Dyskursy Młodych Andragogów / Adult Education Discourses • **26/2025**
CC BY 4.0 • ISSN 2084-2740 • e-ISSN 2719-9312 • https://doi.org/10.61824/dma.vi26.774 • s. 1-15

Bernhard Schmidt-Hertha*

EPISTEMOLOGICAL AND METHODOLOGICAL FOUNDATIONS OF ADULT EDUCATION RESEARCH – A PERSONAL STATEMENT

ABSTRACT: This text outlines the author's personal epistemological and methodological foundations in adult education research, emphasizing a journey of continuous learning and openness. It is written on the basis of 25 years of research experience and many empirical projects. One main thesis is that a curious and open approach to research paradigms is crucial, alongside lifelong learning research. Further, maintaining clear epistemological and philosophical positions is essential to avoid arbitrariness.

Here a constructivist view is adopted, acknowledging that the social world is interpreted and meaning-laden, interpretations are shaped by shared patterns (culture, language) and individual experiences. However, social structures and inequalities, while socially constructed, impact individual actions. Social phenomena in this sense are both objectively structured and subjectively interpreted. Thus, research must address the interplay of individual agency and social structures.

A pragmatistic methodology, advocating for flexible method selection based on the research question, is put at the forefront. Pragmatism acknowledges the context-dependent nature of research and the influence of researchers' beliefs. Aiming for use-inspired basic research, generalizable knowledge derived from real-life problems should be addressed. Research can inform pedagogical practice by offering new perspectives and challenging traditional interpretations. At the same time, one has to be aware that research findings are subject to diverse interpretations, requiring clear and honest communication.

Regarding the concrete realization of research projects, the article argues for selecting methods carefully and considering a range of factors. Ethical considerations are paramount, and the pros and cons of mixed-method designs are discussed. Certain preconditions that are relevant for all research projects are examined here, namely openness, teamwork and collaborative exchange, continuous dialogue, networking, and time.

KEYWORDS: epistemology, methodology, constructivism, agency, pragmatist methodology.

An autobiographical introduction

At the end of my studies, which I had geared towards my desire to work practically in education, I had a basic knowledge of history and of some of the traditions of pedagogical thought and I learned how to deal with quantitative data. Apart from that, I knew little about research and science. It was only during my doctorate – despite or perhaps because of my clear empirical orientation – that I began to explore various theoretical approaches in greater depth and learned in particular from the close exchange with professors and colleagues who represented very different perspectives on educational theory. I learned a lot from my supervisor and mentor about the planning,

* **Bernhard Schmidt-Hertha** – Ludwig-Maximilians-Universität München, Faculty for Psychology and Pedagogy, Germany; e-mail: b.schmidt@edu.lmu.de; ORCID: https://orcid.org/0000-0001-5659-7115.

implementation, and presentation of results of complex empirical research projects, collaboration in consortia and teams, the importance of networks, and, in particular, about the importance of having an open and appreciative approach to other academic positions and paradigms. Through the close exchange with a colleague from the field of historical pedagogy, I learned that certain fundamental questions of our subject and answers to them are constantly being rediscovered and reformulated in different eras, but ultimately always seem to be present. At the same time, she also taught me to critically question the historical conditionality of research and its rootedness in social dynamics based on the interweaving of reform pedagogy and nationalist ideas. Nevertheless, even after completing my doctorate and habilitation, I had only become acquainted with a small part of the social science schools and paradigms. It was only through my involvement in an international research community, through temporary professorships at two other universities, and then through my first permanent professorship at the University of Tübingen that opportunities arose to engage with other paradigms and scientific theoretical positions through contact with many colleagues. As part of the planning and realization of a research training group together with colleagues at the University of Frankfurt, the different approaches and positions in the theory of science became apparent and at the same time, all participants were forced to deal with the perspectives of the others. It was precisely this heterogeneity that was highly productive academically and I have never experienced this again in any other context. Central to the success of this research context was undoubtedly the willingness of everyone to engage openly and respectfully with other positions and a different understanding of research, which I had already experienced and learned in exchange with colleagues from other countries.

