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Vacant or viable? Niche as metaphor for understanding the status of German and Canadian research approaches in adult education

Bernd Käpplinger
Justus-Liebig-Universität Gießen, Germany (bernd.kaepplinger@erziehung.uni-giessen.de)

Ralf St. Clair
University of Victoria, Canada (rstclair@uvic.ca)

Abstract

Beginning with Boeren's (2018) or Rubenson and Elfert's (2019) claims of under-recognition of quantitative methodology in adult education, authors use the ecological niche from biology as a metaphorical and heuristic model in order to consider the mechanisms determining the viability of research methodologies in education for adults. The authors discuss ecosystem factors affecting research methodologies and consider the situations of Germany and Canada to illustrate application of the niche metaphor. The conclusion stresses the complementary relevance and integrative value of different forms of research. Addressing diverse questions requires diverse methodologies and a rich ecosystem of resources and research capabilities.

Keywords: quantitative research, Canada, Germany, adult education research, comparative

Introduction

Some years ago, Boeren (2018) wrote on the 'underdog' of quantitative research in adult education journals. Rubenson and Elfert (2019, p. 23) in mapping the international field of adult education research are even more critical in relation to quantitative research: 'Presently adult education scholars are almost exclusively relying on qualitative methodologies, with a few using a mixed method and an almost total absence of pure

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quantitative research.' The conclusion one could draw was a dominance of qualitative research in the field, although we perceive these characterizations as a too far-reaching. Previous research suggests a more nuanced situation. For example, a significant proportion of Adult Education Quarterly (AEQ) journal submissions between 1989 and 1999 were quantitative. Of the 265 quantitative papers and 170 qualitative papers submitted over this decade 24.9% of the qualitative papers and 12.5% of the quantitative papers were accepted, suggesting the issue was not the supply of such work (Taylor, 2001). Education for adults is a complex and diverse discipline, and almost every attempt to generalise across the global field is bound to be problematic. In the same way, there is a need for care when we talk about 'quantitative research' as there are many forms and applications of this broad idea. As a European example, an analysis of the European Society for Research in the Education of Adults conference programmes shows participation of quantitative research is more significant for conferences than for journals (Käpplinger, 2015). This leads to all sorts of speculative explanations, such as junior researchers doing quantitative research, which is easier to get accepted at conferences, or journal reviewers declining more quantitative submissions. Yet another international overview of the field indicates the relative health of many different ways of thinking about research into the education of adults, although quantitative research is less often present (Fejes & Nylander, 2019).

Our intention in this conceptual paper is not to insert ourselves directly into the debate about whether a certain type of research is under-utilised, but to consider how particular approaches might thrive—or not—within a specific discipline. Talking about the sociology of science, Merton (1973, p. 175) asked 'what are the modes of interplay between society, culture, and science? Do these differ in kind and content in different historical contexts?' The aim of this paper is to examine a sub-question of Merton's: how can we think about the interplay of disciplinary conditions and research methodologies within adult education, and what are the implications of this way of thinking?

This discussion does not reflect the notion of methodologies as inextricably linked to certain ontologies or epistemologies. The authors do not, for example, believe quantitative work is inherently unsuitable for critical or progressive studies and find such 'lines in the sand' (Daley et al., 2018, p. 159) profoundly unhelpful. Our definitions are straightforward and represent no ontological commitment. We see quantitative research as:

> a method of research that relies on measuring variables using a numerical system, analyzing these measurements using any of a variety of statistical models, and reporting relationships and associations among the studied variables. (American Psychological Association, 2020b).

We use a similar definition for qualitative research:

> a method of research that produces descriptive (non-numerical) data, such as observations of behavior or personal accounts of experiences. The goal of gathering this qualitative data is to examine how individuals can perceive the world from different vantage points. (American Psychological Association, 2020a).

The connection between research approaches and worldview is not currently seen as absolutely as in the past. The common ground across many research approaches is a belief and practice recognising the significance of real objects—both physical and social— and the need to understand them through human interpretation (Maxwell, 2017). This perspective, which may be called post-positivist or grounded interpretivist, leads to increased opportunities for researchers to apply the research methodology best suited to

their research questions rather than being constrained by ontological commitments. The Popperian approach to knowledge also implies the provisionality of results (Popper, 1963). Today's facts can mean something different tomorrow after new research and new insights. Accepting provisionality accepts the search for more knowledge as perpetual. In research endeavours marked by post-positivism and provisionality there are few grounds to set aside any method on the basis of epistemological purism.

