

Scheuch, I., Gessler, M., Bohlinger, S., Zlatkin-Troitschanskaia, O., Greppmair, A-C., Toepper, M., Bieß, A., & Kühling-Thees, C. (2021). Research on the internationalization of vocational education and training: Current state and future perspectives. In C. Nägele, N. Kersh, & B. E. Stalder (Eds.), *Trends in vocational education and training research, Vol. IV. Proceedings of the European Conference on Educational Research (ECER), Vocational Education and Training Network (VETNET)* (pp. 261–269). <https://doi.org/10.5281/zenodo.5474156>

Research on the Internationalization of Vocational Education and Training: Current State and Future Perspectives

Scheuch, Ianina

ianina.scheuch@tu-dresden.de, TU Dresden

Gessler, Michael

mgessler@uni-bremen.de, Institute of Technology and Education (ITB), University of Bremen

Bohlinger, Sandra

sandra-bohlinger@tu-dresden.de, TU Dresden

Zlatkin-Troitschanskaia, Olga

troitschanskaia@uni-mainz.de, JGU Mainz

Greppmair, Anja-Christina

anja.greppmair@uni-bremen.de, Institute of Technology and Education (ITB), University of Bremen

Toepper, Miriam

miriam.toepper@uni-mainz.de, JGU Mainz

Bieß, Anne

anne.biess2@tu-dresden.de, TU Dresden

Kühling-Thees, Carla

c.kuehling-thees@uni-mainz.de, JGU Mainz

Abstract

Context: Vocational education and training (VET) is a key driver of the development of educational, social, and economic policy and practice. To date, however, systematic knowledge about VET models and approaches, which differ widely between nations and cultures, remains limited yet highly diverse, as can be observed in the fragmentation of research frameworks from different disciplines. Against this background, this paper provides an overview of the current state of research on the internationalization of VET in German-speaking areas. A major part of the study was conducted in the context of the funding program “Research for the Internationalization of Vocational Education and Training,” established by the German Ministry of Education and Research, which aims to improve national and international VET by implementing a systematically connected, (inter)national research network for the field.

Methods: To systematize the current state of research, we have differentiated major thematic fields therein. Our methods included a systematic review of literature in these fields, the documentary analysis and structured content analysis of relevant research projects.



Findings: This paper focuses on selected research fields, discusses major ongoing research activities in German-speaking countries, and identifies promising directions and implications for future research both nationally and internationally.

Conclusions: To gain a comprehensive understanding and to promote further development of research on the internationalization of VET, further expansion of knowledge and integration of different disciplines and actors are needed. This requires a long-term and systemic research vision and the establishment of a multidisciplinary research community at the national as well as the international level.

Keywords

vocational Education and Training, VET, internationalization, research review, documentary analysis, content analysis, Germany

1 Introduction

Vocational education and training (VET) is a key driver of the development of educational, social, and economic policy and practice. In recent times, VET has seen an increase in attention all around the world (OECD, 2014). We use the term ‘VET’ to refer to the highly diverse field of (technical and) vocational education and training, which covers all types of education and training with a clear relevance for employment and the labor market. Nationally and internationally, there is a great demand not only for expertise in VET but also for the sustainable and effective development of VET structures (McGrath et al., 2019). To date, however, systematic and comparative research about models and approaches in VET, which differ widely between nations and cultures, remains limited yet highly diverse (Evans, 2020; Pilz & Li, 2020). In particular, numerous studies and reports address the field from a national or regional perspective, as can be observed in the fragmentation of research and various frameworks from different domains and disciplines (Evans, 2020; Lauterbach & Mitter, 1998; Pilz & Li, 2020). Given the importance of VET, a more systematic understanding of the current state and future perspectives on the internationalization of VET is required.

