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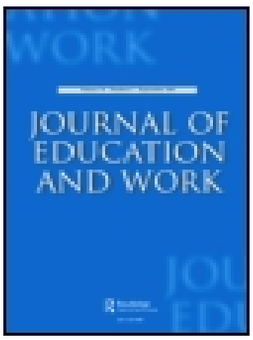

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Modularisation in the German VET system: a study of policy implementation

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ABSTRACT

Modularisation of vocational training courses is a major issue across many European countries. Germany has been slow to implement modularisation in its VET system: the prevailing view of modular concepts in the country is one of great scepticism, but there is very little empirical data to inform the debate. This exploratory study focuses on the relationship between the regulatory goals that underpin the introduction of modular VET systems and the implementation in practice of two VET programmes (elective skills and training building blocks). Our analysis includes official descriptions of training programmes, research papers, evaluation reports and policy papers. We also conducted a total of 12 interviews with experts at policy level and 25 interviews with practitioners. The findings indicate that Germany's approach to implementing modularisation is a hybrid, rather than a radical, approach in which differing degrees of emphasis are evident. The hypothesised goals of flexibilisation and specialisation are broadly achieved, but the goal of individualisation is only partially achieved. In this respect, certification and recognition of modules seem to be the greatest challenges.

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Modularisation; flexibilisation; vocational education and training; apprenticeships; policy implementation; Germany

1. Introduction

Modularisation of general and higher education and of vocational training courses is a major issue across many European countries (CEDEFOP 2015; Schwarz et al. 2015; Gonon 2005), and research into the theoretical aspects of modularisation has made a number of steps forward (Raffe 1994; Brown and Saunders 1995; Ertl 2002; Pilz 2012).

The vocational education and training (VET) sector in particular has seen intensive discussion of modularisation over a number of years. In this article, we focus on Germany. This country is of interest for two reasons.

First, the framework within which the German VET system operates differs substantially from others, such as that in the UK, where modularisation has been widely implemented for some considerable time (Raffe 1994; Raffe, Howieson, and Tinklin 2007).

In Busemeyer and Trampusch's 'varieties of skill formation systems' model (2012), for example, Germany has a 'collective skill formation' approach. That means on the one hand that the relevance of the apprenticeship system (Dual System) in the German VET sector is still very high and the social partners (employers' organisations, chambers of commerce and industry, companies and trade unions) and the government (at national level and in the German federal states) are playing important roles in the design and implementation of the state recognised occupations within the Dual System (BIBB 2011;

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Gonon 2014; Hippach-Schneider, Krause, and Woll 2007; Bosch 2010). As a consequence, the political positions on and reactions to modularisation by the different stakeholders are of interest.

On the other hand, within the apprenticeship system, the role of complex and broad occupational profiles is crucial (Greinert 2007; Fürstenau, Pilz, and Gonon 2014). As a result, modularisation of VET might be much more difficult to implement in Germany than in other countries with a more flexible approach to VET systems (see below).

Second, as a result of a difficult implementation process, Germany has been slow to modularisation its VET system. Although countries such as Scotland, France and the Netherlands began introducing modular structures in the late 1970s and early 1980s, Germany did not start piloting modularisation until the 1990s (CEDEFOP 2015). Therefore the implementation process is still going on and an analysis of this 'work in progress' is of great interest (see below).

It is this area of implementation on which our interest focuses, and this study is based on an 'implementation research' approach. Domitrovich and Greenberg (2000) define 'implementation' as the degree of practical uptake of a measure. Implementation research focusses on the discrepancy between the way a measure has been planned and how it is implemented in practice and is designed to gather information about the extent of uptake in practice and the factors involved. The information then serves as the basis for assessing how effective a measure is (McCoy and Reynolds 1998).

This approach is very common in the field of political economy, for example. Streek and Thelen (2005, 19) discuss '… 'gaps' that exist by design or emerge over time between formal institutions and their actual implementation'. Moreover, in curriculum research, the implementation analysis is frequently used to describe differences between the intended content, competencies, methods etc. and real teaching and learning processes in the classroom. The concept of prescribed and enacted curriculum is widely used in this research field (Bloomer 1997; Edwards, Miller, and Priestley 2009).

As a result, this approach provides a proven theoretical basis for our own research.

As a piece of implementation research, this explorative study attempts to answer two over-arching research questions: which regulatory goals has the introduction of modular VET systems targeted in Germany? And to what extent have these goals been achieved in practice?

Answering these research questions requires a definition of the understanding of the term 'modularisation' in Germany, so we place the existing modularisation system in Germany in a theoretical framework. We then outline the advantages and disadvantages of modularisation, defined as the requirements of the stakeholders. Modularisation may pursue a range of differing goals. In Germany, these are most frequently flexibilisation and individualisation (Pilz 1999; Euler and Severing 2006; Schreier 2010). Flexibilisation through modularisation produces a system of vocational education and training that can adapt rapidly and flexibly to changes in the labour market and evolving skills requirements. Individual and outdated training content can be updated and new content added without the need to reform the entire training system (Pilz 1999; Euler and Severing 2006). Individualisation, by contrast, focuses on trainees' individual needs, reflecting their prior knowledge and individual situation along with their specific skills development goals (Schreier 2010).

We then present a comparative analysis of the defined requirements of the stakeholders and the practical implementation of the approach. We do this by discussing the research methods used for the analysis. The description and discussion of the results of the analysis follow. Finally our conclusions discuss the limitations of the research approach and future developments.

2. Typology of modular approaches

Despite the long-running debate about modularisation of education and training systems, there is still no clear definition of the concept of a 'module' nor any shared understanding of the significance of modular systems, and current definitions take differing perspectives (CEDEFOP 2015). For the purposes of this study, we define modularisation in line with the approach taken by Pilz (2002, 2012), who argues that modules are units of learning that are bounded in both time and content, can be arranged flexibly, and are output-oriented. Modules have highly standardised objectives and content and are individually

