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Thomas Archibald

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Evidence in Practice: A Study of “Evidence-Based” Non-Formal Education

Thomas Archibald, Virginia Tech

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Abstract: Non-formal education programs are under increasing pressure to be “evidence-based,” where evidence derived from randomized controlled trials is seen as the most credible type of evidence—the “gold standard.” This qualitative study explores the politics of evidence enacted in the practices of the “evidence-based” education movement, focusing on three cases.

Educational programs should be based on evidence. On its face, this statement seems obvious and platitudinous. All non-formal education—like all human action—is based on *some* evidence, in the vernacular sense of the term. Educators, administrators, program planners, scholars and other people engaged in non-formal education base their actions on a wide array of evidentiary information. What’s more, people engaged in non-formal and community-based education tend to not be entirely unreflective about what informs their practice—the 2000 edition of the *Handbook of Adult and Continuing Education* is centered on questions of critically reflexive practice, highlighting the multiplicity of frameworks, theories of action, and ways of knowing that guide professional non-formal educational praxis (Wilson & Hayes, 2000).

However, the “evidence-based” education movement—one of many related attempts to “bridge the research-practice gap” that has gained prevalence in recent decades—is predicated on more formal and conscribed definitions of evidence, where certain research and evaluation approaches are valued more highly than others. In the current “era of accountability,” some policy-makers, funding agencies, and scholars position “scientific” evidence derived from randomized controlled trials (RCTs) as the “gold standard” for establishing proof of which programs “work” and which do not (Coalition for Evidence-Based Policy, 2003; Mosteller & Boruch, 2002; U.S. Department of Education, 2003). According to Trochim:

The gold standard debate is one of the most important controversies in contemporary evaluation and applied social sciences. It’s at the heart of how we go about trying to understand the world around us. It is integrally related to what we think science is and how it relates to practice. There is a lot at stake. (Unpublished speech transcript, September 10, 2007)

In his critique of the RCT design—in which he concludes that the RCT has “essentially zero practical application to the field of human affairs” (2008, p. 12)—Scriven reiterates the point that much is at stake, claiming, “This issue is not a mere academic dispute, and should be treated as one involving the welfare of very many people, not just the egos of a few” (2008, p. 24). In this study, I leverage both empirical and theoretical perspectives on the “evidence-based” movement to provide examples of the ways in which tightly circumscribed definitions of “evidence-based programs” affect non-formal education praxis, showing in concrete terms what is at stake.

Purpose and Research Questions

The purpose of this study is to better understand how efforts to make non-formal education more “evidence-based” actually unfold in practice. I focus specifically on three cases, two of which involve mandates to implement evidence-based programs (i.e., tightly-scripted

curricula that have been evaluated via an RCT), while the third involves incorporation of evidence-based practices. The three cases are instances of a larger contextual shift towards more “scientific” approaches to education research and evaluation, part of the “era of accountability.” That shift has led to acrimonious debates in recent years. The positions espoused by participants in those debates tend to fall into two general categories, suggesting that how questions about the research-practice gap are *posed* is at least as important as how they are *answered*: Some discussions treat the problem on a purely technical-rationalistic, instrumental level, focused on improving the fidelity of implementation of evidence-based interventions (e.g., Meyers, Durlak & Wandersman, 2012); Others foreground the normative and axiological nature of the problem, offering theoretical critiques of the assumptions that undergird the very notion of the research-practice gap (e.g., Biesta, 2007). Each of these approaches to posing and answering questions about how to make education practices more evidence-based is elucidative, yet each is also limiting. The first leaves too much unproblematized and risks reifying hegemonic relations of knowledge and power in society; the second lacks grounding in practical contexts and risks dissolving into polemical verbalism. The theoretical critiques characterizing this second category must be supplemented by empirical studies rooted in the particular, historicized work processes of individuals and organizations.

To that end, the study presented here analyzes what actually happens, in practice, when people support the implementation of evidence-based programs or engage in related efforts to make non-formal education more “evidence-based.” Like Timmermans and Berg (2003) in their analysis of standardization in medical practice, instead of debating the advantages and disadvantages of evidence-based approaches and getting stuck on a rhetorical level of analysis, I offer a study of the politics of evidence in practice. I ask (1) How is evidence-based program and evidence-based practice work actually practiced? (2) What perspectives and assumptions about what non-formal education is are manifested through that work? and (3) What conflicts and tensions emerge through that work related to those perspectives and assumptions? Empirically, this qualitative study is based on data from in-depth interviews, observation, and document analysis. Theoretically, it is informed by critical perspectives on epistemological politics, drawing especially from the field of science and technology studies. By concentrating on the details of practice, I elucidate some of the specific tensions and gaps inherent in that work, calling the apparently self-evident superiority of evidence-based education into question.

