

## **The “Science of Education” – Different Terms, Concepts, Cultures and Epistemologies? A Contribution to a Social Epistemology**

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*The “science of education” uses various terms and has different meanings in diverse countries, which are grounded in different knowledge traditions, worldviews, semantic frames of reference, networks, and cultural contexts. The frequent use of English seems to smooth out and ignore these diversities, which, at the same time, could be interpreted as sustainable and productive resources of knowledge and scholarly communication – seen both from a diachronic, historical and a synchronic, comparative point of view. In the context of a “social epistemology” we use the changes of disciplinary (self-) designations of the German “science of education” (Pädagogik, Erziehungswissenschaft, Bildungswissenschaft, Bildungsforschung) as an example, which indicates the transition from one generation of educational researchers to the next. Concluding remarks raise questions about the possible functional equivalents of these (or other) developments in the science of education in other contexts and point to the value of a (self-)critical social epistemology for the science of education in a historical and comparative context.*

*La “scienza dell'educazione” usa vari termini e ha differenti significati nei diversi paesi, che hanno come base differenti tradizioni di conoscenza, concezioni del mondo, schemi semantici di riferimento, reti e contesti culturali. L'uso frequente dell'inglese sembra appianare e ignorare queste diversità, che, allo stesso tempo, potrebbero essere interpretate come risorse sostenibili e produttive di conoscenza e comunicazione accademica – viste sia da un punto di vista diacronico, storico, che sincronico, comparativo. Nel contesto di una “epistemologia sociale” usiamo i cambiamenti delle (auto)denominazioni disciplinari della “scienza dell'educazione” tedesca (Pädagogik, Erziehungswissenschaft, Bildungswissenschaft, Bildungsforschung) come esempio, che indica la transizione da una generazione di ricercatori in ambito educativo alla successiva. Le osservazioni conclusive sollevano domande sui possibili equivalenti funzionali di questi (o altri) sviluppi della scienza dell'educazione in altri contesti e indicano il valore di un'epistemologia sociale (auto)critica per la scienza dell'educazione in un contesto storico e comparativo.*

*Keywords: Science of education, (self-)designation, diachronic and synchronic diversity, academic generations, scientific cultures, social epistemology*

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*Parole chiave: Scienza dell'educazione, (auto)denominazione, diversità diacronica e sincronica, generazioni accademiche, culture scientifiche, epistemologia sociale*

1. *Introduction*

In the countries of Europe, it is easy to spot that our discipline – let's call it the “science of education” here for pragmatic reasons – has different names in different languages: Erziehungs- und Bildungswissenschaft, pedagogia, educational research, sciences de l'éducation, scienze dell'educazione, pedagogy, or ciência da educação. One might think that this is simply an issue of translation. However, this is not the case. The various terms are grounded in different knowledge traditions, worldviews, semantic frames of reference, networks, and cultural contexts, which vary widely and thus lead the concepts themselves differ from each other. This may not be a major problem in the context of internationalization, given the widespread use of the English language within the scientific community. However, this kind of “translation” is highly reductionist as it does not take note of historical, cultural, and national peculiarities and specificities<sup>2</sup>. Of course, the importance of English at a practical level, as a hybrid language that plays a particular role in the epistemological bridging of different scientific cultures and languages, should not be underestimated. However, the science of education retains strong links with the national education systems in which research is undertaken, and has thus historically contributed to the formation of nation states. Epistemological bridging only becomes analytically significant where the different languages are considered as reflected reference spaces<sup>3</sup>.

<sup>2</sup> E. Keiner, ‘*Rigour*’, ‘*Discipline*’ and the ‘*Systematic*’ – *Semantic Ambiguity and Conceptual Divergence in the Construction of Educational Research Identities*, in “*European Educational Research Journal*”, 2019, 18(5), pp. 527-545.

<sup>3</sup> The European Union has made attempts to integrate different databases and to build a multilingual education research and documentation thesaurus, for example through the PERINE project (Pedagogical and Educational Research Information Network for Europe, 2001-2004). The EUDISED project (European Documentation and Information System for Education), which was launched in the 1970s and the results of which were published in the mid-1980s, was also of particular importance for conceptual differentiation and integration (A. Gretler, *The International Social Organization of Educational Research in Europe: reviewing the European Educational Research Association as an example – facts and questions*, in “*European Educational Research Journal*”, 2007, 6(2), pp. 174-189. It included maps of semantic fields for different educational concepts in a variety of European languages. However, in doing so, it restricted itself to the creation of a network of words rather than working with differentiated and precise terms and concepts. The subsequent project, EERQI (European Educational Research Quality Indicators), tried to take a step forward by introducing linguistically sensitive research quality indicators (A. Botte, *The rele-*

Differentiated, linguistic comparative analysis and studies relating different terms to social affiliations, milieus, world constructions, methodologies, theories, and scientific cultures have yet to be undertaken. But there is also a lack of studies demonstrating the extent to which a hybrid inter-linguistic *mélange* can provide for increased complexity without losing specificity. The diversification of diversity<sup>4</sup> would without doubt be a sustainable and productive gain if it resulted in a culturally diverse, ecological, and scientific footprint in scholarly communication – akin to the eco-social glocalization discussed in concepts of urban governance, for example<sup>5</sup>.