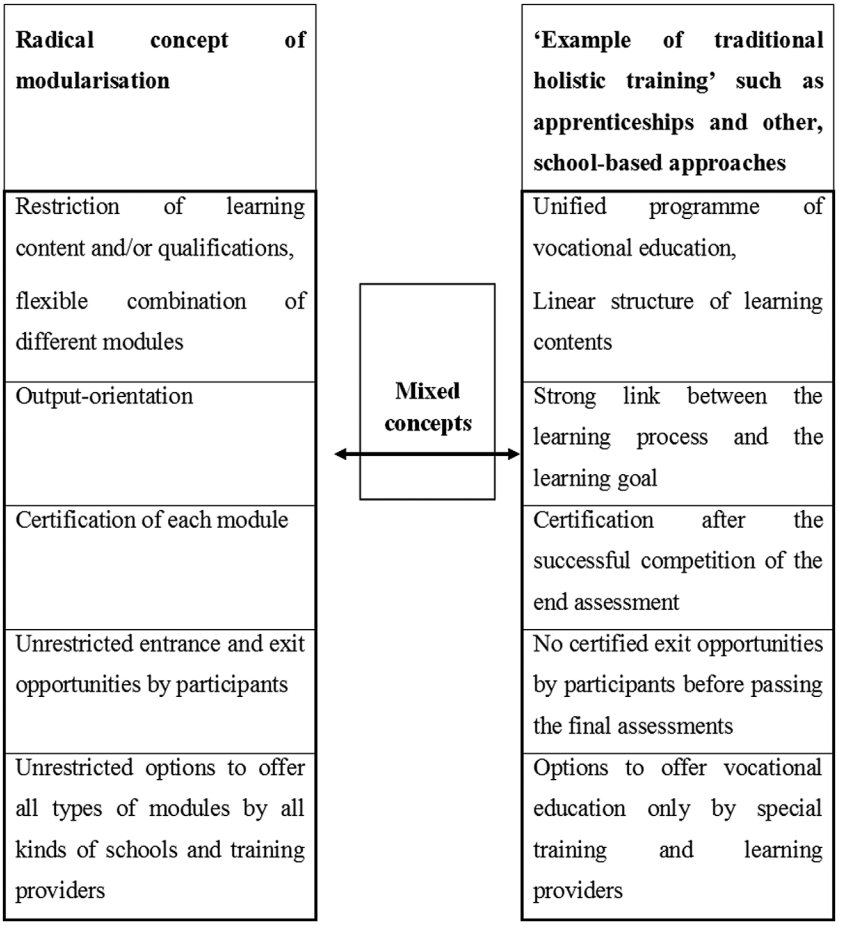

Figure 1. Categorisation of VET programmes. Source: authors' own representation, drawing on Pilz (2002).

assessed and certified. They are learning location-independent, and students on modular programmes can move freely in and out of individual learning units (Pilz 2002).

By comparison, a traditional holistic course of vocational training typically comprises a linear sequence of learning pathways as part of a coherent, over-arching area of study. Learning processes are linked to learning outcomes, so assessment and certification depend on students' participation in formal learning processes. Vocational training programmes of this kind offer a degree of flexibility in how instructors deliver content. Assessment and certification of learning outcomes take place when the course of training has been completed and cover its full duration of the course (Pilz 2002).

An ideal-type construct can, therefore, be developed for both the holistic approach to VET and the radical concept represented by modularisation (see Figure 1).

Both constructs are ideal-typical extreme types representing the two ends of a continuum; between these extremes lies a range of hybrid real forms, which may share some characteristics with one extreme type or the other (see below). This typology, and the resulting continuum, enable the relative strengths of a programme of vocational training to be presented in a structured way: the intensity of the modular characteristics then forms the basis for a robust analysis of whether, and how, these systems achieve their goals.

3. Description and categorisation of the VET programmes analysed

Germany's 'dual' model of VET includes a range of approaches to modularisation. Rulands (2009), for example, identifies six approaches: 'areas of application', 'disciplines and focal points', 'elective skills', 'staged training', 'credit transfer models' and 'occupational groups' (for a more detailed account, see Pilz 2012). A further approach is the 'training building block' approach trialled in 14 training occupations from 2006 as part of the '3. Weg in der Berufsausbildung in NRW' ['The third way in VET in North Rhine-Westphalia'] pilot project (Becker, Bleikertz, and Gehrke 2010) and, from 2008, as part of the JOBSTARTER CONNECT project (BIBB 2010).

This article considers the 'elective skills' approach in the standard dual vocational training system in Germany and the 'training building block' approach adopted as part of the country's JOBSTARTER CONNECT project. These approaches have been selected because they reflect the concept of modularisation that underpins this research: they are the two best-developed forms of modularisation in initial vocational training programmes in Germany (see below) and have both been implemented across regions, so the research does not offer a region-specific view.

Training programmes offering elective skills modules comprise both compulsory and optional modules. The elective skills currently offered in 27 of the 330 or so German training occupations (Schwarz et al. 2015) represent the most radical approach to modularisation within the Dual System and offer flexibilisation in terms of both duration and content at the minimal unit level. Trainees may select and combine a number of different elective skills. For this study, we have selected five training occupations from different sectors: 'biological laboratory technician', 'management assistant for retail services', 'management assistant for insurance and finance', 'hairdresser' and 'butcher'. These occupations were selected to represent a range of crafts, industries and trades. They produce a large number of trainees in relation to the size of the occupational group (BIBB 2013), facilitating a realistic analysis.

Figure 2 illustrates how this works in practice using the example of elective skills in the 'hairdresser' training occupation.

Elective skills are defined by Schwarz and Bretschneider (2013, 4) as a bundle of specific competencies that are bounded in both time and content and may be combined. However, the range and the permitted and disallowed combinations are laid down in the relevant regulations (Schwarz and Bretschneider 2013, 4; Schwarz et al. 2015, 65). A minimum training duration – usually two years – applies irrespective of trainees' existing skills and knowledge (BBiG 2005). This establishes a linkage between learning processes and assessment of learning outcomes. The elective skills form an explicit part of the training regulations and of the framework curriculum and apply across Germany. However, elective skills modules and their content are formulated as openly as possible, so that training companies have a degree of scope to adapt them to the specific company. Analysis of the training and assessment regulations applying to German training occupations involving elective skills indicates that these skills modules are not examined and certified individually (BGBL 2009b; *inter alia*). Some training regulations, such as that for the occupation of 'butcher', take account of elective skills in the final examination, for example, but do not list them individually on the final certificate awarded by the relevant Chamber of Commerce and Industry (BGBL 2005, *inter alia*). As noted above, elective skills are listed in the relevant framework curriculum, where they underpin the in-company component of the training. The learning areas set out in framework curricula for vocational schools, meanwhile, incorporate selected content from the elective skills (see, for example, KMK 2000, 2005). Elective skills are located in both the in-company and classroom components of the training regulations, so they can be acquired independent of learning location.