Theoretical Framework

The evidence-based education movement, with its privileging of RCTs, contains and relies on a number of often tacit assumptions about the nature of research, evidence, knowledge, expertise, and social action, throwing the hierarchical division between “scientific” and “everyday” ways of knowing into sharp relief. The very dichotomization of research and practice, taken to be self-evident in many discussions of the gap between the two, establishes a fundamental knowledge hierarchy in which the evidence-based movement is couched. The theoretical framework guiding this study aims to problematize the tacit assumptions of the evidence-based education movement, especially those related to the epistemological (and ontological) politics of abstract knowledge hierarchies.

For instance, Biesta draws attention to the “epistemological, ontological and praxeological dimensions of the discussion and in each domain identifies a deficit. In the epistemological domain there is a knowledge deficit, in the ontological domain an effectiveness or efficacy deficit and in the practice domain an application deficit” (2010, p. 491). In the

epistemological domain, EBPs assume a representational epistemology, “in which true knowledge is seen as an accurate representation of how ‘things’ are in ‘the world’” (Biesta, 2010, p. 494). In contrast, Biesta makes the case for a transactional epistemology, in which “knowledge is not a depiction of a static world ‘out there’ ... it is “knowledge about the world in function of our interventions” (2010, p. 495). Heisenberg writes, “What we observe is not nature itself, but nature exposed to our method of questioning” (quoted in Law & Urry, 2004, p. 395). Biesta describes a “knowledge deficit” emerging from representational epistemology that relates to our actual inability to know, through experimentation, that “what works” now, in one context, will work in the future and in other contexts.

In the ontological domain, “talk about ‘what works’ ... operates on the assumption of a mechanistic ontology that is actually the exception, not the norm in the domain of human interaction” (Biesta, 2010, p. 497). Finally, in the praxeological domain, Biesta builds on Latour’s discussions of how techno-science succeeds and moves by rendering the world to be more like the laboratory from which it originated (Latour, 1983). In a similar way, Leach, Scoones, and Wynne (2005) explore how the application of scientific knowledge is performative and transformative. It is “the tacit provisional performance of human ontologies in the making” (Leach, Scoones, & Wynne, 2005, p. 13), what Law and Lien (2013) call the choreographies of practice. As summarized by Mol and Berg (1998), “There are tensions among shaping practices, bodies, and lives in various diverging ways: tensions between making the world run in this, rather than some other way” (p. 7).

Another helpful theoretical lens is the notion of epistemic justice, which provides a practical theoretical approach to uncovering, deconstructing, and working to replace unjust knowledge hierarchies. Epistemic justice, sometimes referred to as cognitive justice, was articulated first by scholars and activists (and activist-scholars) from the global South. In essence, epistemic justice refers to “the constitutional right of different systems of knowledge to exist as part of dialogue and debate” (Visvanathan, 2005, p. 92). Epistemic justice “has to do with the coexistence of many knowledges in the world and the relation between the abstract hierarchies which constitute them and the unequal economic and political power relations which produce and reproduce increasingly more severe social injustice” (Toulmin, 2007, p. xv). Evoking Scriven’s point about what is at stake in the RCT debates, Visvanathan writes, “One has to realize that epistemology is not a remote, exotic term. It determines life chances” (2005, p. 84). The notion of epistemic justice, along with similar methodological perspectives derived from science and technology studies, guides my analysis of the empirical cases presented below.

Methodology

Methodologically, the study was guided by science and technology studies (STS; e.g., Lindenbaum & Lock, 1993; Shapin & Schaffer, 1985). STS offers helpful perspectives because of its focus on uncovering assumptions and problematizing seemingly self-evident categories and norms. STS methods aim at determining “the processes by which certain forms of knowledge achieve a moral legitimacy and appear to be part of the natural order” (Lindenbaum & Lock 1993, p. xiii). For instance, as pertains to the methodological and epistemological supremacy of experimental designs, Shapin and Schaffer explicate the “historical circumstances in which experiment as a systematic means of generating natural knowledge arose, in which experimental practices became institutionalized, and in which experimentally produced matters of fact were made into the foundations of what counted as proper scientific knowledge” (1985, p. 3).