This perspective can be presented as a synchronic, comparative analysis of language, culture, and theory (focusing on space). In addition, however, there would be a diachronic perspective (focusing on time), which takes into account that within the different cultures and languages, each idiosyncrasy also has its own history. Here, too, there are relatively few comparative historical and cultural studies that consider conceptual and cultural variations in their contexts of origin<sup>6</sup>.

Both perspectives can perhaps be summarized under the more general title of “social epistemology”, which encompasses theories of knowledge and non-knowledge as well as their social and cultural cor-

*vanance of the EERQI framework in the light of future perspectives: Enhancing the visibility and detection of European research publications*, in I. Gogolin, F. Åström, A. Hansen (a cura di), *Assessing Quality in European Educational Research*, Wiesbaden, Springer VS, 2014, pp. 184-196; D. Bridges, *Research quality assessment in education: Impossible science, possible art?*, in “British Educational Research Journal”, 2009, 35(4), pp. 497–517; I. Gogolin, *European educational research quality indicators (EERQI): An experiment*, M. Ochsner, S. E. Hug, H.-D. Daniel (a cura di), *Research Assessment in the Humanities. Towards Criteria and Procedures*, Cham, Springer Open, 2016, pp. 103-111).

<sup>4</sup> S. Vertovec, *Super-diversity and its implications*, in “Ethnic and Racial Studies”, 2007, 30(6), pp. 1024-1054.

<sup>5</sup> R. Barnett, S.S. Bengsten, *Knowledge and the university: Re-claiming life*, London, Routledge, 2020; C. Brandtner, *Öko-soziale Glokalisierung? Egalitäre und elitäre Tendenzen des Konzepts der Urban Governance*, in “Momentum Quarterly”, 2012, 1(2), pp. 75-89; see also E. Keiner, B. Gross, *Biblioteche universitarie ed ecologia della conoscenza nell’era della post-verità*, in G. Cavrini, M. Parricchi, M. Cagol, D. Kofler (a cura di), *Per tutta la vita. Pedagogia come progetto umano*. Milano, FrancoAngeli, 2021, pp. 74-84; K. Karlics, S. Hofbauer, B. Gross, E. Keiner, *Erziehungswissenschaftliche Kommunikationskulturen im Vergleich. Deutschland – Italien in bibliometrischer Perspektive*, under review, 2022.

<sup>6</sup> See for example *Histoire Croisée*, M. Werner, B. Zimmermann, *Beyond Comparison: Histoire Croisée and the Challenge of Reflexivity*, in “History and Theory”, 2006, 45(1), pp. 30-50,

relates<sup>7</sup>. In this respect, it attempts to integrate not only the methodology, philosophy and theory of science, but also the sociology and (social) history of knowledge and science<sup>8</sup>.

From an epistemological perspective, the question of the change in how the discipline conceives of itself initially arises in the context of scientific progress. An approach based more on the liberal arts or critical theory would suggest a more cyclical conception of knowledge. A focus on empirical educational research, on the other hand, would suggest a cumulative development of knowledge that takes place within larger framework programs of research. As an alternative to such epistemological distinctions, it is also possible to consider the intra-disciplinary dynamics of the creation and processing of themes and topics<sup>9</sup>. “Fractured-porous disciplines” such as those dealt with in these analyses have a low internal consensus on theories and methods, and are characterized by a high degree of diversity, extreme changes of perspectives, high creativity and innovation. On the other hand, “unified-insular disciplines” have a high degree of internal agreement with regard to fundamental theories, methods, research standards and evaluation criteria.

There are clear boundaries between disciplines, only moderate exchange with other disciplines, a high degree of certainty with regard to

<sup>7</sup> M. Fricker, P. J. Graham, D. Henderson, N. J.L.L. Pedersen (a cura di), *The Routledge Handbook of Social Epistemology*, New York, London, Routledge, 2020; S. Shapin, *A Social History of Truth: Gentility, Credibility, and Scientific Knowledge in Seventeenth-Century England*, Chicago, Univ. Chicago Press, 1994; F. F. Schmitt (a cura di), *Socializing Epistemology: The Social Dimensions of Knowledge*, Lanham, Maryland, Rowman, Littlefield, 1994; S. Fuller, *Social Epistemology*. Bloomington, Indianapolis, Indiana University Press, 1988.

<sup>8</sup> See for example the Springer *Educational Research* series edited by P. Smeyers and M. Depaepe, which draws links between philosophical and historical foci; see also P. Smeyers, M. Depaepe, *Die Forschungsgemeinschaft „Philosophy and History of the Discipline of Education” – Ein Rückblick*, in “Zeitschrift für Pädagogik”, 2015, 61(5), pp. 623-642.

