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Two worlds of educational research? Comparing the levels, objects, disciplines, methodologies, and themes in educational research in the UK and Germany, 2005–2015

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Abstract

Embedded in social worlds, education systems and research reflect distinct national trajectories. We compare two contrasting traditions of educational research (ER). Whereas British ER exhibits a multidisciplinary and pragmatic character, German ER reflects pedagogy and mainly humanities-based traditions. Yet, in both countries, policymakers' growing demand for evidence in ER resulted in increased funding, specific research programs, and mandatory large-scale assessments. These have reshaped the field, suggesting more similar ER agendas. Based on a comprehensive original dataset of basic ER projects funded by the main grant-making agencies in both countries (2005–2015), we analyze five dimensions: levels, objects, disciplines, methodologies, and themes. We find epistemic drift, with partial convergence characterized by a multi-level focus, multidisciplinary approach, strongly empirical and quantitative methodology, and a premium on teaching and learning themes. The cases remain distinct in exploring systemic questions in a wider contextual frame (UK) or concentrating more narrowly on the individual learner (Germany).

Keywords

Educational research, disciplinary development, research funding, epistemic drift, UK, Germany

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Introduction: Two worlds of educational research

Educational research (ER) has attracted increasing attention by policymakers over the past two decades across developed countries and beyond. Educational planners have put into place various forms of research evaluation systems to assess the quality of ER (Besley, 2009; Marques et al., 2017). Countries participate in international large-scale assessments, usually spearheaded by international organizations, to monitor educational systems at various levels (Meyer and Benavot, 2013). Hoping to find "what works" (Biesta, 2007) in education prompts policymakers to fund unprecedented investments in ER infrastructure (Nutley et al., 2010). At the same time, scholars globally face pressures to compete on the basis of "excellent" scholarship, even though such measures of productivity are highly problematic (Post, 2014).

These global trends are exemplified by the UK and Germany, where governments have initiated important programs to advance ER. In both countries, policymakers' support for evidence-based policymaking and of "quality" ER has flourished along with their demands for results. For example, in *Modernising Government* (Cabinet Office, 1999), the UK's Labour government called for more evidence in ER in order to facilitate crucial policy decision-making beyond ideological divides. Similar trends can be found elsewhere, for instance, in the US and Canada (Howlett, 2009), Australia (Banks, 2009) and, later, in Germany (Aljets, 2015; Dedering, 2009).

In Germany, after a long absence from international assessments of student performance, the participation in the Trends in International Mathematics and Science Studies (TIMSS) and the Programme for International Student Assessment (PISA), and their middling results, led to a "shock" to national policymakers as these tests revealed unexpectedly poor results achieved by German students in comparison to Germany's self-image as a pioneering nation in education. In particular, the first PISA results in 2000 presaged a paradigm shift in ER and seismic changes to its governance (Zapp and Powell, 2016). Politicians, parents, teachers, schools, and researchers were suddenly involved in fierce debates on German education, often fueled by sharp comments from the mass media (Gläser et al., 2014; Waldow, 2009).

Both large-scale assessments and evidence-based policymaking are anchored in and demand specific kinds of ER. Often, this research is called empirical, quantitative, and interdisciplinary or multidisciplinary. Much of this research is reasoned causally as well as oriented to problems and solutions that can be measured in quantitative terms. Such a description of ER may not seem particularly novel. After all, many—especially Anglophone—countries have developed such kinds of empirical ER for decades. In contrast, education's scholarly communities in countries, such as those in Continental Europe, build on very different traditions and had long maintained alternate approaches. Germany represents the paragon of a hermeneutics-oriented, humanities-based pedagogy or educational scholarship with origins in 19th-century philosophy of education. This approach sits diametrically opposed to the "empirical" ER growing rapidly in recent years (see, e.g., Biesta, 2015; Horlacher, 2016). Both Germany and the UK, in their quests to boost policy-relevant knowledge production, more "quality" in ER, and national participation in large-scale assessments, have invested unprecedented funds in ER. They have done so largely through higher levels of institutional funding and, importantly, through significant, long-term ER programs unheard of in earlier periods.

Witnessing this remarkable government intervention in the cognitive development of ER as a discipline and organizational field raises the question whether this growing political interest has not only substantially changed educational *systems* and their governance, but also the *kinds* of research conducted.

In publicly funded research systems, two main governance instruments have been identified, namely *project funding* and *thematic programs* (Lepori, 2011; Lepori et al., 2007). Whereas

individual research projects are funding instruments often connected to academic interests and less tightly coupled to political priorities, thematic programs aim to find a solution to a specific, often politically defined, subject to inform policy. In British ER, the Teaching and Learning Research Programme (TLRP) attracted considerable attention from other countries due to the volume of funding, ambitious goals, and substantive coverage.[1] Similarly, the German Federal Ministry of Education and Research (BMBF), which was previously a hesitant actor in educational (research) governance due to German federalism's staunch privileging of the Länder authority in educational matters, launched the major Framework Program for the Promotion of Empirical Educational Research (Zapp and Powell, 2016).

Additionally, at the nexus of academic and political interests, research councils occupy a central role as scientifically autonomous agencies responsible for mediating government and scientific interests, using quality control based on extensive peer review. While some studies have shown the effects of funding agencies on the definition of priorities and funding instruments themselves (Braun, 1998; Lepori et al., 2007), less attention has been paid to the disciplinary *contents* and other qualitative aspects of research funded by autonomous research agencies.

Here, we compare two important science nations and their ER scholarship, and rely on Gert Biesta's (2011, 2015) discussion of two different cultures of ER: an Anglo-Saxon ER model characterized by multidisciplinarity and pragmatism, and a Germanic model of a humanities-based *Pädagogik*, grounded in philosophy. Allegedly, the latter is being challenged by a rapidly growing "empirical" ER field characterized by quantitative and policy-relevant (applied) knowledge claims. We aim to empirically validate this claim. These countries also maintain very different intellectual styles generally (Galtung, 1981). Examining contemporary educational scholarship, Ertl, Zierer, Phillips, and Tippelt (2013, 2015) provide evidence of gradual convergence over time across ER in the UK and Germany in terms of the actual content of research articles in leading journals. Similarly, our aim is to investigate the extent to which contemporary ER *projects* in the UK and Germany still mirror distinct "cultures"—or, rather, show signs of convergence. Based on a cross-national sample of agency-funded basic research projects (n = 175), we assess if global trends and national pressures have indeed altered the cognitive development of ER in these two countries that represent contrasting approaches in ER.

As cross-national comparative studies on the contents of research in general and ER in particular are rare, we propose an original multidimensional analytical framework to study similarities and differences in British and German ER. Our findings for various aspects of ER show the key educational levels of ER projects as well as research objects, disciplinary collaborations, methodological designs, and the major themes within each country. Finally, we contrast these two key contributors of ER in Europe, placing our findings within wider developments in the international environment of ER and its governance.

UK and Germany: Two pasts, one pathway?

Contemporary pathways in ER in the UK or "constructions" Germany demand explanation via their past, in terms of cultural developments. Here, we briefly chart the institutional evolution of these two "cultures" or "constructions" of ER that represent contrasting roots, paradigms, and normative rationales (Biesta 2011, 2015).