If this perspective is accepted, it is no longer viable to argue for the avoidance of certain methodologies because of their inherent unsuitability for the historical or political commitments of a field. The utility of a methodology within a field depends upon the contours of the field rather than the nature of the methodology. Disciplinary epistemology is contextual and internal.

In order to understand the contours of adult education research we adopt the metaphor of *research ecosystem*. Such ideas may be familiar from Bronfenbrenner's (1979) work on ecological systems model, which has been used in discussions of research methodology (Onwuegbuzie et al., 2013). For the exploratory discussion in the current paper Bronfenbrenner's framework is rather formal and will not be applied to a substantial degree. However, we do see any particular research project fitting within an *ecological niche*, as illustrated in two national settings. The aim is to explore how and why a particular form of enquiry becomes more or less prevalent within a particular research ecosystem. There are helpful parallels here with Bourdieu's (1984) notion of 'fields' as the social spaces within which actors exercise agency, though this discussion is more directly constructed around an ecological metaphor than Bourdieu's work.

The discussion concludes with thoughts on the sorts of factors likely to change the profile of different and differentiated methodologies within our field. Our intention in this discussion is not to promote any particular methodologies, but to recognize what can be gained—or lost—with different levels of diversity within our disciplinary ecosystem.

Research as ecosystem

Research is not an individual endeavour. Even for those who work alone on a specific project, the funding, publication, and application of their research depends on a network of other researchers and agencies. The creation and expansion of human knowledge is a fundamentally social process (Merton & Gaston, 1977). A number of metaphors have been used to understand the research community and ecosystem is one of the more recent (Naylor, 2017). There are two especially compelling aspects of this metaphor. The first is the extent to which it underlines the inter-relatedness of the elements affecting and surrounding the research process. Every organism within an ecosystem exists in relationship with those surrounding it, and a change in one organism (use of the insecticide DDT to reduce mosquitos) has ripple effects (loss of songbird diversity). The second aspect is the idea of the ecological niche—the particular role filled in an ecosystem by a particular organism. Mosquitos, for example, consume the resources concentrated in mammals and make them available to birds. No organism can inhabit an ecosystem without having a niche. Ecosystems are irreducibly complex, and fifty years after the development of the concept, biologists are still struggling to model ecosystems and the relationships they contain.

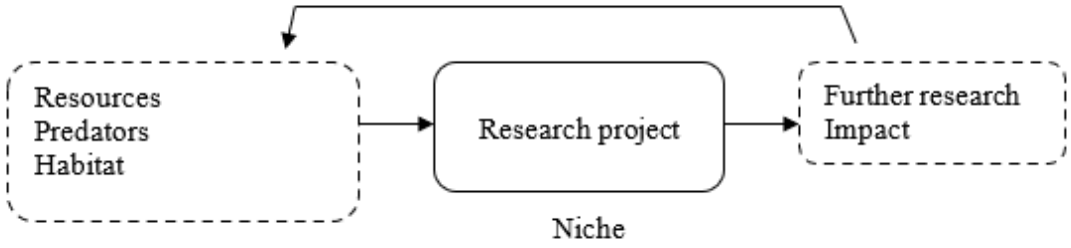
In ecological science there are three factors affecting how viable and successful a specific species will be within a niche. The first is the availability of resources. In biological terms this often boils down to sufficiency and reliability of the food supply. More food leads to more of the organism. The second is the presence and efficacy of predators. If the predators are too efficient, the prey species will have a hard time

surviving. If they are inefficient, the prey species will expand to the limits of the food supply, and then die off due to starvation. The predator/prey balance is a dynamic and ever-adjusting one. Finally, there is the availability of suitable habitat. Niches are habitat specific, so if the polar ice melts the population of polar bears must fall even if food is plentiful and predators non-existent. While biologists do not fully understand the action of all the factors in ecosystem niches, these three are viewed as starting points (Pocheville, 2015). The key principles are the degree to which the species relies on the niche and the extent to which the niche is shaped by outside forces. Research ecosystems may not appear to be as complex as the biological equivalents, but there are a number of resemblances making this metaphor a useful conceptual tool, as discussed in the following section.