<sup>9</sup> Cf. T. Bender, C. E. Schorske, (a cura di), *American Academic Culture in Transformation: Fifty Years, Four Disciplines*, Princeton, NJ, Princeton University Press, 1998; D. Ambrose, *Large-scale contextual influences on creativity: Evolving academic disciplines and global value systems*, in “Creativity Research Journal”, 2006, 18, pp. 75–85; P. Meusbürger, *Räumliche Disparitäten des Wissens. Zu einigen Kommunikationsdefiziten zwischen wissenschaftlichen Disziplinen*, in M. Hey, K. Engert (a cura di), *Komplexe Regionen – Regionenkomplexe. Multiperspektivische Ansätze zur Beschreibung regionaler und urbaner Dynamiken*, Wiesbaden, VS-Verlag, 2009, pp. 209-229.

topics and how they are approached and thus relatively low cross-border creativity<sup>10</sup>. Such different patterns in the formation of scholarly communities are also associated with different organizational forms of university departments, resource allocation, job hierarchies and the training of a scientific habitus. In addition, fractured-porous disciplines contribute significantly to the “educationalisation of social problems”<sup>11</sup> due to their readiness to take up political and societal problems converting them into educational ones. This in turn leads to another problem, namely that of disciplinary autonomy, which is essentially determined by the relationships between a discipline and its environment.

According to Pierre Bourdieu, the nature of this relationship determines the degree of autonomy of a scientific field. It is measured by the “ability to break external constraints or demands, to bring them into a specific form ... The decisive indication of the degree of autonomy of a field is, therefore, its refractive power, its power of translation. The heteronomy of a field becomes evident essentially through the bringing to the fore of external questions, especially political ones, in a form that is halfway unbroken. The 'politicization' of a scientific discipline suggests that the field does not have great autonomy”<sup>12</sup>.

Furthermore, the blurring of the definition of the pedagogical field leads to disciplines having problems with (self-)designation, because the science of education refers to fields and professional actions characterized by contradictions, antinomies, and paradoxes<sup>13</sup>, structural

<sup>10</sup> Cf. also E. Keiner, ‘Rigour’, ‘Discipline’ and the ‘Systematic’ – Semantic Ambiguity and Conceptual Divergence in the Construction of Educational Research Identities, cit.; E. Keiner, S. Schaufler, *Disziplinäre und organisatorische Grenzen, Überschneidungen und Neufomatierungen – Das Beispiel Pädagogische Psychologie und Erziehungswissenschaft*, in N. Ricken, H.-C. Koller, E. Keiner (a cura di), *Die Idee der Universität – Revisited*, Wiesbaden, VS-Verlag, 2014, pp. 269-301; M. Knaupp, S. Schaufler, S. Hofbauer, E. Keiner, E., *Education Research and Educational Psychology in Germany, Italy and the United Kingdom – an Analysis of Scholarly Journals*, „Rivista svizzera di scienze dell’ educazione“, 2014, 36, pp. 83-106.

<sup>11</sup> P. Smeyers, M. Depaepe (Eds), *Educational Research: The Educationalization of Social Problems*, Dordrecht, Springer, 2008.

<sup>12</sup> P. Bourdieu, *Vom Gebrauch der Wissenschaft. Für eine klinische Soziologie des wissenschaftlichen Feldes*, Konstanz, Universitätsverlag Konstanz, 1998, p. 19 (quotation translated by authors).

<sup>13</sup> W. Helsper, *Professionalität und Professionalisierung pädagogischen Handelns: Eine Einführung*, Opladen, Toronto, Barbara Budrich, 2021; W. Helsper, *Pädagogisches Handeln in den Antinomien der Moderne*, in H.-H. Krüger, W. Helsper (a cura di), *Einführung in Grundbegriffe und Grundfragen der Erziehungswissen-*

technology deficits<sup>14</sup> and very weak correlations between professional interventions and educational impact. As there is ignorance, uncertainty and insecurity, complexity, and ambivalence<sup>15</sup> with regard to the science of education, it is not surprising that the problem of disciplinary autonomy was and continues to be a topic of concern<sup>16</sup>. This means that the (self-)designations of the discipline should be as comprehensive as possible, fuzzy and simultaneously resistant to wear and tear. According to this thesis, it is academic, social, generational relations that transform such self-designations – both enabling them to retain their “determinate indeterminacy”<sup>17</sup> and giving them epistemic determinacy.

This “determinate indeterminacy” is also present when we consider the historical development of science of education. The German science of education community began by calling itself *Pädagogik* in the 19th century. During the 1970s it renamed itself *Erziehungswissenschaft*, and a few years later the term *Bildungswissenschaft* became popular. During the 1990s, a group of scholars who favored quantitative, empirical, evidence-based research methods referred to their type of research as *Empirische Bildungsforschung*<sup>18</sup>.

