International Journal of
Education Policy & Leadership

IJEPL
Volume 10(2)
2015

Educational Contracting and the Translation of Research into Practice: The Case of Data Coach Vendors in Delaware

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Abstract In the United States, federal and state accountability policies put demands on educational agencies that often exceed their capacity. As a result, a variety of educational organizations are contracted to design and implement policy. Programs and services offered by these contractors are not only instrumental in the process of mediating and implementing policy, but may also be instrumental in translating research into practice. To explore this issue, a case study is conducted using vendor proposals for Delaware's data coach initiative. Data are analyzed through content and citation analyses to examine the degree and nature of research use by selected educational contractors. This research offers not only new directions for studies of research use in policy, but also lessons for policymakers and practitioners who seek the services of educational contractors.

Keywords Research use; Educational contracting; Accountability

Elizabeth Farley-Ripple & Akisha R. Jones. (2015). Educational Contracting and the Translation of Research into Practice: The Case of Data Coach Vendors in Delaware. *International Journal of Education Policy & Leadership 10*(2). URL: http://journals.sfu.ca/ijepl/index.php/ijepl/article/view/146

In the United States, federal and state accountability policies put demands on educational agencies that often exceed their capacity. In 2001, No Child Left Behind legislation required 100 percent of students to achieve proficiency by 2014. As the deadline rapidly approached, the federal government has offered waivers for exemption from policy requirements, but with demanding expectations for improvement (USDOE, 2012). Concurrently, Race to the Top funds were made available through a grant competition, offering states substantial funds during difficult economic times to support improvement efforts, but requiring that "ambitious" strategies and policies be adopted in order to qualify. In this context, schools, districts, and states nationwide are under increased pressure to make dramatic changes to ensure achievement of proficiency by all students. These demands often exceed the capacity of education agencies to design and implement ambitious reform, particularly as state education agencies have experienced declining budgets and staff (CEP, 2011; Jochim & Murphy, 2013). One response to this overextension is for education agencies to turn to a range of external organizations (Datnow & Honig, 2008; Honig, 2004; Jacobson, 2008) for support—what Rowan (2002) referred to as the "school improvement industry"—which includes for-profit vendors, technical assistance agencies, universities, nonprofits, and other types of organizations. These organizations are given a contract by educational agencies to design, implement, or evaluate improvement initiatives.

Contracted organizations are referred to by a variety of names—intermediary organizations, vendors, technical assistance providers—and are described by the purposes they serve (see Honig, 2004, for a more thorough discussion). Research argues that such organizations can play a powerful role in mediating policy (Coburn, 2005; Honig, 2004), yet most studies to date have typically focused on these organizations as "background" in implementation research (Honig, 2004). Overall, the research on these organizations is sparse (Burch, 2007). Calls for additional research emphasize the need to determine if and how interactions between educational agencies and these other types of organizations can influence the design and implementation of policy.

The purpose of this article is to explore a *secondary* role of educational contractors or vendors. Research on these organizations, though scant, typically focuses on policy implementation in the content area for which the contract was given—for example, Coburn's (2005) analysis of reading instruction in California. However, educational contractors or vendors are situated to serve a secondary but potentially significant role as brokers of research-based knowledge (Davies & Nutley, 2008).

Theoretical framework and research perspectives

Research brokers—those who package the outputs of the research community to policy makers (Sundquist, 1978)—are important within the context of accountability. Policies such as *NCLB* demand evidence-based decision making and the selection of research-based programs in school improvement efforts. Accountability policies have elevated the importance of educational research and research-based knowledge, yet gaps between research, policy, and practice persist, as educational agencies struggle to dedicate limited resources (time, in particular) and capacity (human, in particular) to the range of needs that must be met. A number of studies have examined

how intermediary organizations can serve to link research, policy, and practice, yet these studies typically focus on state or district partnerships with organizations whose primary role has been to support the integration of research into design and implementation of policy (see volume edited by Coburn & Stein, 2010; Cooper, 2012; Scott, Lubienski, DeBray, & Jabbar, 2014). The contribution of educational contractors to educational policy through research brokering has been only minimally acknowledged (Smylie & Corcoran, 2009; Rowan, 2002; Massell & Goertz, 2012) or studied in the field of education, yet the potential for these organizations to both extend the capacity of educational agencies to implement reform and to translate research into policy and practice demands further attention.