One overarching similarity, however, is that ecosystems evolve over time, as do the environments into which research claims are advanced. Fields need different types of work at different stages in their development, as most famously argued by Kuhn (1962). The field's common understanding of phenomena starts off being tentative, then tends to coalesce and stabilize until the shared approach demonstrates too many failings, at which point it seeks a new stable state. This process can be seen in adult education as it tried to gain academic status in the middle of the 20th century. There was a model building period with considerable research focused on identifying and testing universalist models such as andragogy (St. Clair & Käpplinger, 2021) or participation scales (Boshier, 1971). This was then replaced in North America with a far more individualised period of exploration utilising small-scale qualitative approaches. The point here is not to argue for some sort of pre-determined epistemological progression but illustrate the way the needs and focus of a field change over time.

Factors influencing viability

Figure 1. Schematic of research niche



The metaphorical use of the term ecological niche to understand research is exemplified in Figure 1. On the left there is a group of factors forming, in a broad sense, the category of inputs. These affect the niche, and therefore the viability of certain research projects. To the right there are outcomes, again defined very broadly. There is also a feedback loop between the outcome category and the input category. The higher the impact of a piece of work and the more follow-up research is flowing from it, the more likely it is for resources to be available within that niche. One of the benefits of the niche perspective is helping to highlight the way these benefits do not flow back to the original research but affect the niche and therefore help to shape future projects.

In many parts of the world, central governments attempt to set priorities and goals for university research, such as the development of Artificial Intelligence systems or other

economically beneficial technologies. The incentive system leads to different forms of research being given more resources and becoming dominant in the ecosystem. A cruder example in recent years was the effect of the *No Child Left Behind Act* in the United States (St. Clair & Belzer, 2007). This Act promoted positivist and so-called evidence-based research such as Randomized Controlled Trials (RCTs) and specifically de-emphasized and de-funded qualitative work. The educational research field in the United States did re-orient for several years to meet these imperatives. Already completed qualitative projects were not directly affected, but the viability of the niche for future qualitative research was significantly reduced. This exemplifies the feedback system in operation.

Resources are perhaps the most obvious group of factors affecting a niche. As with biological niches, research organisms need something to consume. A supply of money for researcher time, software, data collection, travel, and so on, is crucial. Even with very significant funding, there can also be limits on the availability of specific resources. Reluctance of participants to engage with research may result in a shortage of data, as has been the case in a number of surveys. Growing skepticism regarding the enterprise of research, including the justified concerns of oppressed groups regarding the purpose and outcomes, makes it harder to build representative samples and increased participation incentives do not fully lay this concern to rest.

Secondary analysis can often have much lower resource demands than primary analysis, simply because the data collection is already complete. Setting aside the question of the suitability of primary data collection for the secondary question, the concern here is the availability of primary data. It may be necessary to pay for access. For example, some data files from Eurostat (e.g. data on the Continuing Vocational Training Survey) are only available after paying thousands of Euros for access. Some jurisdictions systematically collect data and make it available as public use data files while others do not. The Organisation for Economic Cooperation and Development (OECD) has been helpful in this regard, with major survey data often published alongside an online data explorer tool. Without some form of support for these costs, researchers will not find the niche viable.

The second factor, predators, can be considered metaphorically as the existence of other actors competing for the same resources. If there are, for example, a number of other organisations or actors bidding for projects they may be able to push out the local researchers, eventually reducing the population. In many cases, international research teams may employ local researchers and reduce the supply of expertise in that way. Over recent decades it is not unusual for highly competent people from less developed economies, in particular, to be swept up by the United Nations system or the OECD.

These organisations can develop in-house or sub-contracted teams of researcher specialists developing networks of contacts and expertise over time. With the resources available to them, it is not unthinkable for them to displace local researchers over time. The *Program for International Assessment of Adult Competencies* (PIAAC) (OECD, n.d.) was first developed several decades ago in the United States and Canada as a way to think about labour market fit for young people, then it was further developed as an international tool by Statistics Canada, and finally adopted by the OECD (St. Clair, 2013). The OECD is an organisation with a high brand-name recognition for policy-makers and provides resources to develop complex statistical procedures leading to definitive measures.