A closer look at these developments not only reveals the changing

*schaft*, Stuttgart, UTB, Barbara Budrich, 2004, pp. 15-34.

<sup>14</sup> N. Luhmann, K.-E. Schorr, *Problems of Reflection in the System of Education*, Münster, Waxmann, 2000.

<sup>15</sup> W. Helsper, R. Hörster, J. Kade (a cura di), *Ungewissheit – Pädagogische Felder im Modernisierungsprozess*, Weilerswist: Velbrück, 2003; E. Keiner, *The Science of Education – Disciplinary Knowledge on Non-Knowledge/Ignorance*, in P. Smeyers, M. Depaepe (a cura di), *Research: Why 'What Works' doesn't work*, Dordrecht, Springer, 2006, pp. 171-186.

<sup>16</sup> E. Keiner, *Disciplines of education. The value of disciplinary self-observation*, in J. Furlong, M. Lawn (a cura di), *Disciplines of education. Their Role in the Future of Education Research*, London, New York, Routledge, 2010, pp. 159-172; R. Fatke, J. Oelkers (a cura di), *Das Selbstverständnis der Erziehungswissenschaft: Geschichte und Gegenwart*, (60. Beiheft der Zeitschrift für Pädagogik), Weinheim, Basel, Beltz 2014.

<sup>17</sup> Y. Ehrenspeck, D. Rustemeyer, *Bestimmt unbestimmt*, in A. Combe, W. Helsper (a cura di), *Pädagogische Professionalität. Untersuchungen zum Typus pädagogischen Handelns*, Frankfurt am Main, Suhrkamp, 1996, pp. 368-390.

<sup>18</sup> E. Keiner, *Pädagogik, Erziehungswissenschaft, Bildungswissenschaft, Empirische Bildungsforschung – Begriffe und funktionale Kontexte*, in E. Glaser, E. Keiner (a cura di), *Unscharfe Grenzen – eine Disziplin im Dialog. Pädagogik, Erziehungswissenschaft, Bildungswissenschaft, Empirische Bildungsforschung*, Bad Heilbrunn, Klinkhardt, 2015, pp. 13-34.

political contexts but also attempts to increase the “scientification” and “internationalization” of the science of education and to meet global research standards. These developments also reflect particular generations of educational researchers and indicate the transition from one generation to the next, with researchers needing to locate themselves in scholarship independently of their predecessors.

Against this background, the question of a disciplinary identity in the context of analytical, historical, comparative and empirical perspectives arises once again. But it also arises in view of the clear efforts of different groups to avoid mutual stereotyping, to differentiate problems, to emphasize willingness to engage in dialogue, and to make clear their appreciation of others’ methodological approaches and results, in order to achieve at least a socially supported consensus with regard to methodological differences in the shorter term.

In this respect, the problem of disciplinary self-designation becomes more important. An approach combining the nomenclatures of disciplines with the paradigmatic changes between generations would therefore seem to be useful. Such approaches to socialization theory could trace the development of concepts, theories and methodologies back to transitions between academic generations, which would then also be influenced by academic originality and competition for jobs.

In these contexts we use the English “science of education” as generic term. For disciplinary self-designations we use the German terms: *Pädagogik* (a word that roughly means pedagogy), *Erziehungswissenschaft* (a word that roughly means science of education), *Bildungswissenschaft* (a word that roughly means science of *Bildung*), *Empirische Bildungsforschung* (a word that roughly means empirical educational research)<sup>19</sup>.

<sup>19</sup> We largely use the terms used by E. Terhart, *Interdisciplinary research on education and its disciplines: Processes of change and lines of conflict in unstable academic expert cultures: Germany as an example*, in “European Educational Research Journal”, 2017, 16(6), pp. 921-936. In relation to empirical educational research, however, he distances himself from the term ‘educational research’ and prefers ‘empirical research on education’, in order to emphasize its interdisciplinary character. However, this does not correspond with an approach, which is focused on practical improvement and closely connected to the school system. See the distinction made by M. Lawn, J. Furlong, *The Social Organisation of Education Research in England*, in “European Educational Research Journal”, 2007, 6(1), pp. 55-70: “educational research would be used to denote research geared to improving policy and practice”, p. 69; see also G. Whitty, *Education (Al) Research and Education Policy Making: is conflict inevitable?*, in “British Educational Research Journal”,

The chapter below presents the context behind the different self-designations. In a concluding chapter, it would then be worth undertaking comparisons and at least raising questions about the possible functional equivalents of these (or other) developments in the science of education in other scientific cultures; or outlining the achievements and potential of a (self-)critical social epistemology for the science of education in a historical and comparative context. In this respect, rather than providing answers, the present contribution raises a series of questions that need to be discussed further.