This curious and open approach to other research paradigms and theoretical traditions and the interest in understanding them is perhaps the most important starting point for my academic work today. This goes hand in hand with the necessity and willingness not only to research lifelong learning but also to practice it and to repeatedly venture into at least partially unknown territory, even at an advanced stage of my academic career. However, it also seems all the more important to be sure of one's own basic epistemological and philosophical positions so that openness does not degenerate into arbitrariness. Explicitly defining this position is rarely demanded and is often only implicitly recognizable in publications and lectures (see Brühl, 2017), which is why the invitation to examine this position here is challenging but also very welcome.

To do justice to this task, I will first address the central epistemological foundations of my work (section 2) – i.e. the question of how we can recognize reality and what role science plays in this. Building on this, I attempt to define the epistemological position of my work (section 3), which ultimately also has far-reaching methodological

consequences. Likewise, epistemological goals (section 4) can be derived from this – although epistemological and theoretical positions do not determine these goals. Finally, the question then arises as to the paths that lead to these epistemological goals – i.e. methodological approaches (section 5), from which in turn prerequisites for research projects can be derived (section 6). However, personal working methods, values, and individual working styles also play an important role in these prerequisites, as do the organizational and institutional framework conditions of this activity. Some concluding remarks (section 7) then lead to a plea for more scientific openness and a willingness to engage in collaboration with researchers who represent other methodological traditions.

Epistemological foundations

In terms of epistemology, two questions seem central to me:

- Is there a world that exists independently of the individual's perception?
- And if so, are there ways of recognizing and describing this world?

At least for the social world, the latter question can be answered in the negative. The world as we perceive it is always already an interpreted world and without these interpretations, we would not be able to recognize anything (Schütz, Staubmann & Lidz, 2018). This means that a text, a concept, or an encounter only becomes what it is when a meaning is ascribed to it. This work of interpretation is based on shared patterns of interpretation (culture, language, shared knowledge, etc.) but is also based on individual biographical layers of experience (Berger & Luckmann, 2016). Neither the shared nor the individual parts of interpretations can ever be completely caught up with and apprehended reflexively. Our awareness of the experiences and knowledge that shape our worldviews inevitably remains incomplete, and even more so our awareness of the perspectives of others. Following Winfried Marotzki's concept of education theory, which links education with the recognition of the subjectivity of the reality of the world reference as well as with the awareness of one's construction of the world as such (Marotzki, 2003), the scientific exploration of the world should also be aware of this constructed-ness and make it the starting point for the interpretation of findings and the reflection of one's perspective.

With the realization that the (social) world only makes sense in some way through interpretations (Berger & Luckmann, 2016), the first question – is there a world that exists independently of the individual's perception? – can also be answered in the negative. Physically speaking, there is (presumably) matter outside our minds. However, everything that goes beyond this realization is linked to the attribution of meaning by the people who perceive this matter. The distribution of collectively shared and individual patterns of interpretation and relevance varies depending on what is made

the object of observation. The question of whether someone can read and write, i.e. whether a person has the possibility of written communication, is perceived to be relevant in most contemporary societies, even if the individual importance attached to the ability may vary. On the other hand, the question of why person X does not participate in further education is probably only relevant to a few people and will be answered very differently depending on the relative perspective adopted. Science can then contribute to making inter-individually shared perceptions visible and attempt to understand social action from the perspective of the actors.

The role of power structures and social inequality

At the same time, this constructivist perspective harbors the danger of ignoring power structures and inequality in our societies or understanding them merely as the product of individual constructions. Beyond the question of the individual interpretation and use of life opportunities and possibilities for action, these are obviously not distributed equally. Material and immaterial social resources – from wealth to opportunities for participation – are unequally distributed. Although the meaning attributed to these resources can in turn be understood as socially constructed, it is an attribution that is widely shared among people and can be considered consensual and can therefore serve as a starting point for social science research. Social structures, inequalities, and structures of possibility can therefore only be described in a scientifically sound manner if certain shared patterns of interpretation are assumed to be generally accepted. In other words, the social actions of individuals can only be understood by considering their patterns of interpretation and world views, which must also be interpreted against the background of social structures and unequal living conditions. Research must therefore rise to the challenge of breaking down the complex interplay between individual actions and inter-individual structures (see Chambliss & Schutt, 2024). It is therefore also a question of what options for action (agency) are open to the actors, how do they perceive them and make use of them?