We now turn our attention to the 'training building block' approach to vocational training in Germany. This approach comes closest to the definition of modularisation underpinning this article but does not form part of the regular dual system of vocational training. It involves breaking down entire training occupations into individual curriculum training building blocks, which are individually certified. The sequence in which trainees complete the blocks is also relatively flexible (see below). This approach to modularisation underpins the German Federal Ministry of Education and Research (BMBF) JOBSTARTER

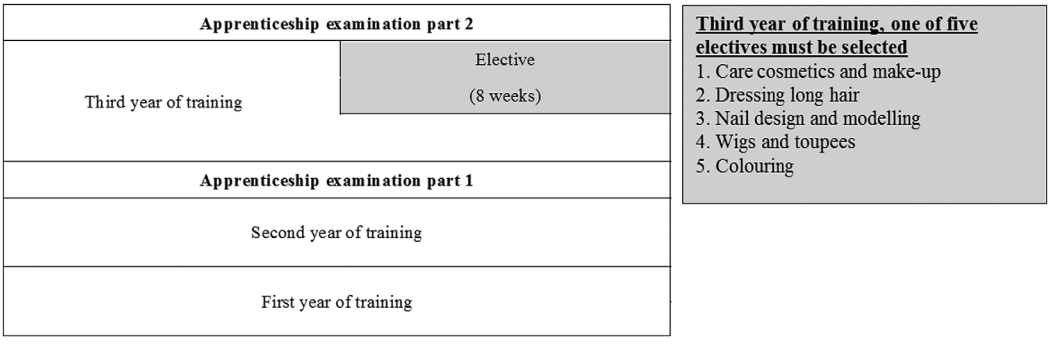

Figure 2. Elective skills in the 'hairdresser' training occupation. Source: based on BGBL (2008).

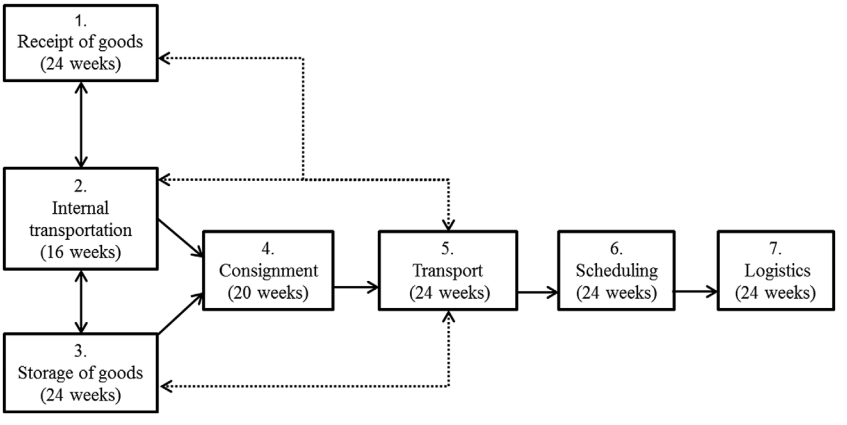

Figure 3. Training building blocks in the 'warehouse logistics operator' training occupation. Source: authors' own representation, drawing on BMBF (2008).

CONNECT programme and, since 2008, has been administered by the Federal Institute for VET, BIBB (BIBB 2010). The programme focusses in general on young school leavers who are finding the transition from school to work difficult or on adults in the process of training. There are currently 40 JOBSTARTER CONNECT projects across Germany trialling the training building block approach in 14 training occupations (BIBB 2010). For this study, we have selected three training occupations, one from industry, one from commerce and one from the craft sector ('warehouse logistics operator', 'management assistant for retail services' and 'motor vehicle mechatronics technician'). Figure 3 illustrates the training building blocks involved in the 'warehouse logistics operator' training occupation.

Training building blocks are learning units that are bounded in duration and content and may, in some cases, be completed in a variable sequence. Typical working or commercial processes within the individual training occupation are used to tailor the training building blocks, for example, the correct warehousing of goods in the 'warehouse logistics operator' occupation (BMBF 2008). The content of the training building blocks is designed to be acquired in a skill-oriented way, which may be achieved, for example, though project teaching (e.g. Frank 2009). Successful completion of a training building block is, however, linked to participation in training and, hence, to a formal and structured learning process. Clear rules govern the skills to be acquired for each training building block (Frank and Grunwald 2008; *inter alia*), and each training building block is documented and accredited by the training provider. The authority responsible for accrediting the training building blocks to a standard training occupation (usually a Chamber of Commerce and Industry) ultimately decides whether the documentation is acceptable (BIBB 2014b).

There are no binding regulations regarding access to this programme of vocational training, and trainees may exit the programme when they have successfully completed the course of training or transfer into the Dual System of formal vocational training. The programme may be provided by vocational schools, private training providers or training companies (JOBSTARTER 2014).

These approaches may be categorised as follows in the framework set out above (Tables 1 and 2).

4. Current state of research and research design

The literature in the German context is dominated by concept and position papers (e.g. Euler and Severing 2006; Drexel 2008), with virtually no empirical data available. One exception is the evaluation of a pilot on top-up training for adults through modular schemes (Davids 1998). There is also recent evaluation of the implementation of 'training building blocks' (Ekert, Ornig, and Grebe 2013; Ekert and Grebe 2014): these findings are described in detail below, as they have a direct relevance to the training programme considered in our research.

We used relevant documentation to describe the objectives of the training programmes under consideration: these included official descriptions of the training programmes, such as training regulations, prospectuses and project reports (BGBL 2009a; *inter alia*), research papers of various kinds, including research studies and evaluation reports (e.g. Ekert, Ornig, and Grebe 2013), and position papers produced by relevant stakeholders, such as employers' associations and trade unions (e.g. DHKT 2013).

Expert interviews were conducted using a semi-standardised interview guide at both training policy management level and implementation level. These were used to analyse implementation of the intended objectives.

At regulatory level, we consulted employers' associations and trade unions in the relevant sectors, state organisations, etc. Individuals within these organisations and associations with responsibility for vocational training were identified and recruited as expert interviewees. The interviews had two aims: first, we consulted these experts to cross-check with them the regulatory objectives of the programmes we had derived from our documentary research; and second, we asked about their own perceptions and further comments on the aims and objectives of modularisation.

At operational level, the survey targeted individuals responsible for the administrative implementation of these VET programmes. This group included directors of training within companies, course leaders in vocational schools, and section heads from private training organisations. This group of experts had wide-ranging experience of the administrative design of training programmes and the practical problems associated with it. In selecting these individuals, we drew on recommendations from training experts and our own contacts with a view to identifying contacts with exactly the right skills and position.

In total, 12 interviews were conducted with experts at policy level and 25 with practitioners. At policy level, interviews were conducted with one or two professionals from each training occupation. At practitioner level, at least two interviews were conducted with professional from each training occupation; in most cases, we conducted three or more interviews. Interviews lasted an hour on average and, because training policy is a controversial issue, most were not recorded digitally. Key statements by the interviewees were transcribed verbatim by two researchers in each case and their content processed and documented (Berg and Lune 2011).

5. Findings

In the following section, we present each of the hypothesised goals derived from our documentary analysis. We also present the findings relating to the practical implementation of modular programmes and the factors involved in achievement or non-achievement of the goals set.

Table 1. Categorisation of elective skills.