Sample: Three Focal Programs

All three focal programs in this study involve non-formal community-based education for young adults. Two of the programs focus specifically on adolescent sexual health, while the third is a more broadly focused positive youth development program. Of the two adolescent sexual health programs, one takes place in the United States (Program A), while the other takes place in Kenya (Program B). Both Programs A and B support the implementation of evidence-based programs (EBPs) designed to prevent teenage pregnancy and sexually transmitted diseases such as HIV. They are both positioned between a funder and the community-based educational organizations that implement specific EBPs supported (or mandated) by that funder. Both programs offer training and technical assistance, provide guidance on evaluation, seek to improve the fidelity of implementation of programs, and address other needs expressed by both the funders and the community-based educators. The third, more general program (Program C) takes place in the United States. All three programs have some relation to a university. Programs A and C are both based in a center focused on translational research in the social and behavioral sciences. As such, they are at the interface of research and practice. Program C is also part of the Cooperative Extension System. Program B is a partnership of a U.S. university and a Kenyan faith-based organization. These three programs were selected for inclusion in this study because they are data rich—at the time the study was conducted, each of them was experiencing increased pressure from various stakeholders to be more “evidence-based.” In other words, my approach to sampling (at the level of organizations, programs, and people) was purposive, directed at cases in which this study’s phenomena of interest were particularly salient.

Data Collection and Analysis

I collected qualitative data via semi-structured interviews, observation, and document analysis. I interviewed thirty individuals (roughly ten per program). Interview questions were designed to elicit both people’s stories of their work practices and people’s conceptualizations and perceptions of key constructs such as evidence, the research-practice gap, and non-formal education. The coming together of people’s stories of their work and people’s more abstract conceptualization of their work ideally opens up space for tensions and gaps to emerge, highlighting moments and places where seemingly universal constructs are actually enacted in a multitude of disparate and even contradictory ways.

I observed over 100 hours of discrete events such as meetings, public lectures, plus many additional hours of everyday work activities. Observation of the Kenyan program was limited due to feasibility constraints, though I did observe a week-long meeting in Nairobi that focused explicitly on the need for the program to be more “evidence-based,” which was a very data-rich meeting. In addition to interviews and observation, I also collected textual data. Language and other aspects of discourse are extremely important given the focus of this study (Wilson, 2009). As such, my inclusion of textual data offered an additional level of insights and perspectives about the phenomena of interest. The analysis of all three types of data was supported using a computer assisted qualitative data software program, ATLAS.ti 7.0. I coded the data using a blend of a priori codes (based on my research questions) and “emergent” codes.

Results: Making “Evidence-Based” Non-Formal Education

Each of the three focal cases presents its own nuances regarding the politics of evidence in practice, yet taken together, certain trends emerge that have clear implications for non-formal community education in general. Throughout, key issues include: *adaptation of programs* (e.g.,

Who is allowed, as “expert knower” to adapt a program and who is not? How much adaptation is allowed before another RCT should be conducted to retest the program’s effectiveness?), *cultural and local appropriateness of programs* (e.g., How much external validity or generalizability is expected for a program that has been proved to be effective via an RCT? What elements of a curriculum that was developed and tested in the United States must be adapted to “Kenyanize” it?), *amenability of different phenomena, constructs, or (in this case) versions of education to RCTs and EBPs* (e.g., are certain types of education, such as tightly-scripted sexual health lessons, more suitable to being tested via RCTs and packaged via EBPs, than other types of education, such as holistic community development types of programs?). Building on this last theme, I parsed people’s divergent perspectives and assumptions about the ontological status of non-formal education into two modes (Table 1).

Table 1
Divergent Perspectives and Assumptions about What Non-Formal Education is

	Mode 1	Mode 2
Non-formal education is...	An infrastructure for the dissemination of scientific information	A site of grassroots knowledge sharing
Program planning and evaluation decisions are...	Campus- or scientist-driven	Community-driven
The essential unit of educational interaction is...	A program (meaning a tightly bounded and scripted curriculum)	A set of practices and processes
Behavior change is assumed to be...	Simple, or complicated; linear	Complex; non-linear
The focus is on...	Content delivery and specific outcomes	Process facilitation and general outcomes

While this table presents an overly simplistic and falsely dichotomized characterization of the two modes, it does offer a useful heuristic for the analysis of various contemporary approaches to making community education more “evidence-based.”

Conclusions and Implications

Through my elucidation of the intricacies and contingencies involved in making non-formal education more “evidence-based,” I am able to highlight divergent perspectives and assumptions about what non-formal education is and about how it should be informed by research evidence. Specifically, non-formal education is constituted by some people as an infrastructure for the dissemination of scientific information and by others as a grassroots site for knowledge sharing. Relatedly, it is alternatively perceived and performed as a program (meaning a tightly bounded, scripted curriculum) or as a set of practices. While the conflicts and tensions between these divergent perspectives may appear academic or irrelevant, I argue that they have stark implications for what non-formal education is and can be in society. Looking through the lens of epistemic justice, I conclude that the self-evident superiority of evidence-based programs must be revisited if we are to move towards an ethical praxis of non-formal education which embraces rather than effaces the intricacies and nuances that characterize social human action.

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