## 2. German science of education and its self-designations

### 2.1 From *Pädagogik* (which roughly means pedagogy) to *Erziehungswissenschaft* (which roughly means science of education)

It was not for nothing that a wide-ranging and public discussion between experts about the name of the discipline began in the 1970s. Until then, *Pädagogik*, an ambiguous concept, which encompasses the 'reality of education', reflections on the 'reality of education' (and thus a focus on educational practice), and scientific analysis of and research into the 'reality of education', was the generally dominant communal term. This concept entailed a close connection between theory and practice. It is particularly favored in the tradition of the *Geisteswissenschaften* (liberal arts), and, even if one speaks of *Allgemeine Pädagogik* (general pedagogy), (e.g., Wilhelm Flitner), it implicitly refers to schools and teacher training. The “scientific character” of pedagogy (at universities!) was always closely linked to issues of status, reputation, and qualification<sup>20</sup>.

This changed in the 1960s and 70s in the wake of educational reforms, the expansion of the education system and the science of education in Germany. After the first permanent institutionalization of the science of education at universities during the Weimar Republic, its less creditable arrangement with National Socialism and the ‘resurrection’ of the second generation after World War II<sup>21</sup>, it was the third

2006, 32(2), pp. 159-176. Against this background, we consider the translation “empirical educational research” to be appropriate and interpret the word *Bildung* as meaning “education”.

<sup>20</sup> E. Keiner, *Erziehungswissenschaft 1947-1990. Eine empirische und vergleichende Untersuchung zur kommunikativen Praxis einer Disziplin*, Weinheim, Deutscher Studien Verlag, 1999, pp. 127 f.

<sup>21</sup> L. Helm, H.-E. Tenorth, K.-P. Horn, E. Keiner, *Autonomie und Heterono-*

generation that successfully set in motion a renewal from the spirit of its own tradition in the context of social transformations.

Critical pedagogy opposes the apologetic tendencies of its academic forefathers, takes up the theories, analytical perspectives, and research results of socio-critical social science, and replaces the *Geisteswissenschaften* with a broader reading of Max Horkheimer, Theodor W. Adorno and especially Jürgen Habermas. The traditional concept of *Pädagogik* was increasingly replaced by that of *Erziehungswissenschaft* in order to make clear the increased social and human science focus and the increased “scientification” of teacher education and the training of pedagogical professions. However, the “exit” from the *geisteswissenschaftliche Pädagogik* not only led to a critical science of education, but also opened up the option to adopt the traditions of empirical educational research, which were relatively under-developed in Germany<sup>22</sup>.

Heinrich Roth’s famous lecture (1962) on the “Realistic Turn in Educational Research” called for greater consideration of empirical and experimental methods and research<sup>23</sup>. This “realistic turn”, however, was set against the broader philosophical and methodological context of “critical rationalism”, as discussed by the Wiener Kreis and by Karl Popper.

*mie. Erziehungswissenschaft im historischen Prozeß*, in “Zeitschrift für Pädagogik”, 36, pp. 29-49; C. Kersting, *Pädagogik im Nachkriegsdeutschland, Wissenschaftspolitik und Disziplinentwicklung 1945-1955*, Bad Heilbrunn, Klinkhardt, 2008.

<sup>22</sup> Cf. M. Depaepe, *Zum Wohl des Kindes? Pädologie, pädagogische Psychologie und experimentelle Pädagogik in Europa und den USA 1890-1940*. Weinheim, Deutscher Studienverlag, 1993; C. Gräsel, *Was ist Empirische Bildungsforschung?*, in H. Reinders et al. (a cura di), *Empirische Bildungsforschung*, Wiesbaden, VS Verlag, 2011, pp. 13-27 (19); H. Ditton, *Entwicklungslinien der Bildungsforschung. Vom deutschen Bildungsrat zu aktuellen Themen*, in H. Reinders et al. (a cura di), *Empirische Bildungsforschung*, Wiesbaden, VS Verlag, 2011, pp. 29-42 (29).

On ambivalences in the history of concepts and impact of Heinrich Roth see A. Hoffmann-Ocon, *Die realistische Wendung als geisteswissenschaftliches Projekt? – Bildungshistorische und disziplintheoretische Annäherungen an paradoxe Entstehungszusammenhänge* (pp. 35-49) and T. Fuchs, *Pädagogik als Disziplin: Philosophisch, empirisch, beides oder gar nichts? Beobachtungen zur Konstitution der Pädagogik am Ausgang und in Fortführung der „realistischen Wendung“* (pp. 71-85), both in E. Glaser, E. Keiner (a cura di), *Unschärfe Grenzen – eine Disziplin im Dialog. Pädagogik, Erziehungswissenschaft, Bildungswissenschaft, Empirische Bildungsforschung*, Bad Heilbrunn, Klinkhardt, 2015.

<sup>23</sup> H. Roth, *Die realistische Wendung in der pädagogischen Forschung*, in “Neue Sammlung”, 1962, 2, pp. 481-491.