The lack of wide-spread methodological expertise can manifest in a number of ways. Apart from core scholars within a discipline being unable to apply a specific method, there is an associated inability to conduct informed reviews of work where such methods are applied. Lack of familiarity with contemporary techniques may leave researchers out of networks where these techniques are used, creating a vicious cycle of ever-diminishing

familiarity and competence. It may also leave the field open to work conducted at a highly sophisticated level by people but with less disciplinary expertise, which may lead to the effect that the discourses contained in this work becoming dominant or being rejected outright on grounds other than quality. It does not seem likely either extreme is helpful to the development of a discipline.

This factor may underpin a paucity of researchers able to challenge the organisations who are fulfilling the function of predators. For example, labelling PIAAC data as fundamentally flawed and reproductive is easy; examining item construction and the wider instrument to explain why this label is justified is more complex. It also becomes more difficult to assess the value of alternative approaches. The German LEO survey appears to be a more broadly based and progressive way to understand literacy skills than PIAAC (Buddeberg et al., 2021), but it is much less well-known because PIAAC has the international reach and name recognition.

Finally, in our model, habitats represent the existence of environments able to welcome and value specific types of research. If a researcher is working in a situation where quantitative work is seen as the gold standard their qualitative output will not receive much attention. This is not just an external matter, as every research area has a distinct and powerful culture (Trowler, 2014) and the results arising from a particular research project, as well as methodology more generally, have to be recognized as credible according to that culture. For many academics, acknowledgement and use of their work by colleagues is a significant reward in itself, therefore, disciplinary credibility is an important consideration. Adult education research, as any discipline, has certain normative values underlying that credibility. Such critique may be well-grounded in observations of practice; on other occasions it appears to reflect nothing more than an un-nuanced collective judgement.

The concept of niche can also underpin questions around the ways different types of questions are permitted and limited. The swing towards randomized controlled trials in the US discussed earlier can be understood as both an attempt to shape the field and to limit the sorts of questions it was possible to ask. RCTs tend to push towards instrumental, single-factor questions of teacher practice and away from the potentially political sociological questions such as who benefits from the status quo in education systems. The consideration of niche helps to clarify what is possible and why.

The real-life working conditions of adult education researchers can be seen as representing the interplay of the three factors. They are mutually dependent, to some degree. If a particular project does not fit the habitat it seems unlikely to be funded, but if the work is potentially valuable it is easy to imagine an external body swooping in to perform it. In some cases, the external body does the job much more cheaply than the local alternative, again undermining the viability of the niche.

Impact and inspiration

In the metaphorical research niche, the outputs of research are further research and impact. This is intended to parallel the biological concept, where the outputs of any niche nurture other organisms. The first output, inspiring future research, is less complex than impact in some ways. While the factors making further research attractive and viable are complex, this could theoretically be measured through citation-tracking or something similar, though in practice this can be misleading. For example, the most-cited article related to the education of adults is Bandura's 'Self-Efficacy' (1977) with over 48,000 references (Green, 2016). We would suggest a high proportion of people working in education with adults have at least some familiarity with the concept of self-efficacy and

many will know the name of Albert Bandura. However, a research paper with this kind of impact may act as a common intellectual touchstone for the field, without directly changing people's experience of being in an adult education program or the broader public understanding of the field. It seems reasonable, however, to assume such a well-known concept will inspire the framing of ongoing research.

Impact has been debated at some length in recent years, primarily by those interested in university impact. VITAE, a United Kingdom-based organisation dedicated to the promotion of research defines two types of impact. The first is academic impact, defined as: 'the demonstrable contribution that excellent research makes to academic advances, across and within disciplines, including significant advances in understanding, methods, theory and application' (VITAE, 2022). This impact of a particular piece of research may show up in different ways. It may have an epistemological impact, changing the way people internal to the field think about the field. The difference from inspiring future research is the conceptual advance impact implies, which is not always the case for work directly influencing research.

VITAE's second form of impact is economic and societal, defined as 'the demonstrable contribution that excellent research makes to society and the economy. Economic and societal impacts embrace all the extremely diverse ways in which research-related knowledge and skills benefit individuals, organisations and nations' (VITAE, 2022). This form of impact may be predicated upon the demand for a particular type of research, related in turn to the non-academic audience for the work.