Radical concept of modularisation	Orientation on the traditional holistic training	Combination of both approaches	Orientation on the radical concept of modularisation	'Example of traditional holistic training' such as apprenticeships and other, school-based approaches
Restriction of learning content and/or qualifications, flexible combination of different modules		X		Unified programme of vocational education, Linear structure of learning contents
Output-orientation			X	Strong link between the learning process and the learning goal
Certification of each module			X	Certification after the successful competition of the end assessment
Unrestricted entrance and exit opportunities by participants			X	No certified exit opportunities by participants before passing the final assessments
Unrestricted options to offer all types of modules by all kinds of schools and training providers			X	Options to offer vocational education only by special training and learning providers

Source: Authors' own representation.

Table 2. Categorisation of training building blocks.

Radical concept of modularisation	Orientation on the traditional holistic training	Combination of both approaches	Orientation on the radical concept of modularisation	'Example of traditional holistic training' such as apprenticeships and other, school-based approaches
Restriction of learning content and/or qualifications, flexible combination of different modules		X		Unified programme of vocational education, Linear structure of learning contents
Output-orientation		X		Strong link between the learning process and the learning goal
Certification of each module		X		Certification after the successful competition of the end assessment
Unrestricted entrance and exit opportunities by participants		X		No certified exit opportunities by participants before passing the final assessments
Unrestricted options to offer all types of modules by all kinds of schools and training providers	X			Options to offer vocational education only by special training and learning providers

Source: Authors' own representation.

5.1. Hypothesised goals of elective skills

Documentary analysis for Germany shows that the scope for flexibilisation within a single training occupation is crucial to programme design. Elective skills are intended to enable training companies to combine different areas of curriculum content in line with their own requirements (Schwarz et al. 2015, 66). Both large and smaller companies with a specific activity profile are, therefore, able to provide vocational training that meets their own needs but also to reflect the over-arching requirements of the occupational profile laid down by law (Schwarz et al. 2015).

Elective skills usually constitute no more than one third of the overall training profile. Experts at regulatory level confirm that they are intended to offer the flexibilisation emphasised in the relevant documentation. They also report that elective skills prevent new 'special occupations' being created within the state-regulated vocational training system, avoiding fragmentation of the Dual System: 'Specialisation is covered by the elective skills' (11th interview on elective skills (E11)). Moreover, modules that have become outdated because of technical or organisational changes can simply be replaced by more up-to-date ones without the need to completely revise the training regulations. The basic structure and, therefore, the requirements of training companies for particular training content remain unaffected by these partial changes: 'As a matter of principle, a training occupation must meet the requirements of the employers even without the elective skills, which serve simply to offer a degree of vocational specialism' (E13).

5.2. Hypothesised goals of training building blocks

The aim of VET programmes comprising training building blocks is to make it easier for young people to achieve the transition into Germany's formal Dual System and to integrate this target group in the labour market by means of a training programme geared to their specific needs (BIBB 2010).

These fields of application demonstrate that the target group for this programme is twofold: first, 'former applicants' (young people who have, at some point, already applied unsuccessfully for a training place in the Dual System); and second, young adults with no vocational qualifications. The training building block approach is designed to make the skills these groups acquire transparent to the training and labour markets and, ultimately, to facilitate accreditation of existing skills to a standard course of training in line with German legislation on vocational and craft training (BIBB 2010).

Training policy experts confirm the central goal of making it easier for trainees to move into the Dual System: 'The training building blocks that form part of preparation for employment make the content transparent and promote acceptance of pre-vocational qualifications' (1st interview on the training building blocks (B1)). Moreover, the existence of manageable content and time-related learning goals may have a positive impact on the motivation of trainees, who see completing individual training building blocks as achievement of a stage in their training. This motivational effect is also endorsed by experts at operational level (see similar findings by Ekert, Ornig, and Grebe 2013, 47 and BIBB 2014a, 40).

5.3. Implementation of the goals of elective skills: facilitating factors and obstacles

At operational level, the findings on actual implementation of elective skills and the associated goal achievement are multifaceted.

With regard to achievement of goals, most of those surveyed believed that the intended goals of elective skills (see above) were achievable. In particular, the companies told us that trainees confirmed the positive motivational effect of manageable learning units with small assessment components.

Companies, too, confirmed that individual goals were achieved in practice. One head of training indicated that while not all elective skills met the needs of the training companies, the range of such skills nevertheless met most of their priorities. For example, one trainer from the insurance and finance sector commented that elective skills enabled a goal-oriented approach to training: 'Before the training regulations were revised, training content tended to focus largely on on-site activities, whereas 80% of

our apprentices work off-site in agencies. The introduction of an elective skills module entitled 'Working in an agency' has enabled our off-site operations to provide more targeted training' (E1).

At operational level, those surveyed also acknowledged the potential for specialisation that elective skills modules offer: 'The trend is towards companies specialising in services, and these are covered by the elective skills' (E3). Nevertheless, some respondents were critical of this trend. One interviewee, who trains butchery trainees, told us 'Apprentices are being boxed into ever smaller compartments' (E4). He saw the elective skill approach as involving specialisation that actually restricted apprentices' mobility and employability: 'There aren't many butchers' shops that can employ an apprentice with 'product packaging' as an elective skills module: they can only work in industry' (E4). This statement was put in context by another, very different, statement from a trainer in the insurance and finance sector, who argued that in general, elective skills should not be included on the final certificate. He did not see this as restricting mobility, arguing that 'In my experience, the elective skills have no influence on whether, and where, a trainee can find a job outside their training company' (E1).

One further interviewee at operational level noted that organisational obstacles made it difficult for training companies to shape the training they offered. For example some craft guilds find it difficult to recruit expert assessors in all areas for the final examination. In some cases, training companies have to limit what they offer to the most popular elective skills for which the guilds are able to provide expert assessors. One company representative told us, 'In our town, companies are recommended by the relevant craft guild to choose the 'Sales' and 'Production' elective skills because it is difficult to find assessors for other areas.' (E4).

Interviews with training experts at operational level show that it is not possible to restrict the content and duration of elective skills, as was originally planned (see above), because of the framework and the way the modules are embedded in specific situations: 'You can't teach the unit as it is: it has too many facets' (E9). At operational level, most training companies do not follow the timing of the elective skills set out in the training regulations. The reason is that in many cases, the content is needed right at the beginning of the training so that the apprentices master routine commercial and training processes. Content also has to be adapted to the specific needs of companies (Schwarz et al. 2015, 73, found much the same).

The interviews also demonstrated that training for and acquisition of elective skills inside the Dual System is primarily achieved within training companies; it is rare for vocational schools to integrate selected elective skills into the curricular learning areas.

All interviewees at the operational level consistently referred to the key positive impact of elective skills: the opportunity to reflect the interests, talents and aptitudes of trainees, they said, was a great advantage, both in theory and in practice.

5.4. Implementation of the goals of training building blocks: facilitating factors and obstacles

Interviews with those responsible at operational level showed, that in practice, it is not possible to sequence training building blocks flexibly, as was originally planned and set out in the documentation. Flexible sequencing would require excessive coordination and staff time: 'The description sets out two options, but in practice, we follow the sequence indicated by the numbering of the training building blocks. If you choose a different sequence, it's impossible to organise' (B5).