The dynamics of change

However, this is not just about snapshots and the description of a status quo, but about changes on a structural and individual level. Both empirically and in terms of educational theory, it is necessary to assume that social conditions are changeable and constantly changing and to ask about the dynamics, variables, and the ability to shape these changes. Accordingly, these dynamics of change at a personal, interpersonal, organizational, and structural level are of particular interest and at the same time can only ever be captured to a limited extent and in part using social science methods. However, scientific approaches – despite or even because of their perspectivity – enable

a broader insight into these changes and allow the formulation of theses (that are always provisional) regarding connections and interactions on the different levels of questions posed by social science research.

Three consequences for social science

The epistemological starting point outlined here has three main consequences for direct scientific work:

- Firstly, an awareness of the narrow limits of one's own cognitive possibilities is called for, over and above every form of methodological care taken in research. Thus, a certain degree of scientific humility towards the complexity and perspectivity of social phenomena – especially learning and educational processes – is required.
- Secondly, against this background, research findings provide only one perspective on social realities, but one that is often helpful and opens up new insights and – depending on the approach – can make individual or inter-individual constructions of reality understandable or make structural conditions of social action visible and open to criticism.
- Thirdly, this epistemological starting point in no way prejudices a particular methodological orientation. Every methodological paradigm always remains deficient and limited here, but at the same time also offers possibilities for the construction of reality and thus for a gain in knowledge.

Point of origin in philosophy of science

John W. Creswell (2003) proposes the differentiation of four central paradigms for the theoretical positioning of research approaches.

(1) Postpositivism is based on the principle of the measurability of social phenomena and the reduction of the complexity of social realities to investigate the effects and correlations of individual variables. The focus is on theory-based empirical observation and testing of hypotheses and thus a theory-testing approach. Critics of this approach point to the problem of reducing complexity and the associated risk of lower ecological validity (see also Blumer, 1969), the insufficient potential for theory development, and above all the idea of researchers as neutral observers, which is criticized as naïve.

(2) Constructivism, which to a certain extent can be understood as a counter-design to a positivist approach. The focus is on an understanding approach to the social world that is aware of the contingency of patterns of interpretation and scientific interpretations and analyses the phenomena studied in their social and historical context. Instead of theory-testing, the focus here is on theory development. Criticism of this approach relates above all to the low degree of standardization of the procedure and the associated

non-replicability of results. Concrete derivations for the design of pedagogical practice are also less to be expected here.

(3) Advocacy/participatory research as an approach that understands science and research as political. Here, researchers act as advocates for those being researched or support their goals and concerns. Based on the empowerment approach, collaborative and participatory research approaches (see Cornwall & Jewkes, 1995) are actively advanced and scientific work is also measured by the resulting changes in the field under investigation. Here, science abandons its striving for a neutral position and sees itself as a political actor and jointly responsible for what it investigates. This position is rejected by critics as biased, partly because there is a fear that the results will be distorted in favor of political objectives and thus no fundamental contribution to scientific knowledge seems possible.

4) The approach favored by Creswell, which he refers to as pragmatism, asks above all about the consequences of social actions and thus seems particularly suitable for the scientific monitoring of interventions and educational measures. Building on the work of John Dewey, it is argued that a strict separation of research paradigms is unhelpful and rather detrimental to the acquisition of knowledge. The focus is on the open choice of research methods that are appropriate to the respective subject matter and not restricted in advance by scientific theoretical positioning. This open and unbiased search for answers, which Dewey describes with the term "inquiry", is not independent of the respective contextual factors and the researchers themselves, as "pragmatism insists on treating research as a human experience that is based on the beliefs and actions of actual researchers" (Morgan, 2014: 1051). In this respect, pragmatism – in a manner similar to constructivism – is skeptical about the pursuit of knowledge that is independent of individuals and contexts but does see the possibility of recognizing fundamental cross-case patterns in observed cases and of thus arriving at findings that point beyond the specific object of investigation. At the same time, research results remain dependent on the goals, intentions, and questions of the researchers and in turn influence the starting conditions for further research work (Morgan, 2014).