Considering quantitative data and analysis in the education of adults, much of the demand comes from international and governmental stakeholders. Since the accountability wave of New Public Management swept across education (Ferlie et al., 1996) state actors have been interested in quantitative measures for two main reasons. One is the need to justify public spending, which is often seen as more legitimate when numerical approaches are used. The second is comparison of systems to assess their effectiveness and allow for good practices to be identified, evidenced and shared. In addition, popular reports of research in the media are often focused on the numerical outcomes of surveys, especially in terms of percentages and change over time. It is a more significant challenge for small-scale qualitative research to result in an outcome able to be expressed in a headline. The result is a continuous wave of surveys by scientists, consulting agencies, pressure groups, lobby organisations or practice associations, some of which is high quality research and some of which can be misleading. While there is a demand for figures and quantitative research, it can be challenging to get academic research results published with sufficient profile to counter misinformation from better connected sources.

Alternatively, research impact might represent demonstrable and direct change in concrete practices or policy. When looking at policy it can be difficult to discern a direct impact as research tends to filter into policy-maker's thinking rather than explicitly influence it (Weiss, 1980). One example is the dominance of human capital theory in policymaker's perspectives, often based on exposure to the ideas of writers such as Hanushek and Wößmann (2008) on educational economics. This work is seen as implying educational resources are better spent on younger people (due to simple maths—a younger person has more years to accrue return on investment). The nuances of human capital are overlooked, with even strong proponents of human capital warning '[. . .] early investments must be followed up by later investments in order to be effective' (Cunha et al. 2005, p. 87). This example demonstrates how research can seep into policy thinking and have impact some way from its original intent.

Feedback loop

A key element in our heuristic is the feedback loop between the outcomes of research and the inputs. The products of any project, we suggest, tend to influence the viability of different methodologies within the niche in future iterations. For example, if a survey were to have enormous societal impact, it is more likely funders will support similar work in the future, potentially attracting individuals with the expertise to do a good job. Obviously inspiring future research increases the possibility of applying various methodologies by definition. The acceptance by the field of different ways on doing research will change over time as the outcomes of these approaches become apparent, changing the bounds of the possible.

The feedback loop has the potential to reinforce existing research practices or to support change. For example, if there is an orthodoxy in the field where all researchers are educated in small-scale surveys and rewarded for that work, it is likely citations and other impacts may flow from surveys, reinforcing their legitimacy. Alternatively, if conducting focus groups results in societal impact in the form of massively increased funding for adult education programs, it seems likely the research niche would become less supportive for surveys and more supportive for focus groups. Based on our own observations and experiences, it seems likely these two forces balance each other to some extent, created a slow trajectory of change over time, such as the long tail of effects brought about by the interpretivist turn of nearly forty years ago (Howe, 1998).

Applying the ecological model

To this point the paper has presented a heuristic model, based on an environmental metaphor, for thinking about how the credibility and legitimacy of certain methodologies grow or shrink over time. The balance of the paper begins by presenting case studies utilising the model of two national contexts with which the authors are familiar. It is important to acknowledge the lack of hard data regarding the topics we will be exploring, though we have backed up our observations with examples and data where possible. This helps prepare for the conclusion, where we consider what could be the implications of, and remedies for, Boeren's (2018) observation about quantitative methodologies.

Germany

Germany is a central European country of around 83 million people. Germany has had a federal structure since unification in 1990. There are 16 *Bundesländer*, each with its own education system and own ministry for education, but there is also a federal ministry for education and research. The cooperation between the federal and regional level in relation to the practice of adult education is as habitat quite complicated, but the federal level can support and initiate research. This situation presents challenges when it comes to changing practices, but is advantageous for adult education research since the federal ministry of education spends millions of Euros each year on research focused on the learning of adults. Research regarding literacy and university-provided continuing education were funded substantially in the last decade.

Since the 1990s, the European Union has also been ideologically very influential, with significant spending on applied research in adult education. For example, the issue of accreditation of prior learning is strongly promoted by the European Union. Bjørnåvold (2001, p. 112) has used the phrase 'solutions looking for problems' in order to point out that the European Union cannot intervene directly into national education system, but by

creating benchmarks and funding programs for applied research and innovative practice it can gain indirect influence.

The national research funding agency DFG (German Research Association) provides researchers with funding for non-applied research, although the selection process is rigorous and only a very small number of projects is funded annually. In addition, private foundations are also sponsoring research. Bringing together these various sources of support, the resources available for research are not as limited as in other countries.