With regard to output orientation, interviewees from the practice side indicated that apprentices can acquire a training building block only by participating in learning processes in a partner training institution. Solely output-oriented learning is not implemented at operational level and not considered valid. But also here, trainees confirmed the positive motivational effect of manageable learning units with little assessment components (see also similar findings by Ekert, Ornig, and Grebe 2013, 47; BIBB 2014a, 40).

The findings show also that training providers do not adopt a standard approach to teaching or documenting training building blocks. Training building blocks are not widely standardised and are not

transparent to companies. Moreover, there is no mandatory process for their certification. One expert at operational level commented: 'Each training building block is certified. The certificate is governed by civil law and may differ from one training provider to another' (B2). While training building blocks are individually documented, recognition by Chambers of Commerce and Industry and companies is subject to regional regulations. Levels of acceptance of their potential for accreditation towards a subsequent course within regular vocational training programme therefore vary from region to region. In some regions, companies and Chambers of Commerce and Industry support the training building block approach; in others, there is considerable scepticism among training companies ('In some specialist associations, companies are actually warned against training building blocks' [B4]). The alleged lack of standardisation, the inherent risk of fragmentation of training content, and a lack of transparency in relation to certification of training building blocks is reducing the confidence that some training companies have in the skills apprentices acquire during their training.

The findings from our expert interviews confirm that training building blocks may be offered both by private training institutions and vocational schools and by individual companies. The training programme they underpin is, therefore, learning location-independent, as it was planned to be.

Despite the difficulties with implementing the training building block, interviewees at operational level remain committed to the concept, because training building blocks enable disadvantaged groups to obtain vocational training in stages.

> Most [participants] have a difficult social background and a low educational level, with either the lower-level secondary school qualification or no qualifications at all. Their motivation is poor but often improves as they achieve small successes in individual training building blocks. (B1)

6. Discussion of findings

In this section, against the background of the general discussion of modularisation in the literature, we reflect on why the aims of the modularisation approaches analysed here are or are not achieved, and the obstacles they encounter.

We begin by again stressing that the categorisation of the modular programmes analysed here demonstrates that Germany is implementing not radical approaches to modularisation but hybrids, with differing degrees of emphasis. As a result, the opportunities and risks represented by these approaches can be assessed only against the background of their specific characteristics and significance within the relevant VET system.

In the German context, it is clear that the aim of elective skills – to give training companies within the mainstream training environment scope to tailor training more closely to their own needs – is being met in practice. The modular nature of elective skills relates particularly to the strengths of flexibility and specialisation set out in the VET literature (Pilz 1999; Euler and Severing 2006). One positive secondary effect is that elective skills also acknowledge the interests and aptitudes of trainees (individualisation).

The JOBSTARTER CONNECT project uses training building blocks outside the standard Dual System and, by contrast with the elective skill approach, is oriented primarily to the needs of trainees, not companies. Its main aim is, therefore, to produce 'individualisation', a theme widely debated in the context of modularisation (Schreier 2010). The key objective is eventually to integrate trainees into a standard course of training in the Dual System. Breaking up an occupational profile into training building blocks is intended to facilitate enhanced learning outcomes, improve the transparency of training measures and, ultimately, make it easier to accredit the skills acquired to a standard course of training. The aim here is to achieve the potential for regulation and transparency stressed in the literature (Eberhardt 2013), which would accelerate the accreditation of training building blocks within the conventional VET system. In practice, however, the low level of standardisation in the teaching and documentation of the training building blocks means that this aim is only partially met. External evaluation of the JOBSTARTER CONNECT project draws a similar conclusion:

> Just four of the 38 projects issued certificates that bore a Chamber of Commerce and Industry stamp or had been issued by a Chamber itself. Statements by the young people suggest that those to whom these certificates are

> directed – in particular, companies – are not yet sufficiently familiar with them and that, as a result, the certificates confer no advantage in the recruitment process. As a result, it is currently rare for elements of training already acquired to be accepted over any period of time and, in particular, to be accredited. (Ekert, Ornig, and Grebe 2013, 5)

Some experts are strongly critical of trainees' freedom to drop out of a training measure before completion, citing the risk of partial skill development and partial qualification – another theme in the literature (Drexel 2008; *inter alia*). The criticism voiced by some trainers of the over-specialisation achieved as a result of elective skills is also reflected in the literature (see, for example, Pilz 2009). The study by Schwarz et al. (2015, 75) shows that this criticism is made predominantly by traditional craft companies and the unions.

Finally our results show clearly that the provision of elective skills is, in some cases, limited by organisational and resource-based difficulties. In their work, Schwarz et al. (2015) draw a similar conclusion: 'The broad potential for combining elective skills goes unused in practice because, over time, a certain arrangement of elective skills is adopted for reasons related to the cost of assessment and company organisation […]' (Schwarz et al. 2015, 71).

Overall, both the programmes considered may be seen as a more moderate form of modularisation. Key goals in content terms are flexibilisation, with the option to specialise, and individualisation. In the case of elective skills programmes, flexibilisation is the more important element; in the case of training building blocks, by contrast, the overarching intention is to secure greater individualisation in skills development. Our findings show that flexibilisation and specialisation are of particular interest to employers and chambers of trade and industry; trade unions are more cautious, because they do not wish to jeopardise the labour market value of a complex skill set gained in the Dual System. The focus on individualisation is the result primarily of pressure from state stakeholders, as the training building blocks approach makes clear. In this programme, the main priority is to develop tailored provision for young people and adults who find it difficult to make the transition from education to employment (see above). The current, largely monolithic, Dual System, with its fixed duration, strictly regulated entry and exit points, largely linear curricula and learning pathways, and final examination (see Figure 1), is simply unsuitable for many in this group.

A number of special factors applied to implementation of the hypothesised goals. Our data show, however, that these are the result not of differing perspectives on the part of our practical experts but of differing dimensions in the design of modular programmes. More differentiated consideration sheds light on these special factors. It is important to distinguish between internally relevant elements (those that are relevant within a specific programme of training) and externally relevant elements (those that influence other areas of the education and training or labour market).

Internally relevant elements are generally easier to implement. In the programmes analysed, we saw that it was possible to achieve flexibilisation in the design of the curriculum as well as the option to specialise. This primarily benefits employers, but the existence of options may also produce higher motivation among learners.

Externally relevant elements, by contrast, are more difficult to implement. In particular, it has proved difficult or impossible in many cases to achieve specific certification of particular bundles of skills (part-certification of an entire programme). Part-certification plays no part in the elective skills programme, since only the final examination – and the overall dual qualification – is relevant. In the case of training building blocks, most training providers at practice level would like part-certification, although many chambers of industry and commerce do not offer it. The reason may be that the chambers fear losing their monopoly over the final examination and over award of final certificates within the Dual System.