UK: Academicizing a multidisciplinary field

As defined by Simon (1983), prior to the higher education expansion in the 1960s three distinctive periods marked the field of education. A first phase (1890s–1914) was characterized by strong

references to Herbartianism. A second, inter-war period emphasized individualism and biological considerations in parallel with the rise of psychometrics. This was followed by a third phase, which stressed a more sociological approach influenced by the works of Karl Mannheim and Fred Clarke, among others.

The study of education was already institutionally established in Scottish universities with the appointment of Chairs in Education in Edinburgh and St Andrews since 1876. The situation was different in England. Here, the Standing Conference on the Studies of Education marked a particularly important hallmark only in the 1960s (Crook, 2002). John Furlong (2013: 24) notes that, until the Robbins Report (1963), British ER had mainly been a "specialist activity, primarily psychological and statistical, a laboratory activity distant from practice." The Standing Conference on the Studies of Education, chaired by WR Niblett and JW Tibble, proclaimed the role of philosophy, psychology, sociology, and history as the key disciplines to inform ER, later elaborated in Tibble's (1966) seminal *The Study of Education*.

Two fundamental aspects of this particular pathway of the *academicization* of educational studies still characterize British ER up to the present day. First, the multidisciplinary character that drove the field to considerable expansion has, at the same time, also led to specialization and fragmentation. This was spurred by specific disciplinary journals and the creation of respective professional associations similar to the development of the field in France, yet opposite to the German situation (McCulloch, 2002; Schriewer and Keiner, 1992). A second particularity concerns the difficult relationship between theory and practice exacerbated by different institutional settings of teacher education. The Standing Conference soon perceived that issues of curriculum and classroom interaction had been neglected, opening a cleavage between educationists in universities and colleges and the government (Richardson, 2002). Traditionally, teacher education had been provided in denominational colleges and Local Education Authorities, later complemented by more liberal university-based Departments of Education that acquired the status of Schools of Education offering BEd degrees following the Robbins Report in 1963. Such diversity further increased with the emergence of new polytechnics to provide teacher education. The polytechnics in England, Wales, and Northern Ireland were granted university status only in 1992 through the *Higher and Further Education Act*. Shaped by such governance decisions, the ER field has grown enormously in England both within and outside the university sector (Lawn and Furlong, 2007).

The pluralistic character of ER and teacher education facilitated the creation of a diverse and rigorous academic standing, yet the field was soon criticized once again for being too academic, distant from everyday practices, and unable to respond to the challenges facing the educational system. This situation led to heightened interest and activity in educational matters among policymakers (Aldrich and Crook, 1998), to which we turn in the following section.

Germany: Internationalizing an idiosyncratic field

Traditionally, the scientific community in Germany devoted to studies in education represents scholarship deeply rooted in educational theory, philosophy, and history with different (sub-)disciplines, such as pedagogy, didactics, and educational science. Together, these add up to an idiosyncratic amalgam, with a markedly different approach than those evolving in other countries (Schriewer and Keiner, 1992; Schriewer, 2017; for the period from Weimar to the mid-1960s, see Biesta, 2015; Horn 2003). For six decades, Germany's education scholars have been organized mainly within one mammoth disciplinary organization, the German Educational Research Association (DGfE). Its publication outlet was strongly traditionalist and somewhat insular. Although the DGfE's empirical section was complemented with members from sociology,

psychology, and other disciplines—which would become so important from the mid-1990s onwards—these remained marginal within educational science (Tröhler, 2014).

Not only was its disciplinary scope hermetic, but also scholarly communications and collaborations, such as in publishing and research networks, rarely crossed national borders; even less so across linguistic borders—that is, beyond the German-speaking world. The preferred type of publication was the sole-authored monograph. International standard procedure (double-blind) peer review processes were largely non-existent in academic journals dealing with education (Aljets, 2015). Unlike in France and the UK, published research was mainly confined to a diverse, specifically educational journal portfolio, rarely reaching out to other disciplinary outlets (Schriewer and Keiner, 1992). Germany's ER community originally showed little interest in joining international debates on achievement testing and assessment of pupil performance. If Germany hardly participated in large-scale assessments for decades, thus reducing analytic opportunities for quantitative researchers, by the mid-1990s the situation shifted, with these assessments now routine practice at various levels of education, including adult education or lifelong learning (Aljets, 2015; Zapp and Powell, 2016).

Historically, an awkward entanglement with politics under Nazi rule led to educational scholarship quite wary of close linkages to policymakers, not only in the immediate aftermath of World War II. This view solidified amidst academic disquiet, moving it further away from policymaking circles in the 1960s, which first witnessed the revival of humanities-based pedagogy of pre-Weimar Germany and then the rise of critical educational science (Biesta, 2015; Horlacher, 2016). Both of these strands were strongly opposed to understandings of education that were "expertocratic" and engineering-based (both in its cognitive-psychological and behavioral variants) as established in many other Western countries and international organizations after World War II (Tröhler, 2014).

While the number of education professors was, and still is, unusually high in Germany compared to other countries, extra-university institutes were scarce (but influential); initially, these institutes pursued research in opposition to the DGfE line (Tröhler, 2014). Many key research institutes that continue to be of major importance until today were founded not long after World War II, such as the German Institute for International Educational Research (1951), the Max Planck Institute for Educational Research (1961), and the Institute for Science and Mathematics Education (1966) (see Behm and Reh, 2016). They were "fact-based research bodies," joining wider calls for a "realistic turn in pedagogical research" (Roth, 1963: 109), but were soon led by more historical, comparative, and philosophy-oriented directors reflecting the wider research tradition in German (and other countries') educational scholarship organized in a well-established *Pädagogik* (Horn, 2003; Ingenkamp, 1992; Keiner, 1999; Tröhler, 2014).

Tellingly, teacher education was carried out mainly within higher education institutions devoted solely to education (*Pädagogische Hochschulen*). If in the 1970s these teacher training organizations were, in most *Länder*, integrated into universities, today teacher training programs within universities are in many places being (re)organized within so-called Schools of Education, usually with explicit research profiles and also offering doctoral studies. These can be found in cities such as Bielefeld, Bochum, Duisburg-Essen, Frankfurt am Main, Munich, Tübingen, and Wuppertal. These shifts signal academic drift, professionalization, and internationalization.

Pathway toward increased quality, international outreach, and policy relevance?

Despite these differences in history and scientific paradigm, research communities in both countries were subjected to similar criticism, namely the lack of quality. This supposed deficiency, however, seems to have as much to do with the rising expectations for "impact" of evidence marshalled through the field's activities as pure academic advance. The latter is found in dimensions

such as the increased demand of policymakers to establish overarching research priorities and select themes.

Prominent examples of such critiques can be found in David Hargreaves' (1996) lecture at the Teacher Training Agency, Tooley and Darby's (1998) evaluation for the Office of Standards in Education, or the research report for the Department for Education and Employment (DfEE) by Hillage et al. (1998). In general, it seems ER was perceived as being "small scale, irrelevant, inaccessible and low quality" (Pollard, 2007: 125). This criticism resulted in what Hodkinson (2001, 2004) call a "new orthodoxy" for ER, composed of more research capacity, more engagement with users, and greater focus on evidence-based policy and practice.

