

International Library of Technical and Vocational Education and Training

Felix Rauner
Rupert Maclean
Editors

Handbook of Technical and Vocational Education and Training Research



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Handbook of Technical and Vocational Education and Training Research

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Preface

Research on technical and vocational education and training (TVET research) is by now an internationally established focus of educational research. The ↑internationalisation of TVET research is expressed by the annual conferences of the European research network VETNET, the research and development programmes in the domain of vocational education conducted since the beginning of the European integration process, and the inclusion of this discipline into the international programmes of ↑World Bank, ↑OECD, ↑ILO and ↑UNESCO to promote the development of TVET systems, especially in ↑developing countries. Even though vocational education and training is important for the global economy because it serves the qualification of skilled workers for the intermediary sector of the employment system, TVET research is still largely shaped by national traditions of vocational education.

The insight that vocational education cannot escape the dynamics of internationalised technological and economic development and that the establishment of international ↑labour markets depends also on the cross-border ↑mobility of employees has led to a growing interest in TVET research. The editors of the present handbook wish to make a contribution to support this development process and to promote the discourse within the international scientific community of TVET researchers. This project was facilitated by the fact that the handbook had been published in German already in 2005. Of course the internationalisation of the handbook necessitated a thorough revision of many chapters as well as the inclusion of additional chapters and sections. The question whether the study and development of vocational education can be considered a branch of educational research in its own right was answered in the affirmative by the authors in the most convincing way. Accordingly one of the sections is exclusively devoted to ↑research methods.

TVET research builds on the contributions of a number of different ↑research traditions and disciplines. These range from ↑qualification research in industrial sociology to the didactics of the various ↑vocational disciplines. The core of TVET research has developed into an original and independent ↑research field that cannot be regarded as belonging to any other research tradition. Admittedly there are many commonalities with pedagogy, labour studies, sociology, economics and engineering in terms of ↑research questions, methods and results. Basic research with a view to the further development of TVET systems, occupations and occupational domains, and to the design and evaluation of vocational training processes, however, belong exclusively to the core of TVET research.

The challenges for TVET research have increased with the acceleration of technological and economic change and the readjustment of the relationship of internationalisation and ↑localisation in the qualification of employees. The latter can be viewed as the decisive factor for innovation and prosperity in the international competition for quality. With regard to the manifold tasks of TVET research, including the reflection of the foundations of vocational education, the shaping of vocational education and training in ↑pilot projects or the monitoring of international ↑TVET cooperation, this handbook aspires to be more than just a reference book to provide guidance and lexical knowledge on TVET research. The handbook is also intended as a tool that makes it possible to distinguish TVET research with all its domains in the competition with other research disciplines.

This handbook is part of a library of handbooks on vocational education and training to enable the international TVET community to fulfil their tasks and organise their work more and more in a professional way.

Parallel with the publication of this handbook, Rupert Maclean and David Wilson are publishing the *International Handbook of Education for the Changing World of Work* (MACLEAN/WILSON/CHINIEN 2008). This handbook consists of six volumes and stands out for an extensive portrayal of TVET taking into consideration all its abundant aspects and regional or sector related peculiarities.

TVET research can bridge the gaps between TVET practice, ↑TVET policy and educational research. This means that innovations in vocational education and training can increasingly draw on the resources of TVET research.

The present handbook with its 142 chapters is the collective work of 128 authors. Above all it is them to whom the editors wish to convey their gratitude. The handbook is the result of an excellent cooperation of one and a half years, to which all authors made valuable contributions not only with their texts, but also with their suggestions and their readiness to adhere to the very strict time-schedule. Special thanks are due to the section editors, who made an important contribution to the quality of the handbook by their conceptual suggestions and by the editorial supervision of the chapters in their sections with regard to style and content. With their help it was ultimately possible to present the first international Handbook of TVET Research in which the ↑research tradition related to vocational education and training is comprehensively documented with its ↑research problems, methods and results.