This article contends that educational contractors can influence the use of research in a) the design of policy and b) in the implementation of policy. When seeking supporting services, educational agencies can offer funds to educational contractors, typically on a competitive basis, through a request for proposals (RFP) process. Proposal responses to the RFPs detail programs or services that may or may not be evidence-based or draw on educational research. The successful respondent therefore shapes the research base (or lack thereof) behind the final policy implemented. Then, upon receiving the contract, vendors are responsible for implementing their evidence-based plan with fidelity, supporting the translation of research-based policy into practice. In cases where RFPs are loosely constructed, with content and delivery determined by the contractors, educational contractors are well positioned to influence policy and practice through the evidence base of their programs or services. In cases where RFPs are tightly constructed, with content and delivery predetermined by the educational agency, then educational contractors are relatively less influential in serving as research brokers in educational policy.

Given the role of educational contractors in translating research into both policy and practice, there exists a need to consider the degree and nature of research use by these organizations. We direct attention to this oversight by way of exploring the case of the data coach initiative in Delaware, guided by the following questions:

1. Are programs/services offered by vendors based in research evidence?
2. What type of research is influential in vendors' services? Specifically, what sources, methods, and other characteristics of research are utilized?
3. Is there a core body of research that influences vendor programs/services?
4. Is there any relationship between vendor/proposal characteristics and research use?

Context of study

Delaware was among the first awarded a Race to the Top grant, in which the Delaware Department of Education (DEDOE, 2010) proposed an initiative commonly referred to as "data coaches." The RFP was loosely constructed in the sense that there were few prescribed elements to the planned initiative:

1. Following a proven approach to using data to inform instruction
2. Analyzing, drawing conclusions from data
3. Facilitating collaborative planning sessions to build technical and pedagogical skills and providing feedback

4. Being flexible and responsive to build strong relationships and a culture that values open discussion and responsiveness to data

This left substantial room for vendors to develop new programs or to propose previously developed programs. Furthermore, the RFP included a section entitled "Evidence of Effectiveness," specifically requesting "the research base for your methodology." This section accounted for 30 percent of the total score assigned each vendor, constituting the criteria with the greatest weight in the evaluation process.[1]

The issue of data coaches is also a salient one, as most education agencies have emphasized increased data use in order to improve instruction, and assessment/data represents a growth industry in education (Burch, 2006). Additionally, research related to data use has a number of characteristics, which make it ideal for an exploration of vendors as research brokers. First, the body of research specific to data use is relatively small, in comparison to, for example, reading instruction. Thus, the pool of research is bounded and its uptake can be assessed more easily than in other areas. Second, data use has been connected to a number of other potentially relevant literatures, including leadership, school culture, professional development, and effective instructional strategies. These secondary bodies of literature are added to the pool of research, offering an opportunity to examine whether educational contractors are drawing on a broader or narrower set of research when developing programs and services.

Methods and data

We use a bibliometric strategy with a combination of content and citation analysis to investigate the characteristics and quantity of research evidence (broadly construed) utilized by vendor responses to the data coaches RFP. Data are drawn from the population of vendor responses (N = 14) to the state-issued RFP. Though there is no way to ascertain the representativeness of this pool of applicants, we believe that this strategy is both a reasonable approximation in the absence of a clear sampling frame, as well as appropriate for the exploratory nature of the study.

Research, as defined by the Cambridge Dictionary, is "a detailed study of a subject in order to discover information or achieve a new understanding of it." To this end, we consider all materials referenced in support of the knowledge base underlying vendor services to be potential sources of research evidence. Though narrower definitions might be applied, our purpose is to explore the nature of the evidence base supporting educational vendors; bounding the definition of research would prohibit a full description of that underlying body of knowledge.