“From pedagogy to the science of education” (*von der Pädagogik zur Erziehungswissenschaft*) became the slogan. This paradigm of an Empirical Science of Education was then also directed against the critical theory in education, which had been reviled as “Marxist”<sup>24</sup>.

## 2.2 From *Erziehungswissenschaft* (which roughly means science of education) to *Bildungswissenschaft* (which roughly means science of Bildung)

The expansion and shift of the term *Erziehungswissenschaft* towards *Bildungswissenschaft* can be traced back to processes that were influenced by the expansion of the science of education in the 1970s with changes of functions and internal differentiations (that were also relevant to the transition between generations):

The science of education became one of the largest university subjects<sup>25</sup>, which – in addition to teacher education – organized study programs in German-speaking regions relating to core subjects: social pedagogy, adult education, media education, leisure pedagogy etc.

The concept of *Bildung* enjoyed a new upswing for several reasons. On the one hand, the introduction of core subject courses and internal differentiation between disciplines led to the concept of education (defined as intentional action to bring about change in behavior) appearing too narrow to be able to carry reflection and research beyond childhood and adolescence; the concept of *Bildung* seemed more appropriate and comprehensive. *Bildungswissenschaft* thus appeared to be less technological, more subject-focused and related to students’ lived experience, critical, more far-reaching and a more demanding concept and discipline, especially in contrast to teacher education, which was now understood as a composite field of study rather than an intellectual disci-

<sup>24</sup> W. Brezinka, *Von der Pädagogik zur Erziehungswissenschaft. Eine Einführung in die Metatheorie der Erziehung*, Weinheim, Beltz, 1971; W. Brezinka, *Die Pädagogik der Neuen Linken – Analyse und Kritik*, Stuttgart, Seewald, 1972.

<sup>25</sup> Cf. J. Baumert, P. M. Roeder, *Expansion und Wandel der Pädagogik. Zur Institutionalisierung einer Referenzdisziplin*, in L.-M. Alisch, J. Baumert, K. Beck (a cura di), *Professionswissen und Professionalisierung*, Braunschweig, TU Braunschweig, 1990, pp. 79-128; J. Baumert, P. M. Roeder, „Stille Revolution“. *Zur empirischen Lage der Erziehungswissenschaft*, in H. H. Krüger, T. Rauschenbach (a cura di), *Erziehungswissenschaft. Die Disziplin am Beginn einer neuen Epoche*, Weinheim, München, Juventa, 1994, pp. 29-47; T. Rauschenbach, *Sind nur Lehrer Pädagogen? Disziplinäre Selbstvergewisserungen im Horizont des Wandels von Sozial- und Erziehungsberufen*, in “Zeitschrift für Pädagogik”, 1992, 38, pp. 385-417.

pline in a proper sense.

On the other hand, critical educationalists in particular took a critical look at the strong focus of empirical educational research on the school system, seeming to ignore the autonomous individual and its critical importance for *Bildung*. With the critique of “cold” (quantitative) empirical and technological methods (and of systems theory), qualitative methods gained ground, conquering new terrain through an emphasis on the individual and more sensitive methodological approaches.

Finally, the new generation turned away from the traditional philosophy of science, which had to some extent degenerated into a creed, and towards the sociology and history of knowledge<sup>26</sup>.

Heinz-Elmar Tenorth had already pointed out that “the crises of theorists are not the crises of theory”<sup>27</sup>. Against the background of significant change, it is hardly surprising that there were also changes in the perception of crises. The scientific nature of the science of education was repeatedly emphasized, and attempts were made again and again to redefine and legitimize its position within the ‘orchestra of research disciplines’, at least at universities. It is therefore not really possible to identify any linear development of concepts and patterns of argument since the 1970s and 1980s; they are still in evidence today. However, one can certainly identify – *cum grano salis* – this open, contradictory, diverse, dynamic, and confusing “*Bildungswissenschaft*” as a product of the fourth academic generation.

### *2.3 From Science of Bildungswissenschaft (which roughly means science of Bildung) to Empirische Bildungsforschung (which roughly means empirical educational research)*

The link between the concepts, arguments and self-designations outlined above and specific generations becomes clear, however, when one considers the investigations by Kuckartz and Lenzen on the situation of emerging researchers in the science of education and on the need for turnover in personnel<sup>28</sup>. Here it became clear that the ex-

<sup>26</sup> T. S. Kuhn, *The Structure of Scientific Revolutions*, Chicago, University of Chicago Press, 1962.

<sup>27</sup> H.-E. Tenorth, *Die Krisen der Theoretiker sind nicht die Krisen der Theorie*, in “*Zeitschrift für Pädagogik*”, 1983, 29, pp. 347-358.