Recognition of part-qualifications is also currently very limited, both within the education system and in the employment system (see also Eberhardt 2013). Training providers are still unsure whether part-qualifications acquired in learning contexts outside conventional training schemes are of acceptable quality and valid for further training. As a result, in Germany at least, there is still a perception that only complete training courses and the certificates awarded on their completion are valid. The

externally relevant element of free entry to/exit from programmes of training was also found not to be achievable in practice.

In the light of implementation research, this gives rise to some crucial consequences. The programmes analysed are constructed differently in terms of the weighting of both internally and externally relevant elements, so there are major differences in implementation. Elective skills programmes focus predominantly on internally relevant elements but have little importance in terms of the framework and external impact of the Dual System, so it is easier here to implement the goals set. A training building blocks programme, however, also has externally relevant elements that are a key to achieving the individualisation that is so important with training building blocks. This model is, therefore, difficult to implement.

7. Conclusions

As noted above, Germany's progress towards modularisation is at a much earlier stage than that of other countries and is still incomplete. It is, therefore, impossible to draw definitive conclusions, and we shall restrict ourselves here to pointers to future developments.

We should also point out at this stage that our research approach has some limitations. Future approaches should survey a greater number of stakeholders to gain a wider picture of the implementation of modular approaches to training. Moreover, it would be possible to consider further state-recognised occupations under the Dual System within an elective skills programme, so as to identify more precisely differences that may exist between sectors of the economy (e.g. manufacturing, craft and services sectors).

Other modular approaches in Germany could also be included in future research. For example, the Federal Employment Agency offers modular qualifications for the unemployed and a special modular approach for disadvantaged young people (an approach known as the 'third way') (Ekert et al. 2013). Moreover, a longitudinal survey of the transition 'biographies' of individuals with modular qualifications could shed light on the success of the approach and any problems arising. In training institutions, meanwhile, the concrete implementation of modular structures at learning process level could, for example, be observed, with a view to creating a more detailed picture of curriculum implementation.

Despite these limitations, it is clear that the German vocational training system requires greater flexibilisation to enable it to meet current challenges, including the increasing specialisation required within manufacturing and the growing diversity of those undergoing training (Kutscha 2003). Given the dominance of the Dual System, with its range of stakeholders and its principle of corporatism, which achieves a balance between conflicting interests (Busemeyer and Trampusch 2012; Busemeyer and Schlicht-Schmalzle 2014), it is likely that further steps towards modularisation will currently only be possible within an 'embedded evolutionary' approach. The structure of the Dual System and the way courses are designed and implemented are firmly rooted within the stakeholders, and there is widespread social recognition of the achievements of the Dual System (Greinert 2007; Bosch 2010; Fürstenau, Pilz, and Gonon 2014), so only a gradual – evolutionary – process of change will achieve results. The elective skills approach in particular – shown to be a more moderate form of modularisation (see above) – has already embarked on this path and could be rolled out to other occupational profiles and also gain importance within individual occupational profiles in future.

At the same time, such an approach means that the Dual System, and, in particular, the internally relevant element of flexibilisation (see above), underpin thinking. It is, however, advisable to avoid special approaches to promoting modularisation outside the Dual System: the German labour market's recognition of a course of training is regulated predominantly by the Dual System, and other vocational training qualifications (at sub-academic level) are not widely accepted outside a few occupational areas, such as the care sector (Hippach-Schneider, Krause, and Woll 2007). This lack of acceptance and recognition also applies to part-qualifications (Ekert, Ornig, and Grebe 2013), pointing again to the difficulty of implementing externally relevant elements (see above).

The postulated long-term, gradual change within Germany's vocational training system is most likely to produce the necessary insight into change and, moreover, acceptance among the various stakeholders. Streek and Thelen (2005) argue this when they discuss a reduction of the 'gaps' alluded to above between intended goals and actual implementation through adaptation not only of policy activity but also within the institutions involved.

Disclosure statement

No potential conflict of interest was reported by the authors.

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References

BBiG (Berufsbildungsgesetz). 2005. *§ 7 Anrechnung beruflicher Vorbildung auf die Ausbildungszeit* [Recognition of Vocational Prio-educating for the Training Duration]. Bundesgesetzblatt Teil I. Accessed October 07, 2016. http://www.gesetze-im-internet.de/bundesrecht/bbig_2005/gesamt.pdf

Becker, C., T. Bleikertz, and J. Gehrke, J. 2010. *Evaluation des Pilotprojektes "3. Weg in der Berufsausbildung in NRW". Abschlussbericht* [Evaluation of the Pilotstudy "3. Weg in der Berufsausbildung in NRW". Final Report]. Berlin: GIB. Accessed April 29, 2016. http://www.gib.nrw.de/service/downloads/abschlussbericht-evaluation-3-weg?darstellungsart=themen

Berg, B., and H. Lune. 2011. *Qualitative Research Methods for the Social Sciences*. 8th ed. San Francisco: Peachpit Press.

BGBL (Bundesgesetzblatt). 2005. *Verordnung über die Berufsausbildung zum Fleischer zur Fleischerin vom 23. März 2005* [Regulation for the Vocational Training of Butcher from March 23 2005]. Accessed October 07, 2016. https://www.gesetze-im-internet.de/bundesrecht/fleiausbv_2005/gesamt.pdf

BGBL (Bundesgesetzblatt). 2008. *Verordnung über die Berufsausbildung zum Friseur/zur Friseurin vom 21. Mai 2008* [Regulation for the Vocational Training of Hairdresser from May 21 2008]. Accessed October 07, 2016. https://www.gesetze-im-internet.de/bundesrecht/friseurausbv_2008/gesamt.pdf

BGBL (Bundesgesetzblatt). 2009a. *Verordnung über die Berufsbildung im Laborbereich Chemie, Biologie und Lack vom 25. Juni 2009* [Regulation for the Vocational Training in the Laboratory Field Chemisty, Biology and Varnish from June 25 2009]. Accessed October 07, 2016. https://www.gesetze-im-internet.de/bundesrecht/chembiolackausbv_2009/gesamt.pdf

BGBL (Bundesgesetzblatt). 2009b. *Verordnung über die Erprobung abweichender Ausbildungs-und Prüfungsbestimmungen in der Berufsausbildung im Einzelhandel in dem Ausbildungsberuf Kaufmann im Einzelhandel Kauffrau im Einzelhandel vom 24. März 2009* [Regulation for the Testing of Deviating Vocational Training and Examination Regulations in the Vocational Occupation of Retail Service From March 24 2009]. Accessed October 07, 2016. https://www.bibb.de/tools/berufesuche/index.php/regulation/fsaskjh.pdf

BIBB (Bundesinstitut für Berufsbildung). 2010. *JOBSTARTER CONNECT. Ausbildungsbausteine in der Praxis* [JOBSTARTER CONNECT. Training Building Blocks in the Practice]. Bielefeld: Bertelsmann.