There is also a mix of quantitative and qualitative research within the field. There are *Leitstudien* (Schlutz, 2001), meaning landmark studies, by Wolfgang Schulenberg and others in the 1960s and 1970s, in which participation in adult education was researched using questionnaires and group discussions. The divide between quantitative and qualitative methodology is traditionally perhaps not as significant as in other countries. More problematic is the degree to which research is commissioned by the federal and European levels on the basis of political agendas, creating a situation where researchers could be tempted to provide support for these agendas. Researchers like Wittpoth (2000) have pointed out the problematic quality of such research and the extent to which it may obviously serve political interests. This critique is not only valid for the research funded by the European Commission, but also for nationally funded research. Policies have a strong influence on the ideological fit of adult education research in Germany. Many research papers have evaluation as their goal, which leads to distance between practice and research. Cuts in funding for programs are supported or legitimated by evaluations, although researchers might argue in their own defence how unlikely it is for decisions to be solely based on the evaluation and not be influenced by other political rationales.

In the German context, predators take the form of private and for-profit agencies such as the Swiss company Prognos, who often win the contracts for evaluations and other quantitative studies. Adult learning and education can be also researched by people based in other academic disciplines like economics. Continuing with the example of Prognos, they define themselves as an ‘economic research centre’ (Prognos, n.d.), but receive public contracts for evaluating adult education policies or adult education agencies. Ministries might prefer to choose such private agencies with an extensive costumer-orientation, a track record of delivery, and the capacity to conduct complex quantitative studies instead of more embedded adult education researchers. One can have some sympathy for this decision on the part of state actors who may, in our experience, be under considerable pressure to produce deliverables for political agendas and not to produce critical reflections on political agendas.

PhD studies and their themes often follow these agendas since many PhD studies have their origin in commissioned research projects. Benchmarking of adults’ participation in adult learning is identified as a core indicator by the European Union and almost all social partners agree in the main goal of rising participation levels, so quantitative research on participation in adult education and barriers is frequently conducted in German adult education research using bivariate and multivariate methods. There is a national survey on participation dating back to 1979 and has inspired the Adult Education Survey (AES), which was joined in the 1990s by a number of surveys on participation in continuous education and training by businesses. An interesting contextual factor is the national research council’s funding policy in the last decades of encouraging the use of existing data rather than constructing new questionnaires. There are special institutes like GESIS in Mannheim, which store and support quantitative research by researchers using data collected by other researchers. There is also national education panel (NEPS) for the whole population, including an adult sample. In the German case adult education research is not solely done at universities, but also in non-

university research organisations like the German Institute for Adult Education (DIE) or – to a lesser degree for adult education – the Federal Institute for Vocational Education (BIBB). Both institutes are actively engaged in providing quantitative data and statistical analysis on adult and continuing education. Public funding and ministries are encouraging such research.

Overall, the picture we see in the German research ecosystem is a series of incentives for a wide variety of methodologies, though the independence of research from political agendas is not easy to achieve in commissioned research. Research in adult and continuing education in Germany is far from being the sole domain of researchers trained in adult education. Recent decades have seen a steep rise in the numbers of sociologists, psychologists, and economists who are addressing adult learning. The work is often conducted from a labour force and skills formation perspective and is open to critique for being predominantly affirmative and non-critical. The influx of resources into research on the learning of adults has increased competition between disciplines with advantages and disadvantages. Overall, research on the learning of adults is flourishing in Germany, but the challenges are to do it in a non-affirmative way and to secure the relevance of disciplinary fit in a field marked by competitive engagement by other disciplines.

Canada

Canada is a North American country of around 38 million people inhabiting the second largest landmass in the world. Canada adopted a federal structure from the beginning of the nation in 1867. There are 13 jurisdictions in Canada, each with its own education system and little involvement of the Federal government. Anglophones are the majority in Canada, though 22% are Francophones and there are many other significant language communities. While there is no federal department of education, unlike the United States, workforce development is a federal responsibility, and some education for adults is delivered through federal funding. For example, adult literacy programs across the country have received varying support from the federal government over the decades, though currently this is at a low point.

One effect of having a relatively small population divided into jurisdictions is the challenge of creating a collaborative community around the education of adults able to lobby at national level for the field. There is an active Canadian Association for Studies in the Education of Adults/Association Canadienne pour L'étude de L'éducation des Adultes (CASAE/ACÉÉA) and an associated journal published between one and three times per year. This is really the only field-based structure spanning the geographical and linguistic divides of Canada.