In Germany, the importance of international cooperation in VET has been well recognized in recent years, especially with the new funding initiative “Research for the Internationalization of Vocational Education and Training” (Internationalisierung der Berufsbildungsforschung (IBBF)), established by the German Federal Ministry of Education and Research (Bundesministerium für Bildung und Forschung (BMBF)). The aim of the initiative is threefold: (1) strengthening the expertise of universities and other institutions in the research on international vocational training projects and the training of academic vocational training staff; (2) integrating that expertise more closely into the BMBF’s international vocational training cooperation; and (3) making the research outcomes accessible to foreign partners to promote a shift toward more practice-oriented VET, in both its initial and continuing forms (BMBF, 2017). This program currently includes eleven international projects with partners in Europe, Central America, South Africa, and Asia, and a “Metaproject on Research for the Internationalization of Vocational Education and Training” (MP-INVET). Although the funding period of these research projects is limited to three or four years, the metaproject aims to improve national and international VET by implementing a systematically connected, (inter)national research network to improve the cross-national connectivity of the new research initiative in the long term.

Though the term ‘internationalization’ spans a broad range of activities, in this study, we refer mostly to research in VET that covers international perspectives and projects with international partners in VET. Against this background and based on the ongoing funding initiative, the study presented here focuses on major fields in research on internationalization of VET in German-speaking countries, discusses ongoing research projects, and identifies promising

directions and implications for future research and network-oriented activities, both nationally and internationally.

2 Methods

The purpose of the study is to examine the current state of and prospects for research on the internationalization of VET in the context of the German funding initiative “Research on the Internationalization of Vocational Education and Training.” The study methods include a literature review, a documentary analysis, and a structured content analysis - all focused on eleven research projects. To systematize the current state of research, we conducted a literature review of research on the internationalization of VET and differentiated six major research fields therein: (1) international cooperation and development in VET, (2) international (policy) transfer in VET, (3) European cooperation and governance in VET, (4) VET in the context of service-focused research, (5) VET in the context of corporate research, and (6) research on networks in VET (for details, see Gessler et al., 2020, p. 8f.). We subsequently used this categorization to classify the eleven projects chosen for this study. To that end, a structured content analysis of these projects was undertaken to interrelate and aggregate their focal research themes. In addition, political and working documents addressing strategic and program-related approaches to internalizing VET were analyzed and implications as well as future directions for network activities within the initiative were identified.

3 Results

3.1 Research on the Internationalization of VET

Research on the internationalization of VET can be characterized as diverse, broad, and complex, involving numerous strands and focuses, various conceptual and methodological approaches, and different actors and structural elements (Evans, 2020; Lauterbach & Mitter, 1998; Pilz & Li, 2020). Despite its high relevance to researchers, policymakers, and practitioners in Germany, however, neither a unified conceptualization nor a unified understanding of internationalization of VET exists to date. In this paper, we understand internationalization as follows:

A series of international activities such as [...] mobility for students and teachers; international linkages, partnerships, and projects; and new, international academic programs and research initiatives. For others, it means the delivery of education to other countries through new types of arrangements such as branch campuses or franchises using a variety of face-to-face and distance techniques. To many, it means the inclusion of an international, intercultural, and/or a global dimension into the curriculum and teaching learning process. Still others see international development projects and, alternatively, the increasing emphasis on trade in [...] education as internationalization. Finally, there is frequent confusion as to the relationship of internationalization with globalization. (Knight 2004, p. 5f.)

Although this definition spans a broad range of activities, we refer mostly to research in VET that cover international perspectives and projects with international partners in VET.

Regarding specific topics from a German perspective, research on VET has focused primarily on the transfer and transferability of initial VET, the so-termed dual apprenticeship model, as well as on so-called “training-on-the-job” approaches, whereas hybrid qualifications with university and vocational components (Ebner, 2013; Euler, 2013; Deissinger, 2015) have only recently received attention (Fromberger, 2019; Graf et al., 2014). Overall, the state of research on internationalization of VET in the German-speaking areas can be systematized into six main fields, some of which extend well beyond VET (Gessler et al., 2020):

(a) *International cooperation and development in VET* (i.e., “development studies”) focuses on capacity building in initial and continuing VET as a subfield of development studies (Clement, 2012). Research and recommendations for action refer to the modalities of international VET cooperation and its underlying (political) strategies (Arnold, 1989; Stockmann & Resch, 1992; Greinert et al., 1997; Georg, 2006), their trends and transformations (Stockmann, 1997; Wallenborn, 2006; Arnold, 2006), and their effectiveness (Stockmann, 1996; Stockmann & Silvestrini, 2013).

