies to reduce youth unemployment by improving national VET programs.</td>
</tr>
<tr>
<td>Utilizing vocational competences (augmented by general educational indicators, such as national investments in education) as indicators for the performance of national economies.</td>
</tr>
</tbody>
</table>