The resources available for research are limited. There are federal funding councils supporting work in social sciences and humanities including adult education, but researchers have to compete across all social science and humanities fields. There is considerable research support from the federal Office of Skills for Success, though this is intended for program pilots and delivery rather than basic research. There may occasionally be some small amounts of funding available at provincial level, but it tends to be amounts like CAD$7,000/5000€ for individuals to conduct specific, small-scale studies. Overall, the opportunities for adult education research are predominantly individual or small team projects supported by research councils. The one exception is the PIAAC study run under the auspices of the OECD (n.d.), which collected data from 27,000 Canadians during its last iteration in 2012.

Yet PIAAC is itself, as noted earlier, an example of predator influence. It started as an endeavour of primarily Canadian state actors using the resources of the higher

education sector (both ideological and financial) to build and conduct a unique survey. When it was recognised as being of value international players became interested and took over the process and associated resources. There is a difference between paying people inside a context to study that context and bringing in external actors to achieve the same end. The first builds capacity and connection, the second erodes them.

Habitat includes the capability to conduct research of a certain type. There is little evidence of a body of researchers with expertise in—or even familiarity with—working with quantitative data among the Canadian adult education community. Many academics came into the field after the interpretist turn of the 1990s (Howe, 1998) meaning they may have had little exposure to quantitative approaches to knowledge generation. This makes it difficult for them either to conduct quantitative work themselves or to encourage and support students to do the same. The capacity that does exist tends to be found in fields such as economics where quantitative modelling is a more common tool.

Another aspect of the North American adult education research habitat is a strong strand of resistance to the notion of education as a systemworld function (Habermas, 1984). This often leads education for adults being seen as significantly distanced from schooling, mirroring the different federal involvement in each and the way the two fields usually reside in different ministries at provincial level. While quantitative work has come to be seen as an essential aspect of initial education (St. Clair, 2023), the appropriateness of applying similar tools to education for adults has been met with skepticism.

Looking at the operation of feedback mechanisms, it seems that lack of federal adult education structures combined with limited knowledge of, and resources for, quantitative approaches result in less demand for this type of analysis. There is a limited amount of quantitative data analysis in provincial grey literature and policy documents but it tends to be numerical reports and secondary analysis rather than a way of examining substantive primary questions. The lack of purchase gained by PIAAC results in Canada (St. Clair, 2016) reflects a lack of mechanisms able to respond to large-scale studies in practice or policy. At the same time, randomized-controlled trials and other quantitative tests of pedagogical principles are rarely seen as feasible or desirable, even if the capacity were there. Experience suggests journal reviewers may see 20 theoretical or qualitative studies for each quantitative study, and the latter are usually written by people from outside the immediate adult education field. This means there is less visible opportunity to publish quantitative literature, and it is harder to find models for such publications. The CASAE/ACÉÉA journal, referred to earlier, last published a quantitative article in 2016 (see Livingstone & Raykov, 2016).

Taken together, these factors inevitably bear upon the sorts of impact expected from quantitative work. For researchers who are being strategic regarding their work, the lack of resources, tendency to use non-local actors and organisations, limited impact, and perceived incongruity with the field cannot lead them to believe the rewards of quantitative approaches in any way offset the investment. When the leading journal in the field so strongly features qualitative studies, often small-scale, it would take a very determined scholar to swim against the tide. This seems especially true in the case of new scholars who are under considerable pressure to publish as often as possible in high-profile journals, but it also limits the opportunities for community-based scholars to see models of how their work can utilise quantitative analysis.

Overall, Canada appears to demonstrate a strongly determined niche for adult education research, tilted towards small scale studies. Where the impact of any form of research is likely to be so limited it follows the research niche will not appear viable, a situation the feedback loop is likely to reinforce.

Discussion

It would be a fascinating and potentially useful project to conduct an empirical study of the factors we have discussed in this chapter. While we do not see any immediate contradictions in the ecosystem approach we have laid out, empirical data would help with understanding the nuance and implications of the ecosystem model in more depth and specificity. Even at this point, however, we are prepared to present some initial thoughts on the implications of this framework.