In the aforementioned *Modernising Government* (Cabinet Office, 1999) the UK government called for more evidence in ER in order to facilitate crucial policy decision-making beyond ideological divides. As stated by David Blunkett, the then head of the DfEE: "We need to be able to rely on social science and social scientists to tell us what works and why and what types of policy initiatives are likely to be most effective" (Blunkett, 2000: 21). In order to establish stronger linkages between education and research policies, a number of new organizations have been created. Among these we find the National Forum for Educational Research, the Centre for the Economics of Education, and the Centre for Research on the Wider Benefits of Learning. In a similar vein, the Evidence for Policy and Practice Information and Co-ordinating Centre at London's Institute of Education was established to conduct systematic reviews of ER findings.

With slight delay, the same verdict about quality was spoken for German educational scholarship. Confronted with average TIMSS (1995) and PISA (2000) results, the impression arose that ER in Germany had for too long been a "sleeping beauty" (Buchhaas-Birkholz, 2009: 27), with policymakers unaware of the actual state of quality in education. With notable exceptions, German ER was, as it was perceived, ill-equipped to deal with large-scale assessments and with the challenges of fundamental education reforms in general. Consequently, by the late 1990s, a growing number of science policy actors such as the Science Council (*Wissenschaftsrat*, WR), the German Research Foundation (*Deutsche Forschungsgemeinschaft*, DFG), and the BMBF (*Bundesministerium für Bildung und Forschung*) called for a new model of ER based on a positivist, mostly quantitative "exact social science" (DFG, 2002; WR, 2001: 33). Consequently, humanities-based educational scholarship was regarded not as the designated key contributor to this new research field, but rather as a hindrance. The BMBF was, and remains, convinced that "empirical education research is markedly different from the conventional work done in the more humanities-informed (school) pedagogy" (BMBF, 2008: 8).

ER was suddenly among those held accountable for the state of educational systems and pupils' test performance. As in the UK, the notion of evidence-based policymaking quickly became a common theme in national discourses. The first Europe-wide conference on "Research Strategies for an Evidence-based Education Policy" in 2007 was initiated by BMBF and attended by more than 300 members from EU and Council of Europe member countries. The BMBF sees national and international assessments, the search for causal mechanisms in teaching and learning, educational statistics, and a "system of internal and external evaluations" as directly linked to evidence-based practices allowing for "long-term preventive policymaking" (BMBF, 2008: 6; WR, 2001: 69). Scientific knowledge becomes the primary grounds upon which to make and legitimate political decisions: "As with other policy domains: political action in education can only be genuinely responsible if we face and take into account scientific knowledge and findings" (Schavan, 2009: 3).

As in the UK, German policymaking invested in creating new and reshaping extant organizational ER infrastructure. Here, the expansive role of the BMBF is remarkable as it was long barred from involvement in educational (research) policymaking and financing. Traditionally, educational matters are handled by the 16 independently administered State Ministries of Education, organized

in the Standing Conference of Ministers of Culture, or *Kultusministerkonferenz* (KMK). But even at the state level, ministers are convinced that "outcome-orientation, accountability, and system monitoring mark a paradigm change" (KMK, 2006: 5).

As a consequence of such consensus among policymakers, the years 2003–2004 saw the introduction of National Educational Standards and the creation of the supervisory Institute for Educational Quality Improvement. A number of international achievement tests became mandatory and a comprehensive system of educational monitoring has been established (Zapp and Powell, 2016).

In both countries, the debate around these new conditions and rationales for ER has been highly controversial. Some scholars advocate evidence-based policy and practice as the preferred means to reduce the gaps between research, practice, and policy (see Davies, 1999; Hargreaves, 1999). By contrast, others discuss the positivistic and economistic character at the core of evidence-based education, misleading comparisons between medicine and education (Hammersley, 1997; Radtke, 2015), the role of values and norms in educational decision-making (Elliot, 2001), or the dominance of technical questions in a debate that ignores the "need for critical inquiry into normative and political questions about what is educationally desirable" (Biesta, 2007: 21).[2]

Such disagreement notwithstanding, governments in both countries continue to extend their investments and thus their direct intervention in the cognitive development of ER. This is most tangible in the guise of large-scale and long-term research programs, explicitly aiming to shape the organizational infrastructure, methodological paradigms, and substantive foci of ER. The TLRP in the UK (see Pollard, 2010) and the Framework Program for the Promotion of Empirical Education Research in Germany are prominent examples of such thematic programs as mechanisms to steer research and govern knowledge in contemporary ER (Ozga, 2008; Zapp and Powell, 2016).

Yet, between direct government intervention and scientific activity, we find other highly relevant actors. Intermediate funding bodies, such as research councils, reflect the interests of both parties—policymakers and scientists—and thus find themselves in a typical dilemma: if funding agencies decouple themselves from policy missions, serving academic interests first, their material base is put at risk. Conversely, when they merely act on behalf and at the behest of policymakers, scientists may seek distance to them (Braun, 1998). In the quest for stable equilibria to counteract this dilemma, various stabilizing structures have been identified that direct attention to the consensual achievement of long-term interests of both policymakers (solutions to problems) and scientists (stable funding). Here, Van der Meulen (2003) stresses the mediating role of funding agencies and, relatedly, the agreement on peer review as a basis for funding decisions. Most importantly, research councils vary in their internal organization and mandate (Slipersæter et al., 2007). They may be strongly autonomous, academic-oriented, and even pioneering in advancing research fields, strongly supporting science. They may also be strategic—partially used to implement political goals—or, at the opposite end of the spectrum, primarily political instruments (Braun, 1998). Although peer review may remain the main criterion to allocate funding in all of these types, the rationales and (thematic) priorities for funding differ, ranging from nurturing academic or disciplinary interests (basic research) to responding to urgent social problems (applied research).

The UK's Economic and Social Research Council (ESRC), created in 1965 as the Social Science Research Council (rebadged after the Rothschild review in 1982), fostered greater focus on empirical research and has remained a central funding agency in social sciences. Funding thematic programs, such as TLRP, as well as project funding, ESRC's mission is "to promote and support, by any means, high-quality basic, strategic, and applied research" (ESRC, 1994: 1). In Germany, the key funding organization across the sciences is the German Research Foundation (DFG). It has been tasked with organizing intensive peer review for the burgeoning field of ER, in close and unusual collaboration with the BMBF. It assessed and reviewed the National Educational Panel Study (NEPS) project proposal, as part of the aforementioned Framework Program, although it does not directly fund the panel study (uncommon practice at DFG).

While evidence exists on how funding agencies affect the *structural* organization of science when infrastructure is built (Braun, 1998), we lack evidence on *contents* funded by research councils or the extent to which these contents reflect the larger trends and pressures described above.

The historical coincidence of an altered relationship between policymaking and ER in both countries prompts us to take stock of and compare the intellectual organization of the field in times of much public and political interest. We ask about the potential internal reform of ER institutions and organizations. We now turn from the within-case process-tracing of the changing conditions for ER to our comparative analytical framework.

Analytical framework

Studies on the evolution of the cognitive structure of academic research in the social sciences in general and in education in particular are relatively rare. We present noteworthy intranational studies before we report on selected cross-national comparisons and introduce our own analytical framework.

Comparing ER cross-nationally

For both countries, only few historical comparative studies have attempted to map the cognitive structures of ER. Sheffield and Saunders (2002), in their analysis on ER *subjects* comparing the periods between 1957–1967 and 1992–2002, find a shift from the "teaching of English", the "adoption of audiovisual aids", and "teacher training" in the first aforementioned period, to "attitudes" (teachers, students, and pupils), "evaluation methods", "access to education", and "school effectiveness" in the later. "Educational policy" and "higher education" (colleges and universities) were significant subjects throughout both periods.