We are well aware that this is no more than one more step towards the ↑internationalisation of TVET research, albeit a big one. TVET research now has a reference point that allows for a more systematic differentiation and deepening of the international scientific discourse.

The organisation of the project was done by Brigitte Schweckendieck and Daniela Marschall. In addition to that, Ms Schweckendieck edited the voluminous indexes and created the printing template for the work. Anne Kirkham and Wolfgang Wittig collaborated in the editorial revision of the chapters. We also wish to thank the publisher, Springer International, for the attractive realisation of the handbook. Without the support of the Institute Technology and Education of the University of Bremen and the ↑UNESCO-UNEVOC International Centre in Bonn this project could not have been realised.

We, the editors, are responsible for the gaps that remain and last not least for the shortcomings of the handbook. We therefore wish to close with the invitation to the users of this handbook to send their critique and suggestions for improvements to us so that they can be considered in a future edition.

Bremen and Bonn, October 2008

Felix Rauner Rupert Maclean

Introduction

Vocational Education and Training Research – an Introduction

Felix Rauner and Rupert Maclean

Vocational Education and Training Research – an Introduction

Felix Rauner and Rupert Maclean

It was with the establishment of national and international research institutions at the latest that (technical and) vocational education and ↑training research became a central area of ↑educational research. The major steps in this regard were the establishment of the German Federal Institute for Vocational Education and Training Research (BBF) (1970), which was subsequently named Federal Institute for Vocational Education and Training (BIBB), the French Centre des études et des recherches sur les qualifications (Céreq) (1970), the All Union Institute for Technical and Vocational Education of the USSR in Leningrad (1963) and the establishment of the Center for Research and Leadership in Vocational and Technical Education (↑NCRVE) (1965) in the ↑United States, which was later (1977) promoted to the status of a National Research Center. On the international level one must above all mention the ↑UNESCO International Center for Technical and Vocational Education and Training (UNESCO-UNEVOC) (2000) and the European Centre for the Development of Vocational Training (↑CEDEFOP) (1975). The national and international interest in vocational education and training research is a consequence of the direct connection of vocational education not only with education policy, but also with economic and ↑labour market policy.

Vocational education is considered a key factor for improving or maintaining the competitiveness of enterprises and national economies. For instance, the Modernization Forum in the United States emphasises in its study “Skills for Industrial Modernization” (1993):

“As the pace of economic and technological trade accelerates, the abilities of workers and enterprises to learn and adapt becomes a core element in the global competition among corporations and national economies” (MODERNIZATION-FORUM 1993, 4).

Public vocational education and training research is therefore as a rule closely linked to the mission of ↑VET planning and embedded into the VET dialogue between industry associations, trade unions and the governmental departments responsi-

ble for vocational education and training (→2.0). The differences regarding the role of the scientific VET discourse and its proximity to the overall national system of educational institutions depend on the extent to which vocational education is integrated into the educational systems in question.

In countries where a relatively broad university education of ↑vocational schoolteachers is mandatory, the corresponding pedagogical study programmes, which are differentiated into ↑vocational disciplines, constitute a research infrastructure that allows for a professional design of vocational education, learning and teaching processes. The ↑internationalisation of technological and economic development and the emergence of transnational (skilled) labour markets – e. g. in the European Union – have intensified the convergence in vocational education (cf. GROLLMANN/SPÖTTL/RAUNER 2006) and given considerable impulses to the internationalisation of TVET research. The establishment of the United TVET Network on Innovation and Professional Development (UNIP) is a manifestation of this development.

The variety of ↑research questions and ↑development tasks at the levels of vocational education and training systems (macro level), the organisation and design of vocational training programmes and institutions (meso level) and the analysis and shaping of education and learning processes (micro level) leads to the integration of different scientific disciplines and ↑research traditions. TVET research therefore can be organised only in an ↑interdisciplinary way, notably through the ↑participation of disciplines like psychology, industrial sociology, sociology of work, sociology of education, organisation theory, natural sciences, engineering, pedagogy and economics. Didactical and domain-specific competences are especially brought in by vocational pedagogues as the latter normally have a qualification in a vocational discipline and its didactics (→3.2).