Pragmatism thus offers a way out of the seemingly unresolvable incommensurability of post-positivist, constructivist, and advocationist understandings of science. For educational research, this opens up the possibility of being aware of the uniqueness of observed phenomena without being blind to the references to underlying, cross-case dynamics embedded in them. It can search for fundamental principles without falling prey to the naive idea that the subjectivity of research and research results can be overridden by standardization alone. It can provide us with findings that enable concrete practical and (educational) policy deductions, but it must always be aware of its intentions and their influence on the research process and reflect on these (self-)critically.

It must be assumed that social phenomena are based on structures that can be described as objectively given conditions on the one hand, but whose meaning and relevance only emerge through the individual perspectives of the actors involved on the other. In my view, a pragmatist understanding of science therefore always implies an awareness of and consideration for the difference between different perspectives on social facts. This perspectivity should not be seen as a disturbing factor, but rather as the only way to understand social action. Against this backdrop, the inclusion of different perspectives is not important because it allows an objective reality to be better captured, but because the different realities of those involved are considered and thus possible changes and interventions can be reflected from the perspective of the various participants and those affected.

Cognitive objective

This already formulates an essential knowledge objective. Research, as I understand and conduct it, is about better understanding complex social contexts and thus supporting a knowledge base for the planning and realization of measures and action strategies. According to Donald E. Stokes (1997), this can be described as use-inspired basic research. In his "Pasteur's quadrant" (Figure 1 below), Stokes differentiates between three forms of research, which are classified according to their basic and application orientation. Use-inspired basic research differs from pure basic research, which focuses on findings that are as generally valid as possible without considering their relevance for social action as a criterion for the selection of the research object or the evaluation of the results. Pure applied research, on the other hand, focuses on the evaluative assessment and improvement of individual measures and is not aimed at uncovering principles and connections that go beyond the specific context of the study. Use-inspired basic research aims to do just that. The aim is to gain generalizable knowledge

		Considerations of Use?	
		No	Yes
Quest for Fundamental Understanding?	Yes	**Pure Basic Research**	**Use-inspired Basic Research (Pasteur)**
	No		**Pure Applied Research (Edison)**

Figure 1: Pasteur's Quadrant (Stokes, 1997)

and a fundamental understanding of social dynamics, whereby the questions guiding the findings are derived directly from real-life action requirements and problems. In other words, it is about gaining fundamental insights to use this knowledge to improve pedagogical action or stimulate concrete measures.

The idea of use-inspired basic research is therefore about the fundamental understanding of perspectives, developments, and processes as well as contexts and interactions in a field of research in order to derive practice-relevant knowledge from these findings. In this sense, science does not see itself as the dominant or even the only way to further develop pedagogical practice and respects the inherent logic of pedagogical fields of action. However, scientific findings can stimulate pedagogical practice by offering new perspectives, posing different questions, and providing new possibilities for interpretation. In this way, they can challenge traditional patterns of interpretation and stimulate innovative approaches to solutions (see Kieser & Leiner, 2009). Scientific findings therefore do not compete with the empirical knowledge of pedagogical practitioners but rather offer a (further) basis for reflection and new impulses to challenge, rethink or expand this practical knowledge.

Professionalisation through reflection

Research understood in this way can also be seen as a contribution to the professionalisation of pedagogical action by offering opportunities for reflection and strengthening the ability of professionals to reflect. The ability to reflect on one's actions is often seen as a central characteristic and essential criterion of professionalism, especially in pedagogical fields of action (see Cramer et al., 2019). This is based on the assumption that only by repeatedly questioning one's interpretations, perspectives, and assumptions is it possible to continuously develop the competence to act and the quality of professional action. Research then has the task of offering the appropriate occasions and stimuli for this and providing alternative patterns of interpretation.