This strong policy focus was confirmed in analyses of the two first cycles of research assessment exercises (Kerr et al., 1998). For the 2008 cycle, the Education panel acknowledged a greater focus on such topics as "language", "class size", "technology", and "classroom interaction". For the 2014 cycle, "early childhood education", "higher education", and "teaching and learning" were the main areas of interest (REF, 2015).

Interestingly, organizations conducting research on these topics show particular patterns. Using 1996 RAE data, Bassey and Constable (1997) find that "governance," "methodology," "teaching and learning issues," and "teacher, school, child issues" are dealt with in highly ranked departments, while "curriculum issues" and "teacher education" can be found more often within the lower-ranked institutions. Based on 2001 RAE data, Oancea (2004) shows that departments with higher ratings focused on "school organization and governance," "curriculum and assessment," "social inclusion," and "pupils and teachers," whereas school matters such as "teaching and learning" or "teacher training and development" are researched in those institutions with less reputation.

Charting the evolution of German ER is mostly done through recurrent data reports issued by the DGfE (Weishaupt and Rittberger, 2012; see also Thole, Faulstich-Wieland & Horn 2012), which had shown a field that is increasingly diversified in terms of funding (towards more external funding) and publication output (towards more articles), but still heavily anchored in a myriad of pedagogical subdisciplines not found in other countries. Further, extensive monographs chart the historical evolution of the discipline (Keiner, 1999) and the published journal output (Kuhberg-Lasson et al., 2014).

In a comprehensive synthesis, Weishaupt and Rittberger (2012) compiled various analyses of a number of content-based features in German ER for the period 1998–2007. They examined publication output, doctoral dissertations and habilitations, and research projects. In general, with almost 45% of published output (articles, books, edited volumes), they find a very strong

emphasis on "subject didactics" and "ER and theory" (Dees and Botte, 2012). These are also the major themes (complemented by an additional focus on vocational education) for doctoral dissertations and habilitations (Dees and Botte, 2012). For ER projects carried out during that period, Huth (2012) finds that "didactics" together with "adult and vocational education" are the two most represented foci (with a share of roughly 15% each), followed by research on "higher education" and the "education system" in general.

These studies may provide analytical thrust in a cross-national design and particularly in a UK–Germany comparative framework because they supply general analytical categories in research on ER. This is all the more important as comparative studies on ER are exceptional and are usually based on bibliometric analyses of journal publications. Here, we briefly present the findings of such cross-national studies.

Schriewer and Keiner (1992), in comparing communication patterns and intellectual traditions between Germany and France, find some striking contrasts. While French ER is much more socio-scientific, multidisciplinary, and published across a wide range of educational and non-educational journals, German educational scholarship displays strong intradisciplinary coherence, differentiation, and autonomy—with a vast portfolio of education-specific journals and a well-preserved canon of pedagogical classics leading to the "particular amalgamation of philosophical reasoning, historical erudition, and normative hermeneutics" (Schriewer and Keiner, 1992: 43), to which we referred earlier.

In a highly relevant comparative study of publication patterns in English and German journals of education between 2001 and 2009, Ertl et al. (2013) found that, although there were substantial differences between the two countries, these tended to decline in significance over time. The authors conclude that English journals shared a higher proportion of articles drawing on primary empirical data (61%). These journals have a higher proportion of articles using a multidisciplinary approach (98%) and taking an international perspective (90%). A substantial proportion of pieces analyze tertiary education (26%). By contrast, German journals have a higher proportion of non-empirical articles (58%) and a higher proportion of articles focused on secondary education (15%). Interestingly, German articles with an international perspective (82%) and multidisciplinary approach (89%) increase over time, indeed suggesting cognitive shifts in German ER over the past two decades.

Methods and data

Cross-national comparative studies on the content of research in general and ER in particular are challenging for several reasons. Beyond the fundamental one of language, questions of what is to be compared (units of analysis) and how (methods of analysis) complicate cross-national perspectives where data availability and national definitions of what counts as research differ—along with publication traditions. Bibliometric studies drawing on international publications structure analysis of the field, despite their obvious shortcomings (national or international bias, peer review bias, English-speaking bias, etc.). To avoid such biased comparisons, we constructed our own database drawing on national sources for in-depth comparative analysis and elaborated a comparative analytical framework.

For the UK, we selected 92 ER projects, funded by the most important independent funding agency, the ESRC. For the period 2005–2015, the sample size represents almost the totality of fundamental research[3] of ESRC Research Grants with an educational focus in the UK. Here, we selected only ESRC research grants in which Education was the subject of study (excluding Fellowships and Training Grants, for example). The data were collected through the Research Council UK Gateway portal. For Germany, the sample comprises 83 ER projects funded by the DFG, representing almost 75% of all DFG-funded projects with an educational focus. Missing data is explained by the fact that

some project descriptions did not display enough information on the analytical categories elaborated below or they were not clearly attributed to education as the main research focus. Data collection was done in collaboration with DFG staff and the comprehensive Information System on Funded Projects (*Geförderte Projekte Informationssystem*, GEPRIS) online portal of all funded projects.

The observation period was chosen based on several reflections. First, the ESRC's database (RCUK Gateway) only provides complete and systematic data from 2005, limiting our period of analysis. Nevertheless, our aim was to provide a snapshot of the contemporary situation embedded within a longer developmental perspective of both countries' ER. Second, the changes that we reported above that progressively shaped the contours of ER in both countries started in the mid- to late 1990s. Given the strengthening of reforms, the beginning and further developments of some programs, and the rise of evidence-based policy and practice, we selected 2005 as the point of departure to map the transformation of ER in both countries.

Analysis was done using theoretically derived overarching categories. These high-level categories, which can be used to generically describe ER across a wide set of countries, as shown above in the context of intranational accounts on UK and German ER and the selected international comparisons, constitute a coding family (Glaser, 1978). They comprise the levels, objects, disciplines, methodologies, and themes found in the selected ER projects. The *level* refers to the educational level from early childhood care and education (ECCE) to adult education and lifelong learning as indicated in the project description. The *objects* of ER refer to the targeted group(s) in the research project conducted; for example, teachers and learners. The *discipline* refers to the main academic field involved and made explicit in the research project; however, with a particular interest in multidisciplinarity. The *methodology* category refers to the main method(s) used in the project, ranging from, for instance, quasi-experimental trial studies to video analysis and participant observation. Finally, *themes* relate to the topic of research, such as teaching and learning. For further refinement of categories, we applied the main grounded theory tools of constant comparison, (open, axial, selective) coding, memo writing, and integration of concepts and categories, supported by the software MAXQDA (Bryant and Charmaz, 2007; Corbin and Strauss, 2008; Strauss, 1987). More precisely, while creating overarching categories, we found that the project's *theme* was often connected to a broader rationale. For instance, in projects related to *higher education*, we usually found two different rationales—one more focused on access, participation, and attainment, which is captured in our *widening participation* code, and another one dealing with *attitudes* and/or *trajectories* coded as *student experience*. We can find similar differences in the objects of study. While the projects focusing on widening participation framed their analysis within the structures of education systems, projects looking at student experiences tended to analyze students' perceptions without an interest in the meso-level (organizations). Core categories were, thus, substantially bolstered with lower-level sub-categories that helped to further integrate data across the two cases and to add more particular analytical thrust to each country individually. In a multi-month coding process, 989 items were coded for the British case and 611 for the German. In order to guarantee inter-coder reliability, samples were analyzed by at least two members of the research project team (reliability above 95%).