(b) *International transfer in VET* (i.e., “transfer studies”) focuses on questions surrounding the transfer of (German) VET (dual) systems and/or elements to other countries (Baumann et al., 2020; Euler & Wieland, 2015; Deissinger, 2015). Some approaches draw on political science findings subsumed under policy transfer (Bohlinger, 2018; Barabasch & Wolf, 2009, 2010, 2012).

(c) *European cooperation and governance in VET* (i.e., “European studies”) focuses primarily on European cooperation and, more recently, on questions regarding multilevel governance in the European Union (Bohlinger, 2015; Bohlinger & Wolf, 2016; Rasmussen, 2014; Milana & Klatt, 2019).

(d) *VET in the context of service research* (i.e., “service studies”) focuses on questions of service development, provision, and distribution, and the promotion of international business relations (Fraunhofer MOEZ, 2012; Kühn, 2021; Muylkens, 2013; Heusinger, 2014; Jonda & Heusinger, 2016). The German providers’ initiatives, including “iMove: International Marketing of Vocational Education and Training” launched in 2001 and “Vocational Training Export” launched in 2008, represent the area.

(e) *VET in the context of corporate research* (i.e., “corporate studies”) focuses on shifts in production, services, and human resources across countries and regions for entry into new markets and development of new approaches to vocational training in companies (Fuchs et al., 2016; Gessler, 2017; Holle, 2019; Peters, 2019; Pilz & Li, 2014; Pilz & Wiemann, 2020).

(f) *Research on networks in VET* (i.e., “network studies”) focuses on social networks in general (e.g., Castells, 1990, 2006) or on the conditions for successful regional (vocational) education and training cooperation (e.g., Buschfeld et al., 2016; Payer, 2008; Schröder, 2019).

Albeit overlapping and incomplete to some extent, this classification is useful for structuring, systematically discussing, and consolidating the numerous ongoing research activities in the context of VET and for identifying promising directions for development. The research areas presented can also be understood as a categorization framework of the eleven research projects, as described in the next section.

3.2 Research for the Internationalization of VET in the Context of the IBBF Funding Program

The “Research for the Internationalization of Vocational Education and Training” is one of the most important research initiatives in Germany, covering a wide range of topics, as illustrated in Table 1. The initiative upholds three funding priorities (BMBF, 2017): (A) current issues in VET research in the context of VET cooperation, (B) research on the prerequisites for successful VET cooperation in countries with existing BMBF cooperation in VET and in other countries and regions, and (C) the development of joint pilot measures for capacity building in VET research in the BMBF’s partner countries.

Table 1*Research projects and funding priorities (Gessler et al, 2020, p. 12)*

Acronym and project title	Location(s)	Institution(s)	Duration	Funding priority
CAPE-VET: Cooperative Investigation of the Prerequisites for the Successful Design of Higher Education Qualification Programs for Vocational Training Staff	South Africa	Europa University of Flensburg, Flensburg University of Applied Science	2019–2022	B
CodeVET: Competence Development in VET: A Comparative Analysis of Intended and Implemented Curricula in the Field of Business Administration	China, Russia	University of Cologne, University of Osnabrück	2019–2022	A
CoRi VET: Costa Rican Vocational Education and Training	Costa Rica	University of Osnabrück	2021–2025	C
DualReg: Locally Rooted– Worldwide Linked Up: Mexico–Success Conditions for Transfer of Vocational Education and Dual Practices	Mexico	University of Cologne	2019–2022	B
efach: Factors for Successful Cooperation in Vocational Training with People’s Republic of China: A Comparison of State, Civil Society and Private Sector Concepts	China	Saarland University	2019–2022	B
IntVET: Success Factors of International Business Models for the Export of Vocational Training to Vietnam	Vietnam	Leipzig University	2019–2022	B
KuPraMex: Cultural Practice of Non-Academic Work in Mexico	Mexico	University of Kassel	2019–2022	B
PeruDual: In-Company Training Quality and Role of Trainers in Dual VET in Peru	Peru	Technical University of Dortmund	2019–2021	B
ProWoThai: Progressing Work-Based Learning of TVET System in Thailand	Thailand	Technical University of Dortmund	2019–2023	C
QuallIndia: Quality Analysis of Indian Vocational Education and Training Institutions with a Focus on Industrial Training Institutes and Polytechnic Colleges	India	University of Cologne	2019–2022	A
VoCasian: Development of Capacities and Graduate Schools as well as the Implementation of a PhD Program for Vocational Education and Training Research in Georgia	Georgia	Otto von Guericke University Magdeburg	2020–2023	C