Reading findings differently

While pure applied research aims to identify concrete development perspectives and formulate proposals for action, use-inspired basic research provides findings that suggest certain interpretations and interpretations, but which at the same time leave room for interpretation and indeed also require it. As a result, research must also live with the fact that findings are read differently in educational practice or by political decision-makers and that different strategies for action are derived from them, without these readings and conclusions being completely arbitrary and in turn open to criticism. The reception of large and widely discussed public studies, such as PIAAC (see St. Clair,

2016; Grotlüschen et al., 2019; Hamilton, 2018) shows clearly that actors come to very different conclusions depending on which results are specifically taken up and into which interpretation schemes they are classified.

Research ethics, unambiguity and uncertainty

In terms of research ethics, the extent to which scientists are responsible for how their results are received and the consequences of this is a recurring topic of debate. Robert Oppenheimer, who is regarded as the father of the atomic bomb, is often discussed in this context. In the case of social science research, whose subject matter is constantly changing and whose findings are always generated from a specific perspective and with a specific interest in knowledge, the connection between research and its consequences is far less clear, is usually influenced by many other components and is ultimately always contingent in the assessment of the consequences. In my opinion, however, it is still the responsibility of science to communicate its findings in such a way that they are as unambiguous as possible, without concealing the uncertainty and perspectivity of scientific knowledge. It is therefore a matter of communicating research results honestly, clearly, and in a way that is appropriate to the target audience.

The path of knowledge creation and choice of method

The paths that lead to the described knowledge objectives are diverse and are certainly among the central topics of every discipline. There is hardly any other topic that the social sciences deal with as intensively as the methods and procedures they use to generate knowledge. Even if the theoretical starting points described above suggest a certain spectrum of methodological approaches, every scientific project has to deal with the question of the right choice of method anew. The criterion of appropriateness to the subject matter (Strübing et al., 2018) is repeatedly brought to the fore, but this in itself requires interpretation. For an object to be appropriate, it must first be defined. In a broad interpretation, this research object includes not only the field to be researched (Lewin, 1942) but also the central question and the actors involved (researchers, study participants, and other stakeholders). An initial idea for a research design can be developed by ascertaining (1) the researcher's theoretical starting point, (2) the central research interest (research question) of the project, (3) the possible approaches to the field, (4) the anticipated willingness of the research subjects to engage with certain methods or the willingness of key gatekeepers to allow this, (5) the skills and experience of the researchers involved and (6) the available (human, infrastructural and monetary) resources.

Re (1): With a pragmatist understanding of science, there are initially no direct restrictions on the choice of methods. However, this scientific-theoretical position suggests cascading research designs with several successive research steps that relate the knowledge process and the dynamic further development of the object of investigation to each other.

Re (2): Ideally, all considerations should begin with a theoretically derived question that can be justified based on the current state of research. However, this does not mean that it rigidly and unchangeably prejudices the entire process. Research questions can also be modified based on the other points mentioned or due to newly acquired findings (e.g. in grounded theory).

Re (3): Even if field access is not an inherent scientific criterion, but a practical research challenge, it must be considered from the outset. How can and should contact be established with those involved in the study? Are official approvals required and what challenges are to be expected due to the respective field of investigation?

Re (4): Without the support of adult education institutions, for example, it will hardly be possible to research them; without the willingness of learners to participate in surveys, it will not be possible to conduct such surveys. However, it is also a question of which gatekeepers should be involved and how they and those directly involved in the research can be motivated to participate. It is also important to keep the burden on all those involved as low as possible.

Re (5): A research design must of course also consider the experience and methodological skills of the researchers involved. It is certainly not necessary for every member of a research team to be equally familiar with all the planned methods, and research projects are often an opportunity to learn new methods. However, the effort required to familiarize oneself with new methodological approaches should be considered during the planning phase, as should accompanying measures such as consulting experts for the chosen methodological approach. However, there is also a danger in rashly resorting to particularly familiar methods ("If you have a hammer, everything looks like a nail.").