We now turn to our findings, structured according to our analytical categories.

Educational research in transition: Levels, objects, disciplines, methodologies, and themes in the United Kingdom and Germany

In the following sections, we present our findings regarding the main differences and commonalities of British and German ER in five categories: *levels, objects, disciplines, methodologies*, and *themes* of ER.

Educational research levels (system)

Our first question concerns the *educational levels* in which British and German educational researchers are most interested. Both countries have a clear focus on secondary education (both lower and upper secondary education), yet differences prevail for all other levels. While higher education is the second-most researched level in the UK (almost 20%), it ranks fourth in Germany (15%) where primary and pre-primary education are more than twice as often the targeted level in the analyzed projects (Figure 1). Surprisingly, further education or lifelong learning, which was high on the policy agenda in the early 2000s, received little attention in this sample. A British particularity consists in the fact that educational researchers often examine questions *across* levels. Such a holistic, systemic scope is hardly mentioned in these German ER projects. Among the less frequent levels, we find technical and vocational education in Germany, surprisingly, and research and training institutes, but policymaking agencies in the UK.

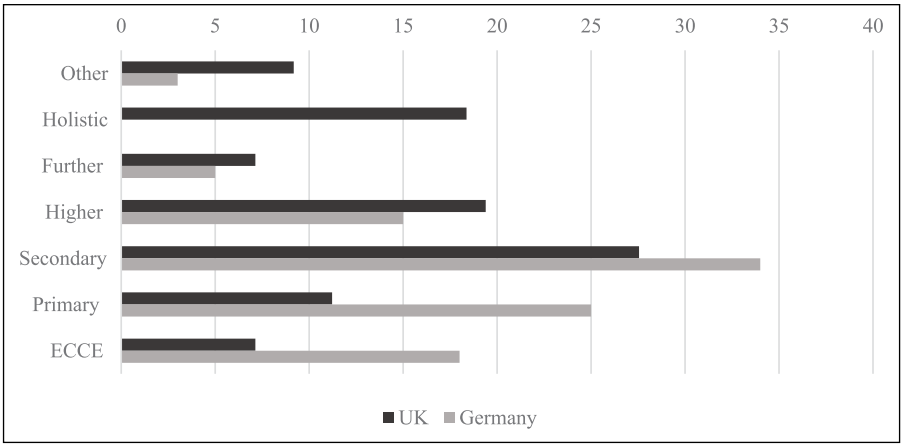

Figure 1. Educational levels in educational research.
Source: EDRESGOV project database on research grants collected from ESRC and DFG.

Educational research disciplines

Of particular interest in this cross-country comparison is the *disciplinary composition* of ER. Here, we expected idiosyncratic national traditions to be striking. Before specifying the disciplinary contributions to ER in both countries, we must first assess the general *degree of multidisciplinarity*. Indeed, in the UK, the portion of projects conducted by more than one discipline (72%) is more than double that of the projects in Germany (29%), where the vast majority is conducted by researchers associated with the single discipline of education. Indeed, we find the opposite breakdown (see Figure 2), clearly suggesting two worlds of ER. Most multidisciplinary projects include between two and four disciplines, rarely more (in only 2%–4% of the projects) (Figure 2). On average, projects conducted involve the collaboration of three (UK) and 1.5 (Germany) disciplines.

Turning now to a more detailed depiction of *disciplinary compositions* summing up to the ER landscape in both countries, we note that classifying disciplinary boundaries in a cross-national comparison is accompanied by several challenges given the various national intellectual trajectories and styles (see Galtung, 1981). Bearing in mind these national specificities, we nonetheless

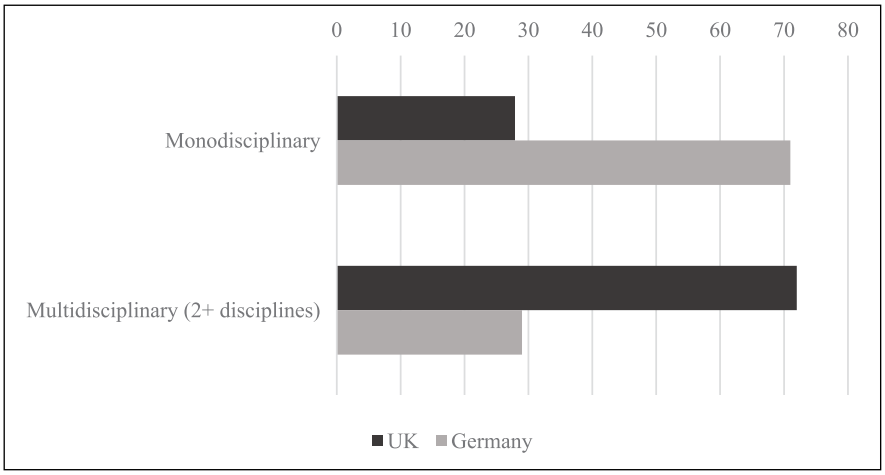

Figure 2. Multidisciplinarity in educational research.
Source: EDRESGOV project database on research grants collected from ESRC and DFG.

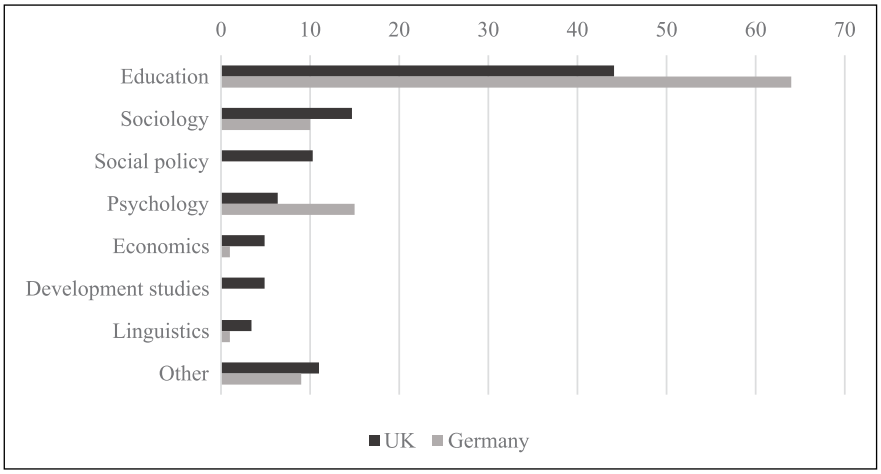

Figure 3. Disciplines involved in educational research.
Source: EDRESGOV's project database on research grants collected from ESRC and DFG.

attempt to cautiously compare the disciplinary composition of ER projects and will explicate these specificities along with the presentation of results.