Table 2, presenting the focal fields of the eleven research projects, shows that the major research fields in this area are reflected in the IBBF initiative, with the exception of European studies. However, the projects mostly focus on development studies, which need to be subdivided further. For example, CodeVET implements international comparative research on curricula at the level of teaching, whereas QuallIndia addresses organizational development processes, with a focus on industrial training institutions and polytechnic colleges. KuPraMex, by comparison, focuses on the societal/cultural aspect and examines the ‘cultural artifacts’ of non-academic work. Therefore, the development studies comprise a broad range of specific research questions: e.g., KuPraMex focuses on the macro level and examines not only the usual political or economic factors but also sociocultural conditions; CodeVET focuses on the “black box” of

teaching and learning activities at the micro level. Similar to development studies, transfer studies usually occur in connection to other fields (e.g., development studies or corporate studies; for examples, see e.g., CAPE-VET, CoRi VET, efach, PeruDual, QualIndia, VoCasian, ProWoThai). Finally, service studies and network studies are represented by only one project each: IntVET and DualReg, respectively. Overall, the projects in the IBBF program are characterized by a variety of approaches and disciplines, all to seek out the most promising avenues of research advancement.

Table 2

Research focuses of the 11 projects. X = main focus; (X) = side aspect (Gessler et al., 2020, p. 13)

Project	Research focus				
	Development studies	Transfer studies	Service studies	Corporate Studies	Network studies
CAPE-VET	(X)	X			
CodeVET	X				
CoRi VET	X	(X)			
DualReg		(X)			X
efach	X	(X)			
IntVET			X		
KuPraMex	X				
PeruDual		(X)		X	
ProWoThai		(X)		X	
QualIndia	X	(X)			
VoCasian	X	(X)			

4 Conclusion and Future Perspectives: Towards Integrated Research and Knowledge Transfer

In its current state, research on the internationalization of VET is often conducted in a disciplinary manner with corresponding delimitations, exclusions, and confinements. Overall, the VET research is marked by fragmentation in the research landscape. At the same time, the research community focusing on international VET, is multidisciplinary. The considerable diversity and intersection of different domains often leads to getting “Lost in VET” (Wiemann et al., 2019; Pilz & Li, 2020) but also offers possibilities for open dialogue and development of the field (Evans, 2020). To support further research development, an interdisciplinary research network has been established as the focus of the research meta-project MP-INVET. The goals of developing and maintaining a research network therefore, are focused on systematically consolidating and integrating the various disciplinary approaches around VET to overcome the research fragmentation. Therefore, the overarching question of MP-INVET’s networking perspective is: how can we enable interdisciplinarity and integration of different perspectives in the research on the internationalization of VET? Furthermore, the internationalization of VET as a research topic is characterized not only by diversity in disciplines and approaches but also by social, institutional, and temporal complexity. It therefore becomes a so-termed “wicked problem” (Coyne, 2005): a complex, partly contradictory dilemma that cannot be solved or overcome by the research system alone. Instead, it requires a transdisciplinary approach involving other (non-research-related) actors, including VET providers and institutions. The second overarching question of MP-INVET’s network is therefore: how can transdisciplinary be used to integrate and transfer current knowledge from different domains and actors?

In answering both questions, it is important to identify the connections between the numerous approaches, theories, and best-practice models that exist in the national and international context to make them specifically connectable and transferable for international VET

cooperation and to integrate and consolidate them in the form of an inter- and transdisciplinary research network. The IBBF funding initiative has initially served to improve and expand institutionalized research on the internationalization of VET as a core principle of cooperation in international VET. With that objective, however, this initiative simultaneously focuses on strengthening research on the internationalization of VET in German-speaking countries in two ways: by promoting project-based work and by establishing a cross-program research community at the national and international levels in the long term.