<sup>28</sup> U. Kuckartz, D. Lenzen, *Die Situation des wissenschaftlichen Nachwuchses*

pansion in personnel in the discipline had come to an end and that the age of the staff employed in the discipline meant that there was increased need for newcomers to replace them. At the same time, major studies on academic production clarified three issues that were relevant going forward: a) increasing political influence on the part of large research organizations; b) expectations that social science research methods and (quantitative) gold standards of empirical research techniques would be used; c) the increasing visibility and relevance of research through expertise and commitment, policy advice, public relations work, international networking and participation.

The fact that this was not only about demand but also about real money was impressively demonstrated early on by Weishaupt's study, which shows a continuous transfer of funds for research and development from universities to research institutions<sup>29</sup>. This also meant that the science of education had to define itself (and compete) less through a particular disciplinary approach of scholarly communication, but through organizational profiles (research institutions or universities), and in the case of universities, through particular locations (*Länder*)<sup>30</sup>. In addition, the science of education continued to be attached to teacher education, which used and managed to stabilize the term “*Bildungswissenschaft*” to refer to a mishmash of subject teaching, pedagogical psychology and the science of education<sup>31</sup>. Last but not least, the effectiveness of teacher education and the practical relevance of these components of the science of education have since then been under regular scientific scrutiny. This did not, however, lead to

*im Fach Erziehungswissenschaft*, in “*Zeitschrift für Pädagogik*”, 1986, 32, pp. 865-877; U. Kuckartz, D. Lenzen, *Daten zur Stellensituation in der deutschen Erziehungswissenschaft und zu den Chancen des wissenschaftlichen Nachwuchses*, in “*Erziehungswissenschaft*”, 1994, 5(9), pp. 130-143.

<sup>29</sup> H. Weishaupt, *Die finanziellen Ressourcen der Bildungsforschung*, in “*Zeitschrift für erziehungs- und sozialwissenschaftliche Forschung*”, 1985, 2, pp. 81-112.

<sup>30</sup> There was also a parallel strengthening of New Public Management evaluation and performance measurement (see M. Lawn, E. Keiner, *Editorial - ‘The European University: between governance, discipline and network’*, in “*European Journal of Education*”, 2006, 41(2), pp. 155-167; for Italy see S. Hofbauer, B. Gross, K. Karlics, E. Keiner, *Evaluation, Steuerung und Vermessung als Elemente von sprachlich-kulturell geprägten Forschungs- und Publikationskulturen. Erziehungswissenschaft in Italien und Deutschland*, in “*Zeitschrift für Pädagogik*”, 2022 (in press).

<sup>31</sup> E. Terhart, ‘*Bildungswissenschaften*’: *Verlegenheitslösung, Sammelkategorie, Kampfbegriff?*, in “*Zeitschrift für Pädagogik*”, 2012, 58(1), pp. 22-39.

conceptual clarity<sup>32</sup>.

As a consequence, it became more and more difficult to justify and defend the theoretical and methodological diversity or “plurality” in the science of education against the accusation of disciplinary “complexity” and arbitrariness of methods and subject areas<sup>33</sup>. The science of education thus entered into a precarious relationship to the politics of research.<sup>34</sup> From the end of the 1980s, neoliberal ideas of control flew into this legitimacy gap, promising – including with regard to internationalization and the building of a “knowledge society” and “knowledge economy”<sup>35</sup> – aiming to dynamize the science’s system and increase its efficiency by means of market-based competitive strategies. In this context, the scientifically justified and self-regulated relationship within the discipline between (self-)analysis and criticism, was transformed into an administrative, political, criteria-based relationship, centered on power, procedures, and contract management.

Such organizational bottlenecks also explain part of the upswing in *Empirischer Bildungsforschung* (empirical educational research), which is indeed politically and administratively close to, and strongly anchored in, research institutions and emphasizes evidence-based research<sup>36</sup>. The rise of *Empirische Bildungsforschung* is – including in the context of the German “PISA shock” – closely connected with a focus on schools, classrooms and teaching and learning research, and the acquisition of third-party funds, in particular from this sector.

<sup>32</sup> F. Schreiber, C. Cramer, *Towards a Conceptual Systematic Review: Proposing a Methodological Framework*, 2022 (Under review).

<sup>33</sup> F. Heyting, H.-E. Tenorth, *Pädagogik und Pluralismus. Deutsche und niederländische Erfahrungen im Umgang mit Pluralität in Erziehung und Erziehungswissenschaft*, Weinheim, Deutscher Studienverlag, 1994; R. Uhle, D. Hoffmann, *Pluralitätsverarbeitung in der Pädagogik. Unübersichtlichkeit als Wissenschaftsprinzip?*, Weinheim, Deutscher Studienverlag, 1994.

<sup>34</sup> Cf. E. Keiner, G. Pollak (a cura di), *Erziehungswissenschaft: Wissenschaftstheorie und Wissenschaftspolitik*, Weinheim, Deutscher Studien Verlag, 2001.