Naturally, most of the projects in the sample are approached from the discipline of education (Figure 3). In the German context, the many pedagogical sub-disciplines are grouped under "education science." A number of branches are represented, such as general, historical, social, intercultural, special, vocational, media, and empirical pedagogy—along with neighboring fields such as pedagogical psychology, sociology, and anthropology, as well as pedagogies of specific educational levels (e.g., pre-primary pedagogy). Others refer to themselves as simply educational scientists or pedagogues in their projects. A third group claims "educational research" (*Bildungsforschung*) as their academic home. We also note that what is referred to in Germany as subject didactics (*Fachdidaktik*), that is, research on teaching and learning within the boundaries of a specific subject (e.g.,

mathematics, chemistry) often used in teacher training, is often referred to simply as pedagogy in the UK context.[4] Disciplinary distinctions are further complicated by the fact the research domains that are otherwise used as themes are used as disciplinary attributes; for example, "teaching and learning research" (*Lehr- und Lernforschung*) subsumed under education in Germany.

The disciplinary scope of pedagogy in Germany might, thus, be reflected in the fact that this discipline outweighs all others by far (64% as compared to 44% in the UK). Disciplinarily, more differences than commonalities exist. Sociology, strong in the UK (15%), is replaced by psychology in Germany as the second-most frequent source. Social policy accounts for a considerable number of projects in the UK (10%), while it does not appear at all in the German context, reflecting different disciplinary status in these countries. Socialization research has entered the DFG's classification as a discipline in its own right, whereas it does not exist as such in the UK. Economics and linguistics are marginal in both countries, though somewhat represented in the UK. A particularity in the UK is development studies, explained by the fact that British ER often investigates educational questions outside the national boundaries and in the context of developing countries (24 projects from the UK sample have an international scope, whereas none of the German projects do). Additional disciplines such as history, neuroscience, political science, anthropology, and others have been pooled together as their respective share does not exceed 1%–4%. We now turn to the methodologies chosen in these projects.

Educational research methodologies

First, the vast majority of ER projects in both countries explicitly claim to be based on the analysis of empirical data (Figure 4). In the UK, all of the analyzed ER projects use a specific method to analyze data; 94% of the German research does so. However, variance is found in the *types of methodologies* preferred. UK educational researchers prefer qualitative methodologies over quantitative (53% vs. 35%), while these methodologies are almost equally mentioned by German researchers (42% vs. 43%). For Germany, this suggests the impact of recent emphasis and investment in quantitative research. In addition, 12% of the UK researchers and 9% of German researchers put a premium on the use of mixed methods. Work considered purely theoretical was only funded in Germany, albeit representing a small share (6%).

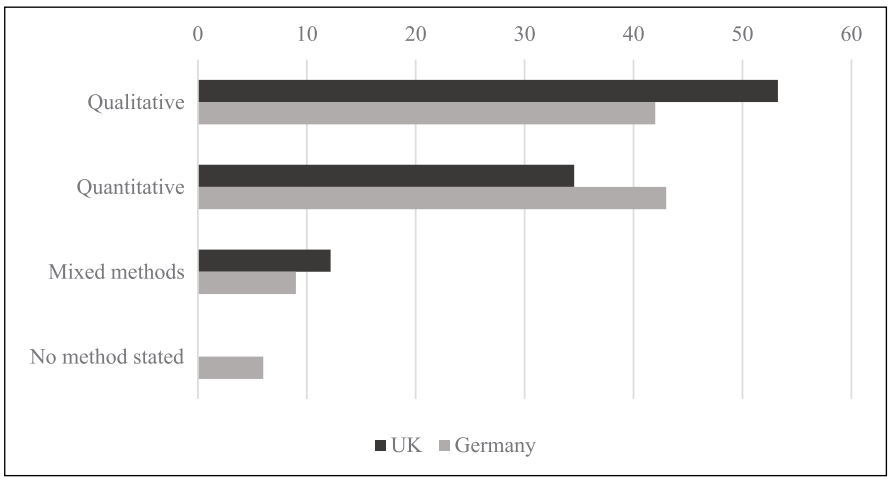

Figure 4. Methodologies in educational research.
Source: EDRESGOV project database on research grants collected from ESRC and DFG.

Within these overarching categories, we find the entire methodological array. Among the most privileged qualitative methods in the UK are interviews, case studies, observations, action research, and document analysis. Similarly, German researchers prefer interviews, video analyses, and case studies. Accessing the field quantitatively is most frequently done through surveys. In Germany, longitudinal analyses are the main design chosen. Additional methods include (quasi) experiments or (randomized controlled) trials and network analyses.

Educational research objects

Students are the primary *target group* in educational analyses of both countries (54% UK; 42% Germany). Yet, differences can be found for all other groups (Figure 5). Teachers are the primary focus on 23% of all British projects, whereas only 16% of German projects link their interests explicitly to them. Here, families and communities are mentioned much more often (26% compared to only 8% in the UK). Stakeholders, comprising school management and administration and policymakers, make for the third largest group in the portfolio. Peers are marginal in both countries, particularly in British ER. The low priority given to lifelong learning and adult education (see above) is reflected in the fact that adults remain almost entirely absent in the residual "other" category.

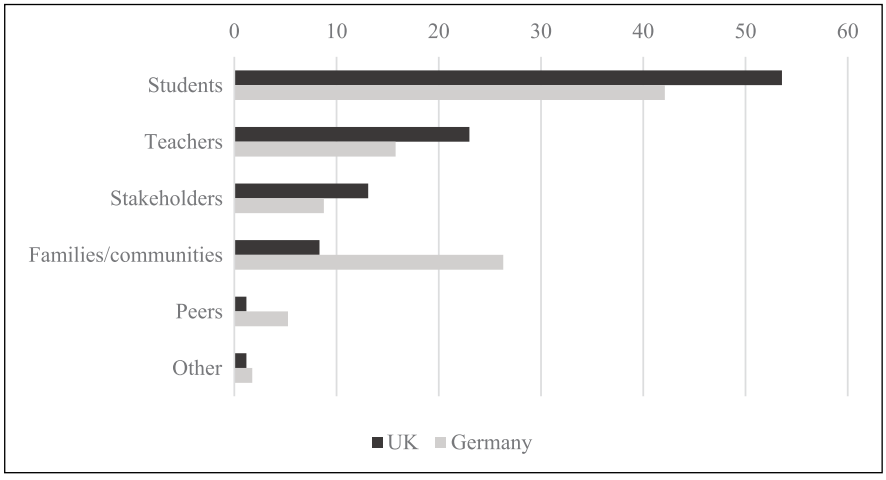

Figure 5. Objects of interest in educational research.
Source: EDRESGOV's project database on research grants collected from ESRC and DFG.

Educational research themes

Finally, we turn to the most comprehensive category analyzed. *Themes* investigated in both countries reflect a complex picture of diverse educational foci reflecting much cross-national variation (Figures 6 & 7). Constructing categories is made difficult in some cases as topics partly overlap or similar terminology carries substantially different meanings. In both countries, particularly in Germany, the broad category of *teaching and learning* accounts for the bulk of projects, yet different topics are contained therein.