Our first comment is that Boeren's analysis (2018) appears to apply in some niches but not others. While it may make sense if only the North American academic context is taken into account, there appears to be significant evidence of a healthy niche for this kind of work in Europe and elsewhere. Indeed, we would suggest looking beyond the articles published in purely adult education journals to discover a lively interest in all sorts of methodologies in many places. A strong example is a report published in late 2021 by the C.D. Howe Institute, a policy think-tank, which uses broad scale quantitative data to make a strong case for enhanced lifelong learning across Canada (Mahboubi & Mokaya, 2021). The first lesson we draw from our argument is the high level of variation of relatively small-scale niches. To return to Brofenbrenner's (1979) model briefly, it appears we should think much more in terms of exosystem and mesosystem than of macrosystem: while adult education research is a global phenomenon, the influences shaping the particulars of the niche appear more local than is sometimes assumed.

The German context offers resources, expertise, relevant questions, and impact capable of supporting quantitative analysis. It may not always reflect full fit with the habitat, however. Extending our metaphor, this suggests quantitative work on the education of adults will survive but may move to another niche. In less picturesque terms, this would imply a continuation of the movement of this type of research away from specialised adult education researchers and towards economists or other generalist quantitative researchers. It seems likely this will exacerbate the issue of methodological expertise and erode quantitative capacity within the field, reflecting our earlier comments on the metaphorical role of predators. The second lesson is that predators may move in when a niche is not being fully filled and their presence may tend to transform the niche in ways making it harder for the original species to re-establish themselves.

In both case studies a key question arises in slightly different forms, and this is the extent to which quantitative approaches driven by a central government can contribute to counter-hegemonic perspectives. There is a tendency for current forms of quantitative research to demonstrate naïve scientism (Pigliucci, 2018) and to work solely within existing structures. This does not have to be the case, but demonstrating alternative approaches means engaging with this form of knowledge creation, and this in turn requires creating niches in our research ecosystem favourable for the development of quantitative work for and by adult educators. The other side of this question is how critical researchers can feed into policy if they are pragmatically restricted to small-scale studies seen as less valid by policymakers (partly because of the choices taken by those policymakers themselves). The habitat required to support critical questioning may not align with the available niche. The lesson derived from this insight is that the fit of resources, predators and available habitat is the key factor in making a niche more or less viable.

It seems there may be value, in line with Boeren's (2018) argument, in supporting adult education research able to contribute quantitative insights to policy conversations. In specific terms there is a need for increased resources, though this may be less of a barrier than it appears. There is a great deal of open-source data available at no or low

cost, much of which can be configured to produce valuable and interesting information. For example, PIAAC has a huge amount of background data gathered primarily for weighting the skills measures, but representing a gold mine of data in itself. In terms of research skills, there are opportunities to create multi-disciplinary teams including people with deep experience in working with quantitative data. By participating in these teams, adult education researchers can both see the work being done and learn how to do it for themselves.

This in turn helps to resist the mischievously named research predators by building the capacity of our field to talk in terms policymakers find convincing. Research has the potential to be seen as doubly knowledge-generating. On one side lie the actual research findings and output, with all the implications they may hold for policy and practice. On the other lies the capacity developed by working in certain ways with data. Without the opportunity and support to engage with the currently powerful discourses in many settings, adult educators are less able to make their case. This seems especially true if that case is critical.

The habitat could potentially become more supportive by showing colleagues the value of quantitative research for answering fundamental questions about our field. An example is the question of what proportion of adults engage with formal or informal adult education each year. In Germany this data is straightforward to find, while in Canada it used to be available but is not any longer. It is important to show how quantitative work can be critical and challenging. The correlation of poverty, ill health, and limited skills levels is almost irrefutable (St. Clair et al., 2010), and this quantitatively demonstrable relationship contains within it the moral weight of the education of adults. We create ideological value for quantitative research by engaging with it and changing the purposes to which it is put.

Conclusion

The use of an ecosystem metaphor as a heuristic model for discussion of research proves useful in moving the conversation beyond the benefits and limits of any particular methodology to a higher-level focus on contextual factors shaping its perceived value and relevance. In the end, our exploratory case studies raise as many questions about the research formations in each country as they answer. We conclude Boeren (2018) may have a point, but not necessarily the point claimed in that paper. Quantitative work is continuing in varied and influential ways in many different contexts. The issue to be considered is not how the work can be encouraged but how it can align better with disciplinary norms and how it can have the impact the field needs it to have. We need to understand and re-shape the niche.

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