References

- Arnold, R. (2006). Die ‚Entdeckung‘ des Arbeitsmarktes in der internationalen Berufsbildungszusammenarbeit: Die neuen sektorpolitischen Vorgaben kritisch-konstruktiv gesichtet. *Zeitschrift für Berufs- und Wirtschaftspädagogik*, 102(3), 444–454.
- Arnold, R. (Ed.). (1989). *Berufliche Bildung und Entwicklung in den Ländern der Dritten Welt: Bilanz, Probleme und Perspektiven der bundesrepublikanischen Berufsbildungshilfe*. Nomos.
- Barabasch, A., & Wolf, S. (2009). Die Policy-Praxis der Anderen. Policy-Transfer in der Bildungs- und Berufsbildungsforschung. *Zeitschrift für internationale Bildungsforschung und Entwicklungspädagogik*, 32(4), 22–27.
- Barabasch, A., & Wolf, S. (2010). VET Policy Transfer in Ägypten, Malaysia und Korea. In M. Friese, B. Fürstenauf, R. Tenberg, & E. Wuttke (Eds.), *Neue Forschungserträge und Perspektiven der Berufs- und Wirtschaftspädagogik, Schriftenreihe der Sektion BWP der DGfE* (pp. 123–134). Budrich.
- Barabasch, A., & Wolf, S. (2012). Policy Transfer in der Berufsbildung in den Ländern China und USA. *Die Berufsbildende Schule*, 64, 161–166.
- Baumann, F. A., Frommberger, D., Gessler, M., Holle, L., Krichewsky-Wegener, L., Peters, S., & Vossiek, J. (2020). *Berufliche Bildung in Lateinamerika und Subsahara-Afrika*. Springer.
- Bohlinger, S. (2015). Governing vocational education and training in Europe. In S. Bohlinger, U. Haake, C. H. Jørgensen, H. Toiviainen, & A. Wallo (Eds.), *Working and learning in times of uncertainty* (pp. 209–222). Sense.
- Bohlinger, S. (2018). Politiktransfer in der beruflichen Bildung. In M. Eckert, K. Lehmkuhl, & S. Wolf (Eds.), *Duale Ausbildung im Tourismus-das Projekt MENDI: Deutsch-griechische Kooperation in der beruflichen Bildung* (pp. 191–205). Bertelsmann.
- Bohlinger, S., & Wolf, S. (2016). Zwischen Dynamik und Stagnation. Politiktransfer kooperativer Berufsausbildung als Weg aus der Jugendarbeitslosigkeit in Südeuropa. *Zeitschrift für Pädagogik*, 62(3), 340–357.
- Buschfeld, D., Dilger, B., Fischer, F., & Fütterer, K. (2016). Weiterentwicklung der Berufskollegs im Verbund—ein Bericht über das Modellprojekt „Regionales Berufsbildungszentrum Dortmund“. *Berufs- und Wirtschaftspädagogik (bwp@)*, 31, 1–19.
- Castells, M. (1990). *The rise of the network society*. Hoboken.
- Castells, M. (2006). *The theory of the network society*. MPG Books.
- Clement, U. (2012). Berufsbildung in der deutschen Entwicklungszusammenarbeit. *Zeitschrift für Berufs- und Wirtschaftspädagogik*, 108(1), 93–107.
- Coyne, R. (2005). Wicked problems revisited. *Design Studies*, 26(1), 5–17.
- Deissinger, T. (2015). The German dual vocational education and training system as ‘good practice’? *Local Economy*, 30(5), 557–567.
- Ebner, C. (2013). *Erfolgreich in den Arbeitsmarkt? Die duale Berufsausbildung im internationalen Vergleich* (Vol. 960). Campus.
- Euler, D. (2013). *Germany’s dual vocational training system: a model for other countries?* Bertelsmann. https://www.bertelsmannstiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/GP_Germans_dual_vocational_training_system.pdf
- Euler, D., & Wieland, C. (2015). *The German VET system: Exportable blueprint or food for thought*. Bertelsmann.
- Evans, K. (2020). Comparative vocational education and training research: What purposes does it serve? In M. Pilz, & J. Li. (Eds.), *Comparative vocational education research: Enduring challenges and new ways forward* (pp. 3–19). Springer.
- Fraunhofer, MOEZ. (2012). *Treibende und hemmende Faktoren im Berufsbildungsexport aus Sicht deutscher Anbieter*. Fraunhofer MOEZ.
- Fromberger, D. (2019). *Wege zwischen beruflicher und hochschulischer Bildung. Ein internationaler Vergleich*. Bertelsmann.
- Fuchs, M., Schamp, E. W., & Wiemann, J. (2016). Duale Aus- und Fortbildung goes global? Zur Internationalisierung von Wissen in der industriellen Fertigung durch global-lokale Qualifizierungsstrategien multinationaler Unternehmen. *Geographische Zeitschrift*, 140–157.