BIBB (Bundesinstitut für Berufsbildung). 2011. *Vocational Training Regulations and the Process behind Them*. Bonn: BIBB.

BIBB (Bundesinstitut für Berufsbildung). 2013. *VET Data Report Germany 2013.* Accessed August 2, 2016. https://datenreport.bibb.de/media2013/DR2013_engl._Screen.pdf

BIBB (Bundesinstitut für Berufsbildung). 2014a. *Rangliste 2014 der Ausbildungsberufe nach Neuabschlüssen in Deutschland* [Ranking of the Vocational Occupations in Order of New Contracts in Germany in 2014]. Accessed April 29, 2016. http://www.bibb.de/dokumente/pdf/naa309_2014_Tab67_0bund.pdf

BIBB (Bundesinstitut für Berufsbildung). 2014b. *Mit Ausbildungsbausteinen zum Berufsabschluss. JOBSTARTER PRAXIS – Band 8* [With Training Building Blocks to a Vocational Degree. JOBSTARTER PRAXIS – Volume 8]. Bonn: Bertelsmann Verlag.

Bloomer, M. 1997. *Curriculum Making in Post-16 Education: The Social Conditions of Studentship*. London: Routledge.

BMBF (Bundesministerium für Bildung und Forschung). 2008. *Ausbildungsbausteine für die Berufsausbildung zum/zur Fachlagerist/-in* [Training Building Blocks for the Vocational Training of Warehouse Logistic]. Accessed April 29, 2016. http://www.jobstarter.de/media/content/Ausbildungsbausteine_Fachlagerist.pdf

Bosch, G. 2010. "The Revitalisation of the Dual System in Germany." In *Vocational Training: International Perspectives*, edited by G. Bosch and J. Charest, 136–161. New York: Routledge.

Brown, Sally, and D. Saunders. 1995. "The Challenges of Modularization." *Innovations in Education and Training International* 32 (2): 96–105.

Busemeyer, M., and R. Schlicht-Schmalzle. 2014. "Partisan Power, Economic Coordination and Variations in Vocational Training Systems in Europe." *European Journal of Industrial Relations* 20 (1): 55–71.

Busemeyer, M., and C. Trampusch. 2012. "The Comparative Political Economy of Collective Skill Formation." In *The Political Economy of Collective Skill Formation*, edited by M. Busemeyer and C. Trampusch, 3–28. Oxford: Oxford University Press.

CEDEFOP (European Centre for the Development of Vocational Training). 2015. *The Role of Modularisation and Unitisation in Vocational Education and Training (Working Paper No. 26)*. Luxembourg: Publications Office.

Davids, S., ed. 1998. *Modul für Modul zum Berufsabschluß –Berufsbegleitende Nachqualifizierung zwischen Flexibilität und Qualitätssicherung (Berichte zur beruflichen Bildung, H. 216)* [Module for Module to a Vocational Degree – In-Service Post-Qualification between Flexibilisation and Quality Assurance (Reports on the Vocational Education, No. 216)]. Bielefeld: Bertelsmann.

DHKT (Deutscher Handwerkskammertag). 2013. *Ausbildungsbausteine – (k)eine Option für den Übergangsbereich? Beschlussfassung des DHKT-Ausschusses Berufsbildung* [Training Buildung Blocks – (no) Option for the Transition Area? Resolution of the DHKT – Committee Vocational Education and Training]. Accessed April 29, 2016. http://www.zdh.de/fileadmin/user_upload/themen/Bildung/Bildungspolitik/Positionspapiere/2013-04_Positionspapier_Ausbildungsbausteine.pdf

Domitrovich, C. E., and M. T. Greenberg. 2000. "The Study of Implementation: Current Findings from Effective Programs That Prevent Mental Disorders in School-aged Children." *Journal of Educational and Psychological Consultation* 11 (2): 193–221.

Drexel, I. 2008. "Berufsprinzip oder Modulprinzip? Zur künftigen Struktur beruflicher Bildung in Deutschland [the Principle of Occupation or the Principle of Module? About the Structure of Vocational Training and Education in the Future of Germany]." In *Die Berufskollegs stärken heisst die berufliche Bildung zu stärken: 10 Jahre Berufskolleg in NRW – ein Erfolgsmodell auf dem zur Eigenständigkeit. Dokumentation zum Berufsbildungskongress des vlbs 2007,* edited by Verband der Lehrinnen und Lehrer an Berufskollegs in NRW, 118–134. Krefeld: van Acken.

Eberhardt, C., ed. 2013. *Implementing ECVET: Crediting, Recognition and Transfer of Learning Outcomes between European Target Stipulations and National System Conditions (BIBB Discussion Paper No. 146)*. Bonn: BIBB.

Edwards, R., K. Miller, and M. Priestley. 2009. "Curriculum-making in School and College: The Case of Hospitality." *Curriculum Journal* 20 (1): 27–42.

Ekert, S., and T. Grebe. 2014. *Abschlussbericht. Externe Evaluation von JOBSTARTER CONNECT* [Final Report. External Evaluation of JOBSTARTER CONNECT]. Berlin: INTERVAL.

Ekert, S., N. Ornig, and T. Grebe. 2013. *6. Zwischenbericht "Externe Evaluation von JOBSTARTER CONNECT"*[6th Interim Report "External Evaluation of JOBSTARTER CONNECT"]. Berlin: INTERVAL.

Ekert, S., N. Ornig, K. Otto, and J. Sommer. 2013. *Ergebnisse des Erfahrungsaustauschs der Initiativen zur Erprobung von Ansätzen zur Anrechnung und Anerkennung in der beruflichen Bildung [Results of the Experience Exchange of the Intiation for the Testing of Approaches to Recognising in the Voactional Education and Training]*. Berlin: INTERVAL.

Ertl, H. 2002. *The Role of EU Programmes and Approaches to Modularisation in Vocational Education. Fragmentation or Integration?*. München: Utz.

Euler, D., and E. Severing. 2006. *Flexible Ausbildungswege in der Berufsbildung (Ziele, Modelle, Maßnahmen)* [Flexible Training Pathway in the Vocation Education and Training (Aims, Models and Measures). Bielefeld: Bertelsmann.

Frank, I. 2009. "Berufsbildung in Deutschland – Aktuelle Entwicklungen und strukturelle Herausforderungen [Vocational Education and Training in Germany – Recent Developments and Structural Challenges]." *Berufs-Und Wirtschaftspädagogik* 38 (3): 5–8.