Re (6): Finally, more demanding research projects in particular often require considerable human resources and funds for subcontracting (e.g. in the context of conducting representative surveys). The resources that are available or can be applied for the respective project must be considered at the planning stage. The relevant requirements, possibilities, and limitations vary depending on the research funding program and funding organization. While international funding programs (such as the EU) require the participation of several partners from different countries, national funding programs – at least in Germany – are often linked to specific framework topics or are indirectly limited in terms of the financial volume for individual projects.

Taking the above-mentioned aspects into account, a research plan can be drawn up, which then has to be checked for its ethical justifiability (Hedgecoe, 2008). The central question here is whether the planned study could have any negative consequences for those directly or indirectly involved and whether the burden on the people involved in the research (time required, cognitive and mental stress, etc.) stands in an acceptable relationship to the expected gain in knowledge. Depending on the study design, technical classification, and national requirements, it may also be necessary to involve the relevant ethics committee.

Appropriateness and mixed methods

In awareness of the dependence of research results on the chosen methodological approaches and the dictum of appropriateness concerning the object of research as the basis for the choice of social science research methods, mixed methods designs are increasingly being used in adult education research. Different patterns of justification can be identified here (Schmidt-Hertha, 2020), but these are often not unproblematic. For example, the frequently cited argument of wanting to cross-check the results of one method with another seems problematic insofar as different methods naturally lead to different results or different perspectives and can therefore hardly validate each other (Blaikie, 1991). It seems more convincing to subdivide the research interest into different sub-questions, each of which suggests different methodological approaches and thus allows mutually complementary results to be expected (Glaser, 2001). In doing so, explorative-understanding approaches can also be combined with standardized-hypothesis-testing approaches, thus combining qualitative and quantitative research methods in the sense of a close mixed-methods understanding. However, the combination of different data formats and evaluation methods within one paradigm can also be useful – depending on the respective research object and research questions. Finally, it should be emphasized that although we have often combined different methodological approaches in different ways in our studies, in many research contexts monomethod designs are also appropriate as the method of choice. Irrespective of the methodological design of the respective study, there are several prerequisites that I consider to be central to the success of research projects.

Preconditions

In the practical realization of research work, many concrete prerequisites can certainly be formulated and constellations of conditions described. I would like to pick out four of these that play a central role in many research projects and which, in my opinion, do not always receive the necessary attention.

Openness to alternative approaches

(1) The openness of all researchers involved (see Olmos-Peñuela, Benneworth, & Castro-Martínez, 2015) towards alternative approaches, but also towards unexpected results is a very important prerequisite for the realization of scientific projects – regardless of whether they are implemented in a team or by individuals. Only if this openness exists can it be ensured that methodological approaches are chosen primarily according to their appropriateness to the research object, that results are not prejudiced by theoretical dogmas and that new, unplanned results are also possible. This does not mean that the influence of theoretical starting positions and perspectives on the results of studies should be denied or prevented, but that there must be an awareness of this perspectivity among researchers and a willingness to critically question the appropriateness of certain theoretical assumptions again and again. At a very basic level, however, openness also means being aware of the contingency of one's own decisions in the research process – starting with the choice of theory and method – and looking at alternative approaches in a correspondingly respectful and appreciative manner.

The centrality of dialogue

(2) Particularly in the tradition of humanities research, major advances in knowledge seem to be linked to individual people and their thinking right up to the present day. This impression is deceptive insofar as, even in the humanities, the gain in knowledge was very often the product of dialogue and the joint discussion of scientific problems. In empirical research, the realization of research projects is usually only conceivable as teamwork anyway, since the demands of data collection and analysis would often overtax a single person, but above all the reliability and comprehensibility of findings and interpretations can only be ensured by several participants. In this respect, research is generally a team effort, and the willingness and desire to work together as well as the composition of the group and the associated emotional dynamics are a central criterion for the success of scientific projects (Hubbard, Backett-Milburn & Kemmer, 2001).