<sup>35</sup> OECD, *Knowledge Bases for Education Policies*, Paris, OECD, 1995; S. Hofbauer, *Von Action Research zu Policy Experimentation in Education. Die Verschränkung von Bildungsforschung und Bildungspolitik in Dokumenten der OECD/CERI seit den 1990er Jahren*, in U. Binder, W. Meseth (a cura di), *Strukturwandel in der Erziehungswissenschaft. Theoretische Perspektiven und Befunde*, Bad Heilbrunn, Klinkhardt, 2020, pp. 157-170.

<sup>36</sup> E. Keiner, *Evidenzbasierte Pädagogik ohne historische und vergleichende Kontexte? Fragen und Befunde der Wissenschaftsforschung der Erziehungswissenschaft*, in J. Bellmann, T. Müller (a cura di), *Wissen, was wirkt. Kritik evidenzbasierter Pädagogik*, Wiesbaden, VS Verlag, 2011, pp. 217-234.

“*Bildung*” thus refers first and foremost to “institutionalized education”<sup>37</sup>, that is, to schools.

The mixture outlined above not only had (and still has) a significant impact on emerging researchers but is also important with regard to staff recruitment and cohorts. The narrow methodological and thematic focus on ‘evidence-based research’ has led and continues to lead not only to a change in the allocation and designation of professorships, but also to an increase in the appointment of personnel from psychology and sociology, and also from the technical sciences to doctoral and post-doctoral positions. The strong political and public influence of such ‘factories of educational expertise’ meant that researchers emerging from within the discipline increasingly had to gain qualifications in research (and teaching) with regard to data collection and the application of the gold standards of social science research. The standardization of research methods has led to the disappearance of a wide range of scientific cultures. Is the science of education becoming a “unified-insular discipline”?

### 3. Outlook

From a historical, diachronic (time) perspective, it is evident that there are relationships between generations, and, taking a psychoanalytical approach, even Oedipal constellations and entanglements within academia. It is also possible to identify dialectics or dualisms between movements and counter-movements: scholarly reflection versus empirical research, petty bourgeoisie versus upper class academics, scholarly elites, practicing elites, normative commitment versus intellectual distance, national versus international references and networks. Processes of differentiation and hierarchization are also always involved, making it even more difficult for emerging researchers to plan their careers due to increasing individualization, competition and the higher risks associated with career decisions. In this context and in the context of a social epistemology, we also need to take into account the productive and innovative contributions of the new generation of scientists. They may stand ‘on the shoulders of giants’<sup>38</sup>, but they therefore nevertheless are able to see further ahead. They thus reflexively in-

<sup>37</sup> C. Gräsel, *Was ist Empirische Bildungsforschung?*, cit.

<sup>38</sup> R. K. Merton, *On the shoulders of giants: A Shandean postscript*, San Diego, Harcourt Brace Jovanovich, 1985/1965.

tertwine the search for 'truth' with processes of their own academic socialization, defining 'the new' in a generation-specific way – sometimes even against pushback from former generations.

But, for the time being, these considerations are all limited to Germany. Against this background, it would be interesting to know whether there are similar conceptual shifts, changes in frames of reference and/or disciplinary, organizational, or political contexts in other countries, scientific cultures and disciplinary structures. Which theoretical and methodological concepts, or which social or disciplinary patterns, then constitute the discipline? What are the theoretical and methodological relationships between the older generation and the younger? How does innovation emerge? On which concepts of progress and in relation to which norms is the process of (educational) scientific/scholarly development based? Similar and further questions could be addressed to colleagues in Sweden, Finland, Portugal, Spain, the Czech Republic, Latvia, Poland or Greece, etc.

What we currently have, however, is a synchronic perspective: a comparison of different concepts and terms in different scientific cultures with different frameworks of interpretation and reference. Which "styles of thinking"<sup>39</sup> can be distinguished and how can such distinctions be used productively? What do "internal" and "external" mean in connection with disciplinary demarcations? Is there any common internationalized understanding of any specifically European science of education or at least the idea of a process of "Europeanization", which promotes diversity, shared values, sound research and intellectual delight?

This list of questions could also be extended, and it would be interesting to discuss categories and criteria with colleagues from other countries and scientific cultures. We even could perhaps try to undertake joint mapping of the results, so as to move towards a "social epistemology" by not separating but analytically distinguishing between different aspects, in particular in terms of philosophy, sociology, the history of ideas, social history, and normative and analytical perspectives.

In the end, the questions remain, and – as perhaps befits a critical general pedagogy – it is a matter of asking more precise questions and

<sup>39</sup> L. Fleck, *Genesis and Development of a Scientific Fact*, Chicago, Chicago University Press, 1979; L. Fleck, *Denkstile und Tatsachen*, Frankfurt, Suhrkamp, 2019.

ensuring that challenging and interesting questions are not met with rash answers. In any case, the potential to learn from each other is far from exhausted!

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