- Georg, W. (2006). Berufsbildung in Entwicklungsländern. In Arnold, R. & Lipsmeier, A. (Eds.), *Handbuch der Berufsbildung* (pp. 509–530). Springer.
- Gessler, M., Bohlinger, S., Zlatkin-Troitschanskaia, O., Toepper, M., Steinert, M., Biess, A., Kühling-Thees, C., & Scheuch, I. (2020). Schwerpunkte der Förderinitiative „Internationalisierung der Berufsbildungsforschung“ (IBBF) des Bundesministeriums für Bildung und Forschung. *Kölner Zeitschrift für Wirtschaft und Pädagogik*, 69(2), 7–28.
- BMBF, Bundesministerium für Bildung und Forschung (2017). Translated excerpt from announcement. *Regulations governing funding for research on the internationalization of vocational education and training (VET)*. https://www.berufsbildung-international.de/files/BEK_IBBF_eng.pdf.
- Gessler, M. (2017). Educational transfer as transformation: A case study about the emergence and implementation of dual apprenticeship structures in a German automotive transplant in the United States. *Vocations and Learning*, 10(1), 71–99.
- Graf, L., Powell, J. J., Fortwengel, J., & Bernhard, N. (2014). *Duale Studiengänge im globalen Kontext: Internationalisierung in Deutschland und Transfer nach Brasilien, Frankreich, Katar, Mexiko und in die USA*. DAAD.
- Greinert, W. D., Heitmann, W., Stockmann, R., & Vest, B. (1997). *Vierzig Jahre Berufsbildungszusammenarbeit mit Ländern der Dritten Welt. Die Förderung der beruflichen Bildung in den Entwicklungsländern am Wendepunkt*. Nomos.
- Heusinger, W. (2014). Warum Deutschland der Berufsbildungsexport nicht gelingt. *Wirtschaft & Pädagogik*, 66(4/5), 38–43.
- Holle, L. (2019). *Personalstrategische Maßnahmen von deutschen Unternehmen in China: Eine Fallstudie am Beispiel mittelständischer Unternehmen*. Springer.
- Jonda, B. & Heusinger, W. (2016). *Trendbarometer Exportbranche Aus- und Weiterbildung*. iMOVE.
- Knight, J. (2004). Internationalization remodeled: Definition, approaches, and rationales. *Journal of Studies in International Education*, 8(1), 5–31.
- Kühn, I.K. (2021). Geschäftsmodellentwicklung, Dienstleistungsentwicklung und Dienstleistungstransfer: Lessons learned für die Internationalisierung der Berufsbildung. In D. Frommberger & M. Gessler (Eds.), *WB-IBB Working Papers 2/2021*. Universität Osnabrück & Universität Bremen.
- Lauterbach, U., & Mitter, W. (1998). Theory and methodology of international comparisons. In CEDEFOP (Ed.), *Vocational education and training—the European research field [Background report, Vol. II]*, 235–271.
- McGrath, S., Mulder, M., Papier, J., & Stuart, R. (Eds.). (2019). *Handbook of vocational education and training: Developments in the changing world of work*. Springer.
- Milana, M. & Klatt, G. (2019). Governing adult educational policy development in Europe. In McGrath, S., Mulder, M., Papier, J., & Stuart, R. (Eds.), *Handbook of vocational education and training: Developments in the changing world of work*. Springer.
- Muylkens, M. (2013). *Trendbarometer Exportbranche Aus- und Weiterbildung*. iMOVE.
- OECD, Organization for Economic Co-operation and Development (2014). *Skills beyond school: Synthesis report*. OECD.
- Payer, H. (2008). Netzwerk, Kooperation, Organisation-Gemeinsamkeiten und Unterschiede. In Bauer-Wolf, S., Payer, H., & Scheer, G. (Eds.), *Erfolgreich durch Netzwerkkompetenz – Handbuch für Regionalentwicklung* (pp. 5–22). Springer.
- Peters, S. (2019). *Bildungstransfer im Unternehmenskontext*. Springer.
- Pilz, M. & Li, J. (Eds.) (2020). *Comparative vocational education and training research: enduring challenges and new ways forward*. Springer.
- Pilz, M., & Li, J. (2014). Tracing Teutonic footprints in VET around the world? The skills development strategies of German companies in the USA, China and India. *European Journal of Training and Development*, 38(8), 745–763.
- Pilz, M., & Wiemann, K. (2021). Does dual training make the world go round? Training models in German companies in China, India and Mexico. *Vocations and Learning*, 14(1), 95–114.
- Rasmussen (2014), Adult learning policy in the European Commission: Development and status. In P. Milana, M. & Holford, J. (Eds.), *Adult education policy and the European Union: Theoretical and methodological perspectives* (pp. 15–34). Sense.
- Schröder, T. (2019). A regional approach for the development of TVET systems in the light of the 4th industrial revolution: the regional association of vocational and technical education in Asia. *International Journal of Training Research*, 17(sup1), 83–95.
- Stockmann, R. (1996). *Die Wirksamkeit der Entwicklungshilfe: Eine Evaluation der Nachhaltigkeit von Programmen und Projekten der Berufsbildung*. Westdeutscher Verlag.
- Stockmann, R. (1997). Zum Wandel der deutschen Berufsbildungshilfe: Ein Vergleich zwischen Entwicklungs- und Bildungstheorie, Förderprogramm und Implementation. In Greinert, W. D., Heitmann, W.,