Frank, I., and J.-G. Grunwald. 2008. "Ausbildungsbausteine – ein Beitrag zur Weiterentwicklung der dualen Berufsausbildung [Training Building Blocks – A Contribution for the Further Development of the Dual Vocational Training]." *Berufs- Und Wirtschaftspädagogik* 37 (4): 13–17.

Fürstenau, B., M. Pilz, and P. Gonon. 2014. "The Dual System of Vocational Education and Training in Germany – What Can Be Learnt about Education for (Other) Professions." In *International Handbook of Research in Professional and Practice-Based Learning*, edited by S. Billett, C. Harteis and H. Gruber, 427–460. Dordrecht: Springer.

Gonon, P. 2005. "Die Modularisierung der beruflichen Bildung –Motivlagen und Umsetzungen. [Modularisation in the Vocational Education and Training – Motivations and Implementations]" In *Neue Lernkulturen in Europa? Prozesse, Positionen, Perspektiven*, edited by B. Niemeyer, 60-76. Wiesbaden: Leske + Budrich.

Gonon, P. 2014. "What Makes the Dual System to a Dual System? A New Attempt to Define VET through a Governance Approach". *Berufs-und Wirtschaftspädagogik online* 25. Accessed April 29, 2016. http://www.bwpat.de/ausgabe25/gonon_bwpat25.pdf

Greinert, W.-D. 2007. "The German Philosophy of Vocational Education." In *Vocational Education: International Approaches, Developments and Systems*, edited by L. Clarke and C. Winch, 49–61. New York: Routledge.

Hippach-Schneider, U., M. Krause, and C. Woll. 2007. *Vocational Education and Training in Germany-Short Description*. Luxembourg: Office for Official Publications of the European Communities (Cedefop Panorama series; 138).

JOBSTARTER. 2014. JOBSTARTER-Projektlandkarte [JOBSTARTER CONNECT-project Map]. Accessed April 29, 2016. http://www.jobstarter.de/de/projektlandkarte-1157.php?F=0&M=38&TF=16

KMK (Kultusministerkonferenz). 2000. *Rahmenlehrplan für den Ausbildungsberuf Biologielaborant/Biologielaborantin* [Framework Curriculum for the Vocational Occupation of Biological Laboratory Assistant]. (Beschluss der Kultusministerkonferenz vom 13.01.2000). Accessed October 0 7, 2016. http://www.kmk.org/fileadmin/Dateien/pdf/Bildung/BeruflicheBildung/rlp/Chemielaborant00-01-13idF05-03-18.pdf

KMK (Kultusministerkonferenz). 2005. *Rahmenlehrplan Für Den Ausbildungsberuf Fleischer/Fleischerin* [Framework curriculum for the vocational occupation of buther]. (Beschluss der Kultusministerkonferenz vom 18.03.2005).

Kutscha, G. 2003. "General Education and Initial Vocational Training in Germany? The 'Flexicurity Route' of Modernization under Aspects of Flexibility, Transferability and Mobility." In *Milestones of Vocational Education and Occupational Education and Training-Vol. 2: Institutional Perspectives of Vocational and Occupational Education and Training*, edited by F. Achtenhagen, and G. E. John, 17–40. Bielefeld: Bertelsmann.

McCoy, A. R., and A. J. Reynolds. 1998. "Evaluating Implementation." In *Advances in Educational Productivity*, edited by A. J. Reynolds and H. J. Walberg, 117–133. Stanford: JAI Press.

Pilz, M. 1999. *Modulare Strukturen in der beruflichen Bildung – Eine Alternative für Deutschland? – Eine explorative Studie am Beispiel des schottischen Modulsystems* [Modular Structures in the Vocational Education and Training – An Alternative for Germany? – The Scottish Module System as an Example for an Explorative Study]. Markt Schwaben: Eusl. (Wirtschaftspädagogisches Forum, Bd. 9).

Pilz, M. 2002. "The Contrast between Modular and Occupational Approaches to Modernising Vocational Training." *European Journal of Vocational Training* 25: 27–33.

Pilz, M. 2009. "Vier Länder, vier Modularisierungsansätze – Ein Vergleich und die Ableitung perspektivischer Konsequenzen [Four Countries, Four Approaches of Modularisation – A Comparison and the Deduction of Perspective Conseqeunces]." In *Modularisierungsansätze in der Berufsbildung - Deutschland, Österreich, Schweiz sowie Großbritannien im Vergleich*, edited by M. Pilz, 153–187. Bielefeld: Bertelsmann.

Pilz, M. 2012. "Modularisation of Vocational Training in Germany, Austria and Switzerland: Parallels and Disparities in a Modernisation Process." *Journal of Vocational Education and Training* 64 (2): 169–183.

Raffe, D. 1994. "Modular Strategies for Overcoming Academic/Vocational Divisions: Issues Arising from the Scottish Experience." *Journal of Education Policy* 9 (2): 141–154.

Raffe, D., C. Howieson, and T. Tinklin. 2007. "The Impact of a Unified Curriculum and Qualifications System: The Higher Still Reform of Post-16 Education in Scotland." *British Educational Research Journal* 33 (4): 479–508.

Rulands, H. 2009. "Praxis Deutschland: Flexibilisierung und Differenzierung in der Berufsausbildung [Pracitce Germany. Flexibilisation and Differentiation in the Vocational Education and Training]." In *Modularisierungsansätze in der Berufsbildung – Deutschland, Österreich, Schweiz sowie Großbritannien im Vergleich*, edited by M. Pilz, 35-38. Bielefeld: Bertelsmann.

Schreier, C. 2010. *Modularisierung in der beruflichen Bildung? Ansätze aus der Benachteiligtenförderung in ausgewählten europäischen Ländern* [Modularisation in the Vocational Education and Training? Approaches from the Support of Disadvantaged]. Paderborn: Eusl.

Schwarz, H., and M. Bretschneider. 2013. "Alles 'Krumme Hunde'? Zur Strukturierung von Ausbildungsberufen im dualen System." [Crooked dogs? Structuring of vocational occupations in the Dual System.] *Berufs-und Wirtschaftspädagogik online* 25: 1–18. Accessed April 29, 2016. http://www.bwpat.de/ausgabe25/schwarz_bretschneider_bwpat25.pdf

Schwarz, H., M. Bretschneider, J. Schröder, R. Weber-Höller, S. Rak, and N. Christ. 2015. *Strukturierung anerkannter Ausbildungsberufe im dualen System. Abschlussbericht* [Structuring of Recognised Vocational Occupations in the Dual System]. Accessed April 29, 2016. https://www2.bibb.de/bibbtools/tools/dapro/data/documents/verweise/so_42381%20Strukturierung.pdf

Streek, W., and K. Thelen. 2005. "Introduction: Institutional Change in Advanced Political Economies." In *Beyond Continuity. Institutional Change in Advanced Political Economies*, edited by W. Streek, and K. Thelen, 1–39. Oxford: Oxford University Press.