Open exchange for quality in research

(3) To realize this teamwork, a continuous open exchange within the project group and beyond is essential. Critical and constructive dialogue about research projects, approaches, and results, whether in the context of working meetings, conferences, courses, or various online formats, is one of the most important instruments of quality assurance in science. Even in the planning phase, the exchange with colleagues provides essential impulses, but especially in the course of project implementation, self-critical reflections within the team as well as the dialogue with professionals from

the respective field to be investigated offer repeated occasions to put the scientific work to the test. A broad network of academics and practitioners who are open to this kind of dialogical exchange requires a great deal of trust in one another, but also the willingness to support each other in their work. I have always found the time involved to be rewarding and productive for everyone involved.

Creative impulses through time out

(4) Finally, creativity researchers repeatedly point out that scientific productivity and inspiration – in addition to functioning teamwork (Burbiel, 2009) – also require time and leisure (e.g. Loehle, 1990). Phases of relaxation, pausing and switching off within an often hectic everyday life at a university and a blurred distinction between working time and non-working time harbor the danger that research will degenerate into working through work packages and project plans and that there will no longer be any room for new ideas. However, in my personal experience, new research ideas, theoretical impulses, or approaches to interpreting empirical findings often emerge when you have time to rest and let your mind wander.

Beyond these prerequisites for research work – and even more fundamentally – the political and administrative conditions for free science must be in place. However, especially in times of growing anti-democratic forces and autocratic regimes, it must also be clearly stated: The basic prerequisite for all research is freedom of thought and the ability to question everything critically. The limits of what can be said must lie where the dignity of other people is violated, but not in institutional directives, administrative guidelines, or political doctrines. It is worrying that individual countries within Europe are now in the bottom third of all countries in terms of academic freedom (Kinzelbach et al., 2023).

Conclusion

Research, as I experience it, is one of the most varied and self-determined areas of work. This is precisely why it is important to be aware of one's idiosyncrasies and to question one's actions self-critically. I have always found it helpful to engage with other epistemological starting points and different understandings of science. On the one hand, it is important to remain open to new experiences and approaches, to expand or correct one's convictions, and on the other hand – if other positions do not seem convincing – to endure dissent and deal with it constructively. Science as a whole and the social sciences in particular thrive on the diversity of theoretical and methodological positions and can only benefit from this diversity if they embrace it.

Research cannot renounce its shared responsibility for society and its development but must reflect on its contribution to the construction of social reality. Assuming that the contexts and differences we investigate are always socially constructed and are reconstructed and supplemented by new constructions through our scientific work, science cannot withdraw to a purely observer perspective but is an essential part of social events. The more influence scientifically generated knowledge is granted – e.g. in the context of evidence-based policy – the more important it is for researchers to be aware of the scope of their actions and their associated responsibility. However, this also includes honestly communicating the limits of the validity of specific results and scientific procedures as a whole. Scientific knowledge is always subject to the proviso of provisionality and is always incomplete – especially in the investigation of social facts. For example, research work can precisely describe a current situation from a certain perspective and, at best explain its genesis, but can hardly make reliable predictions about the effectiveness of future interventions.

In my opinion, these fundamental scientific-theoretical positions should also be viewed independently of the constantly changing possibilities and methodological developments in social science research. For example, the use of artificial intelligence will also permanently change the possibilities and working methods of research in the field of adult education (Milana et al., 2024). The support of data collection and data analysis through AI is already making it possible to design research processes more efficiently and deal with even larger amounts of data. However, the responsibility for procedures and results can only remain with the human actors, and quality requirements, such as the intersubjective traceability of evaluation steps, will presumably become more important as a result.

References

Berger, P. & Luckmann, T. (2016) *Social theory re-wired*. New York: Routledge.

Blaikie, N. (1991) A critique to the use of triangulation in social research. *Quality & Quantity*, 25, 115-136.

Blumer, H. (1969) *Symbolic Interactionism: Perspective and Method*. Englewood Cliffs: Prentice-Hall.

Brühl, R. (2017) *Wie Wissenschaft Wissen schafft: Theorie und Ethik*. Konstanz & München: UVK.

Burbiel, J. (2009) Creativity in research and development environments: A practical review. *International Journal of Business Science & Applied Management*, 4(2), 35-51.

Chambliss, D.F. & Schutt, R.K. (2024) *Making sense of the social world: Methods of investigation.* London: Sage Publications.