- Stockmann, R., & Vest, B. (Eds.), *Vierzig Jahre Berufsbildungszusammenarbeit mit Ländern der Dritten Welt. Die Förderung der beruflichen Bildung in den Entwicklungsländern am Wendepunkt* (pp. 13–44). Nomos.
- Stockmann, R., & Resch, A. (1992). Die Nachhaltigkeit von Entwicklungsprojekten. *Eine Methode zur Evaluierung am Beispiel von Berufsbildungsprojekten*. Westdeutscher Verlag
- Stockmann, R., & Silvestrini, S. (Eds.). (2013). *Metaevaluierung Berufsbildung: Ziele, Wirkungen und Erfolgsfaktoren der deutschen Berufsbildungszusammenarbeit*. Waxmann.
- Wallenborn, M. (2006). Ist Berufsbildungszusammenarbeit (BBZ) altmodisch? *Zeitschrift für Berufs- und Wirtschaftspädagogik*, 102(1), 143–148.

Biographical notes

Ianina Scheuch is a Research Assistant at the Chair of Adult Education at TU Dresden, Germany. The focus of her research interests is on vocational education and training, comparative education, business education, and management training.

Michael Gessler, Dr Phil., Dr h.c., is a Full Professor of Vocational Education and Training at the Institute of Technology and Education (ITB), University of Bremen, Germany. His research focus is on innovations and transfer of innovations in vocational education and training.

Dr **Sandra Bohlinger** is Full Professor of Adult Education at TU Dresden, Germany. Her research interest is in vocational education and training and comparative education.

Dr **Olga Zlatkin-Troitschanskaia** is Full Professor of Business and Economics Education at Johannes Gutenberg University Mainz (JGU), Germany. Her research focuses on modeling and measuring student knowledge, skill development and learning outcomes in vocational and higher education at both the national and international level.

Dr **Anja-Christina Greppmair** is a Post-Doctoral Researcher at the Institute of Technology and Education (ITB), University of Bremen, Germany. Her research interests focus on internationalization and transfer of VET, personnel development, teaching and learning in adult education.

Miriam Toepper is a Research Assistant at the Department of Business and Economics Education at Johannes Gutenberg University Mainz (JGU). Her research focuses on competency modeling and performance-based assessment in international higher education and adult education research.

Anne Bieß is a Research Assistant at the Chair of Adult Education at TU Dresden, Germany. Her research interest focuses on vocational education and training, comparative education, adult education, and further education.

Carla Kühling-Thees is a Research Assistant at the Department of Business and Economics Education at Johannes Gutenberg University Mainz (JGU). Her research focuses on learning, assessment, and professional development in higher and adult education.

Acknowledgements

The authors acknowledge funding from the German Federal Ministry of Education and Research (project number: 01BF19001).