Although the call for ↑interdisciplinarity in the study of complex ↑research fields and topics is repeatedly stressed from a scientific and political perspective, the practical realisation of ↑interdisciplinarity turns out to be difficult. However, it is constitutive for TVET research to treat its research subject as an original one and to provide a sub-

ject-adequate foundation of the ↑research methods (→5.1). The founders of TVET research already formulated this claim in their call for the development of a ↑methodology for TVET research. For instance, the first ↑research programme of the BBF included the

“development of methodological and terminological instruments for the activities of the instruments, taking into consideration the interdisciplinary relationships” (BBF 1971b, 6 [translated from German]).

Since the beginning of the 1970s the practice of TVET research has taken shape and increasingly been organised as an international scientific community. The European research network Vocational Education and ↑Training Research Network (VETNET), which was established in 1997, as well as the international network of ↑UNESCO-UNEVOC centres are an expression of this ↑development. However, the realisation of the claim to clarify the methodological foundations of TVET research fell short of the objectives set by the founders of the state institutes for TVET research. The present handbook wishes, among other things, to make a contribution to filling this gap (→5; →5.1).

The roots of the internationally established TVET research date back to the Swedish reform pedagogy at the end of the 19th century, which succeeded in presenting the topic “education for the world of work” through its “pedagogical Slöj” at the five successive world fairs between 1876 and 1904. The achievements of these vocational pedagogical traditions were even awarded a gold medal at the world fair in Paris (REINCKE 1995, 7). An international community of vocational pedagogues from the Scandinavian countries, the ↑United States, Russia and Europe treated this pedagogy at the interface between school and the world of work not only as a topic of educational practice, but introduced it also into the education of teachers and thus made it a topic of scientific discourse (HODSON 1901; LARSSON 1899). With regard to the development of TVET research in Germany Lipsmeier emphasises the scientification of the reflection, analysis and implementation of vocational education in the context of the activities of the German Committee for Technical Schooling (Deutscher Ausschuss für technisches Schulwesen, DAT-SCH) established in 1908 and the German Insti-

tute for Technical Work Instruction (Deutsches Institut für Technische Arbeitsschulung, DIN-TA) founded by large-scale industry (LIPSMIEIER 2005, 22). Already around the year 1900 an internationally comparative branch of ↑educational research emerged, in which vocational pedagogues also participated. The centre of this comparative research was the “International Institute for Teacher Colleges” at Columbia University in New York where pedagogues like Dewey, Kandel, Monroe and Kerschensteiner met (LAUTERBACH 2003b, 220 ff.).

The works of David Snedden in the early 20th century on the development of ↑vocational curricula had a far-reaching impact. His concept of “Real Vocational Education” laid the foundations of VET didactical research in the ↑USA (cf. also DROST 1967; SNEDDEN 1912; KLIEBARD 1999). This was accompanied by a fundamental debate on the function of vocational education, which continues to shape the vocational pedagogical discussion and TVET research to this day. The reduction of vocational education to the dimension of qualification according to the demands of the employment system was expressed by the curriculum approach by Bobbitt (1918). This approach viewed vocational education for the industrial development in the USA as a process that had to be organised according to the rules of scientific management as formulated especially by Taylor (cf. TAYLOR 1911). In contrast to this, John Dewey represented a theory of ↑vocational pedagogy that situated vocational education in the context of democratic education (DEWEY 1916b).

It was already at the beginning of the 20th century that tasks like the development of ↑occupational profiles, the definition of ↑specific domains and skills for skilled workers and the development of procedures to measure a candidate’s suitability for a specific vocational training course were covered by TVET research. This feature links TVET research to pedagogy as an action-guiding discipline as well as to labour studies as a discipline that aims at the analysis and shaping of work (EMERY 1959; HACKMAN/OLDHAM 1976; ULICH 1994). In TVET research the development of occupations and occupational profiles, of vocational curricula and training media as well as training methods