Cornwall, A. & Jewkes, R. (1995) What is participatory research? *Social Science and Medicine*, 14, 1667-1676.

Cramer, C., Harant, M., Merk, S., Drahmann, M. & Emmerich, M. (2019) Meta-Reflexivität und Professionalität im Lehrerinnen- und Lehrerberuf. *Zeitschrift für Pädagogik*, 65(3), 401-423.

Creswell, J.W. (2003) *Research design. Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks: Sage.

Glaser, B.G. (2001) *The Grounded Theory Perspective: Conceptualization Contrasted with Description*. Mill Valley: Sociology Press.

Grotlüschen, A., Thériault, V., Nienkemper, B. & Capstick, T. (2019) Critical viewpoints on adult literacy practices at the time of PIAAC. *International Journal of Lifelong Education*, 38(4), 361-365.

Hamilton, M. (2018) Contributing to the common good? Media coverage of the international largescale assessment of adult skills (PIAAC) in four national contexts. *Studies in the Education of Adults*, 50(2), 167-184.

Hedgecoe, A. (2008) Research Ethics Review and the Sociological Research Relationship. *Sociology*, 42(5), 873-886.

Hubbard, G., Backett-Milburn, K. & Kemmer, D. (2001) Working with emotion: Issues for the researcher in fieldwork and teamwork. *International Journal of Social Research Methodology*, 4(2), 119-137.

Kieser, A. & Leiner, L. (2009) Why the rigour-relevance gap in management research is unbridgeable. *Journal of Management Studies*, 46(3), 516-533.

Kinzelbach, K., Lindberg, S., Lott, L. & Spannagel, J. (2023) *Academic Freedom Index – 2023 Update* [online]. Available at: https://doi.org/10.25593/opus4-fau-21630.

Lewin, K. (1942) Field theory and learning. In: N.B. Henry (ed.) *The forty-first yearbook of the National Society for the Study of Education: Part 2, The psychology of learning*. Chicago: The University of Chicago Press, 215-242.

Loehle, C. (1990) A Guide to Increased Creativity in Research – Inspiration or Perspiration? *Bioscience*, 40(2), 123-129.

Marotzki, W. (2003) Bildung, Subjectivity and New Information Technologies. *Educational Philosophy and Theory*, 35(2), 227-239.

Milana, M., Brandi, U., Hodge, S. & Hoggan-Kloubert, T. (2024) Artificial intelligence (AI), conversational agents, and generative AI: implications for adult education practice and research. *International Journal of Lifelong Education*, 43(1), 1-7.

Morgan, D.L. (2014) Pragmatism as a Paradigm for Social Research. *Qualitative Inquiry*, 20(8), 1045-1053.

Olmos-Peñuela, J., Benneworth, P. & Castro-Martínez, E. (2015) What Stimulates Researchers to Make Their Research Usable? Towards an Openness Approach. *Minerva*, 53(4), 381-410.

Schmidt-Hertha, B. (2020) Mixed Methods in der Übergangsforschung. In: A. Walther, B. Stauber, M. Rieger-Ladich & A. Wanka (eds.) *Reflexive Übergangsforschung. Theoretische Grundlagen und methodische Herausforderungen*. Opladen: Barbara Budrich, 165-181.

Schütz, A., Staubmann, H. & Lidz, V. (2018) The Problem of Rationality in the Social World. In: H. Staubmann & V. Lidz (eds.) *Rationality in the Social Sciences*. Cham: Springer, 85-102.

St. Clair, R. (2016) Plus ça change – The failure of PIAAC to drive evidence-based policy in Canada. *Zeitschrift für Weiterbildungsforschung-Report*, 39, 225-239.

Stokes, D. (1997) *Pasteur's Quadrant: Basic Science and Technological Innovation*. Washington: Brookings Institution.

Strübing, J., Hirschauer, S., Ayaß, R., Krähnke, U. & Scheffer, T. (2018) Gütekriterien qualitativer Sozialforschung. Ein Diskussionsanstoß. *Zeitschrift für Soziologie*, 47(2), 83-100.