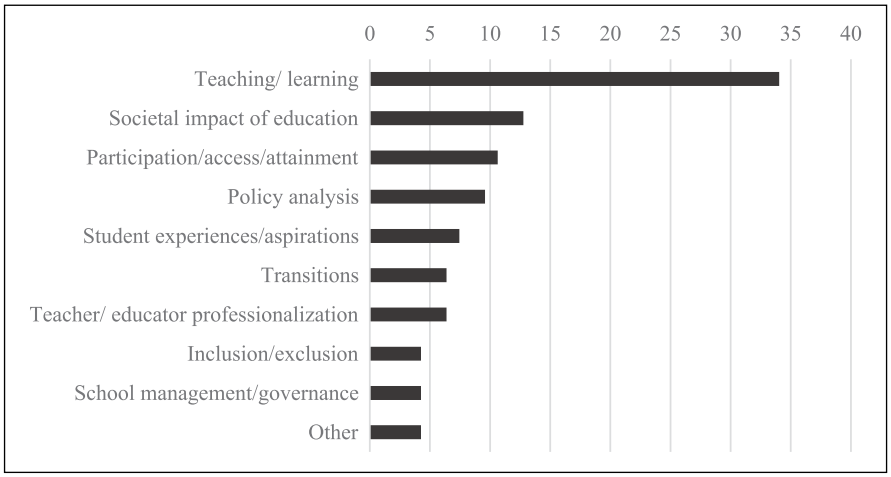

Figure 6. Main themes in British educational research.
Source: EDRESGOV project database on research grants collected from ESRC and DFG.

In the UK's ER portfolio, three overarching themes emerge as preferred—*teaching and learning* (29%), *widening participation* (access, attainment) (15%), and *student experiences* (choices, attitudes, trajectories, and transitions) (14%). Within *teaching and learning*, we find considerable attention given to effective learning as expressed in models and best practices to improve literacy and learning outcomes. This is particularly clear in language and other subject-related research (Science, Technology, Engineering, and Mathematics (STEM); especially in Mathematics). Such research is mainly conducted at the secondary level, with a strong involvement of pedagogy, psychology, and the use of collaborative interventions of researchers, teachers, and students. The use of collaborative intervention (action research) may explain why teachers attract more attention in the British context. The use of new technologies and learning disabilities are also present, albeit marginally compared to other themes. *Widening participation* is the second preferred topic of research, mainly located at the secondary and higher education levels, with a strong sociological approach, both nationally and internationally.

Student experiences emerges as the third largest research topic; particularly strong at the secondary and higher education levels, and addressed mainly from sociological perspectives. Here, we found different foci of analysis correlated with the educational level. While on the secondary level student experience is more concerned with choices, higher education research puts a premium on issues of transition and adaptation.

In Germany, *teaching and learning* accounts for two-thirds of the whole sample. There is a strong focus on student competences (or skills) and performance, often embedded in the context of specific subjects, such as the natural sciences, which receives most of the attention in the projects analyzed, and linked to the use of Information and Communications Technology (ICT) in teaching. Further, teacher training has its place in research efforts of the past decade (7%). As a somewhat unusual topic, German researchers are interested in the implications of a stratified educational system with regard to "elite students." Here, questions revolve around the educational trajectories, processes of distinction, and habitus formation of students in the context of elite educational institutions at different levels of the education system. Other projects investigate "educational

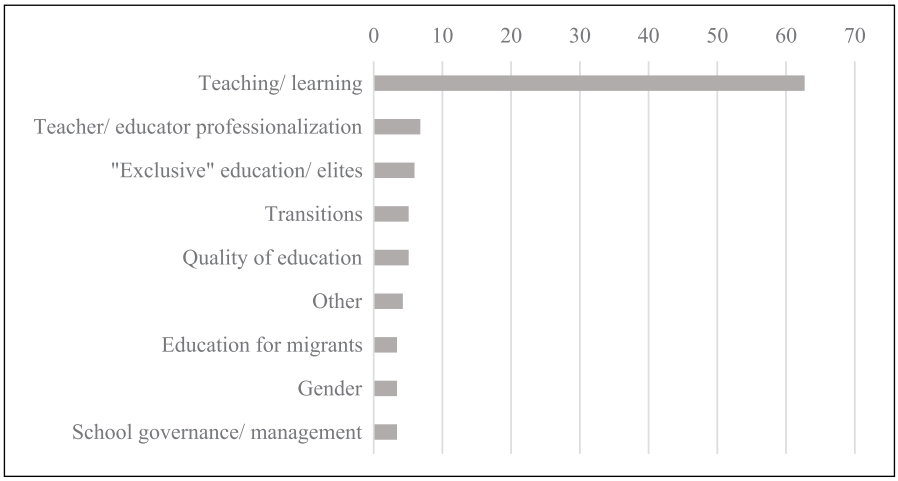

Figure 7. Main themes in German education research.
Source: EDRESGOV project database on research grants collected from ESRC and DFG.

decisions" in situations of transitions, the quality of educational services, and diversity aspects regarding female and migrant students.

Discussion: ER on systems in context or learners in the system

Our cross-national analysis paints a complex picture of the state of agency-funded basic ER in the UK and Germany. In both countries, secondary education is the preferred level of analysis. Qualitative methods are the most commonly used among contemporary educational researchers, although the application of quantitative methods has grown. Naturally, learners are the main objects of research, but teaching and learning matters are the most-often focused themes. Empirical data, in myriad forms and via a range of methodologies, is the main source of results, instead of more theoretical statements. Reflecting contrasting institutionalization pathways, ER in the UK is far more multidisciplinary than it is in the German context.

Can we speak of two distinct worlds of ER? Because adequate answers to this question are complex, our analysis sought first and foremost to structure the debate and provide preliminary answers based on a constructed database of funded ER projects from the leading grant-making organizations in both countries. These results should be further specified in future in-depth content analysis. Results from this exploratory study do confirm important differences and similarities.

The focus on secondary education, s*tudents* as the main objects of analysis, and the processes of *teaching and learning* as the major theme in both countries point to convergence. This reflects a range of factors. First, the worldwide acceptance of the importance of this level of education to individual earnings and economic growth (Barro, 1996) is widely supported and diffused by international organizations to establish secondary education as compulsory education. Second, secondary schooling is the most internationally scrutinized level of education, also due to its sorting function, made visible through PISA and other large-scale assessments (Meyer and Benavot, 2013; Sellar and Lingard, 2014). Third, there is global support for Millennium Development Goals, from primary schooling to investment in secondary education that emphasizes schooling's centrality for social and economic goals.[5]

Pairing level results with themes and disciplines, we can confirm Tight's (2013) analysis of 15 leading higher education journals in which student experience appears as one of the strongest foci. Moreover, while in higher education, course design, or learning outcomes seem less relevant; at the secondary level, achievement in language and other subjects (e.g., Science and Mathematics) emerge as the strongest topic of research and mainly addressed from the perspective of psychology.

In the British context, the use of empirical data to inform research is ubiquitous. In the German context, the use of empirical data in all the research grants in our sample may be surprising considering the more philosophical, humanities-based tradition in ER there, shown in earlier research (Dees and Botte, 2012; Schriewer and Keiner, 1992). Yet, this confirms what Ertl et al. (2013, 2015) discovered in examining publication patterns in both countries. This may be explained by the increased attempts of scholars to find utilitarian answers to "what works" in education, more generally reflecting a highly instrumental science-for-development model institutionalized globally (Drori et al., 2003).

This indeed suggests that evidence to inform policy and practice has brought German ER closer to British ER over recent decades. More precisely, clear research priorities expressed in large research programs such as German's Framework Program further incentivize this kind of ER (Zapp and Powell, 2016). Policymakers' strong call for "more evidence" at least indirectly may have caused lasting "epistemic drift" among researchers (Elzinga, 1997). In seeking to utilize existing datasets and to attract significant external funding, researchers incorporate externally defined rationales in their research agenda and scientific activity.

Here, we should also note the role of research councils in defining themes or at least as agents that shape the research aims and the cognitive development of a discipline (Braun, 1998). For instance, the ESRC used to demand that proposals show the planned dissemination of results in advance. Now, proposals must devote a section to estimate the potential impact of the work—even prior to application, far ahead of conducting analyses. Although such a practice cannot (yet) be found at the DFG, the Framework Program showed the proactive role of the DFG in promoting empirical ER. In assessing and reviewing the NEPS project proposal, albeit not funding it, the DFG deviated from standard operating procedure. The BMBF knew that with DFG support in managing the highest quality peer review, the program would gain significant legitimacy (Zapp and Powell, 2016).

Whilst this convergence could be explained by incremental factors, what separates both can only be understood within context, examining structural aspects intimately connected with the institutional development of ER in each country. On the one hand, the presence of different disciplines in the UK in the field of education still "…represent central pillars of educational studies and research" (McCulloch, 2002: 117). Particularly interesting is the rise of teaching and learning as the main theme, with a substantial focus on school-based research, which explains the presence of collaborative intervention as a preferred method. This might be linked to TLRP and the notion of "effective pedagogy" prominent throughout the last decade (James and Pollard, 2011). This rationale may well have spilled over into ESRC's grantmaking. This is certainly not synonymous, as Biesta (2015) reminds us, with what is desirable in education or what education is actually capable of achieving. In the German context, looking within the discipline of pedagogy or educational science (*Pädagogik* or *Erziehungswissenschaft*) to analyze the shifts in enquiry is of particular interest, as we may find the continuing rise of a result-oriented rationale—complementary or contradictory to the traditional value-oriented rationale (Aljets, 2015; Zapp and Powell, 2016; Schriewer, 2017).

Beyond these more theory-driven analytical categories, we note some striking features across the two countries. In the UK, the ER focus is on the *education system within its context*. By contrast, in Germany the ER focus is on the *learner within the system*. We provide more evidence for

such a distinction here. A first indicator for this more systemic feature of UK research is the remarkable share of projects with a "holistic" focus, completely absent in the German sample. We find projects that deal with the general impact of education or schooling on society, health, economy, and market, as well as longitudinal studies in which the topics (e.g., student experience) are more determinant than the level of schooling. Such a holistic focus may be related to the importance accorded to widening participation and the general societal benefits of education. In the same vein, UK projects are more equally distributed across sectors than in Germany, where early childhood, primary, and secondary education account for almost three-quarters of all project work. This contrasts with projects funded by other sources than the DFG, which are mostly concerned with adult and vocational education (Dees and Botte, 2012; Huth, 2012).

Secondly, system-focused disciplines are far more visible in the UK sample: sociology, social policy, and economics systematically outweigh their German counterparts. Social policy, entirely missing in the German context, is a particularly strong indicator of such a contextual educational approach in the UK, as it traditionally focuses on education as a key subsystem within welfare-state policies as opposed to the German understanding of education (policy) as a separate field (Allmendinger and Leibfried, 2003). The social policy dimension in UK ER was also strengthened through ESRC–DFID Joint Fund for Poverty Alleviation Research, set up in 2005, which funded more than 130 grants in various fields, including education. This explains the presence of social policy and development studies disciplines as well as the international focus in 24 research grants in the UK. By contrast, German ER is dominated by learner-centered disciplines, such as education science and psychology, but far more focused on the core discipline, confirming earlier research (Dees and Botte, 2012; Ertl et al., 2013, 2015; Huth, 2012).

Thirdly, UK research gives more attention to students *and* other persons, such as teachers and stakeholders (e.g., policymakers). German ER focuses on students *and* families and peers more so than ER does in the UK.

Finally, the uncovered *themes* clearly reflect these cross-national differences. While teaching and learning account for almost two-thirds in the German sample, do so for only one-third in the British sample, leaving much room for more contextual themes. These include the societal impact of education, educational policy analyses, and questions of participation or access to and attainment in and through the educational system. The latter can also be explained referring to research carried out on developing countries. Issues, such as transitions and school governance, are proportionally represented more in the German array.

Conclusion

We compared the development of ER in the UK and Germany from 2005 to 2015 based on a content analysis of basic research projects funded by two leading funding agencies, the ESRC (UK) and the DFG (Germany). Given the conventional claim in research that comparing these two countries involves contrasting cases, we assumed that ER would have different origins and historical pathways with particular levels, objects, disciplinary, methodological, and thematic characteristics prevailing up to today. Whilst our analysis confirms the existence of two different ER paradigms, we also find growing convergence—towards a more unified model of ER that is highly empirical and emphasizes quantitative methodologies. This seems to reflect wider international trends and researchers' adoption strategies. Despite these dynamics, in Germany the strong pedagogy-oriented legacy continues to exert influence (Gläser et al., 2014). Thus, we balance Biesta's (2011, 2015) two-culture hypothesis as we argue that it is imperative to take into account not only the traditional paradigm in German pedagogy, but the burgeoning generation of empirical ER. The latter is marked

by strong traditions, yet aimed at finding evidence with the expanded use of methodological toolkits based in quantitative social science.

An unexpected contrast characterizes the two countries. While British ER scholarship is mainly interested in questions pertaining to education systems framed by wider social, political, economic, and cultural context factors, German researchers pay more attention to individual learners and their learning processes *within* certain organizational forms of the education system. Based on this finding, further studies may extend and refine comparative analysis of ER agendas internationally to discover possible convergence or divergence as countries around the world invest more in ER that analyzes complex and expanding education systems. While much comparative research has focused on growing similarities in education policy and systems, the dynamics in ER scholarship have yet to be comprehensively studied.

With education increasingly perceived as the ultimate means of social and economic progress, heightened investments in ER are to be expected; however, this also raises the demands for solutions, as seen in the rise of "impact" as a criterion even for grant-making in basic research. Relatedly, classical academic scholarship has been challenged as novel actors join in the pursuit of answers to recurring educational issues and problems. Among these actors are foundations, think tanks, international organizations, private institutes, and transnational corporations. They all contribute to an increasingly internationalized and standardized understanding of the goals and kinds of ER to be conducted. Paradoxically, such internationalization may jeopardize the paradigmatic diversity, shown here in the comparison of the UK and Germany, that provides alternative emphases and approaches to study learners in education systems in society.

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Notes

1. See, for example, the Special Issue in *Research Papers in Education* (volume 26, number 3) devoted to TLRP.
2. See also the debate between Ties Rabe and Olaf Köller on the value of ILSAs in Germany's influential newsweekly *Die Zeit* (Kerstan and Spiewak, 2013). The foundation of the Association for Empirical Educational Research (*Gesellschaft für Empirische Bildungsforschung* (GEBF) in 2012, now rivalling the DGfE, can also be interpreted as reflecting such a turf war in German ER (Zapp and Powell, 2016).
3. For that matter, we excluded all the TLRP's projects that were funded through ERSC grants.
4. See the *Datenreports der Erziehungswissenschaften* 2004–2012 for more detailed accounts of the disciplinary complexity in German educational scholarship.
5. See the agreement between the UK Department for International Development (DFID) and ESRC as well as DFID's priority on this level. The UK promised to spend £8.4 billion on education in developing countries over the next 10 years.

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