Data

Cited research measures. Although the RFP indicated several sections of the proposal in which citations would be appropriate, we initially sought to document research use under the section entitled "evidence of effectiveness." However, only 96 (49%) of all references were used in this section of the proposal. This excludes more than half of references and may not actually reflect vendors' use of research evidence. For example, in one proposal under the "evidence of effectiveness" section, the vendor directed the reader to earlier parts of the proposal in which a rich body of research was presented. In this case, only one of many references was actually cited as evi-

dence, when in fact all references served in this capacity. Because of this being a potential issue across all proposals, made explicit or not, we refocused analyses on *all* references, interpreting findings as liberal estimates of the use of research. Reference lists, footnotes, and undocumented references to research were extracted from each proposal to create a dataset of research evidence employed by the vendors.

To categorize the type of research evidence utilized, either the abstract or complete reference were located and examined by one member of the research team, with member checks on agreement conducted by the lead researcher to ensure reliability. We initially categorized references as having a primary focus that is *empirical*, defined as based on systematic observations or data; *review of literature*, defined as synthesizing existing theory or work; or *conceptual, theoretical, or advocacy*, defined as presenting a non-empirical perspective on an educational issue. This latter category also included prescriptive literature. Empirical references were then coded in an *a priori* framework organized around non-mutually exclusive categories of quantitative, qualitative, survey, evaluation of an intervention, and case study. An additional category of empirical evidence emerged, which we label "data"; these included references that supplied data without significant analysis or interpretation (e.g., state data websites). All references were categorized by publication venue or source (journal, book, chapter in book, published report, conference paper, dissertation, or other), and their use in the proposal (located under "evidence of effectiveness" or other section). We additionally coded each reference by primary research topic, as the issue of data use is often tied to multiple fields of inquiry. These codes developed through an emergent coding process in which one member of the research team generated a list of key topics covered by each reference. The second member of our team conducted a member check and developed a collapsed set of categories covering a broader range of research topics. The identified topics were:

> ***Teacher or principal education.*** References focused on issues related to teacher or principal preparation programs.
>
> ***Achievement/achievement gap***. References focused on analysis of student achievement, racial or other achievement gaps, or student performance at school, district, state or national levels.
>
> ***Teacher quality, effectiveness, or evaluation.*** References focused on the measurement or predictors of teacher quality or effectiveness, or references focused on performance evaluation of teachers.
>
> ***Professional development/coaching***. References focused on evidence of teacher learning, methods and topics of professional development, and coaching models for improving instructional capacity.
>
> ***Instructional strategies/pedagogical content knowledge***. References focused on teacher knowledge or practices, but not the development of that knowledge/practice.
>
> ***Learning/instructional theory***. References describing, summarizing, or synthesizing theories of teaching and learning.
>
> ***Other theory/frameworks***. References describing applied frameworks or implementation of theory; for example, research discussing Response to Intervention frameworks.

School and community contexts. References focused on systems, structures, and cultures within schools, including teaming, professional learning communities, school–community partnerships, and distributed leadership.

School improvement, reform, and policy. References focused on school improvement strategies or programs, educational reform, and educational policy in general.

Data use. References focused on educators' use of data or programs to foster educators' use of data.

Assessment. References focused on issues of measurement, types of assessments, or assessment frameworks.

Many references draw conclusions about or include implications for many of these topics; however, we applied categories based only on the primary purpose of the research.

Vendor characteristics. A database of vendors was also created, with variables describing the organization type/affiliation, organization size, proposal budget, and educational background of key personnel (see Table 1). These characteristics were directly attainable from the RFP responses, as they were required components of the proposals. Organization size and budget/cost are continuous variables; however, because of the small sample ($N = 14$) and wide range of values, we transformed these into categorical variables based on quartiles to generate groups of cases. The other variables were categorical in nature. Organization type was categorized as for profit, nonprofit, and university based. Educational background was determined by whether any of the project leadership identified in the proposal had either an EdD or PhD. This was unavailable only in one case.

Table 1. Descriptive statistics of vendor measures

	N	**%**
Organization type		
for profit	12	85.7
nonprofit	1	7.1
university based	1	7.1
Education of leadership		
With PhD	6	42.9
With EdD	3	21.4
With Master's or lower	4	28.6
Not available	1	7.1
	Mean	**SD**
Proposed budget cost	6,610409	7,676,314
Quartile 1 ($n = 5$)	1,225,348	766,976
Quartile 2 ($n = 2$)	1,655,429	1,499,673
Quartile 3 ($n = 4$)	7,317,155	1,110,344
Quartile 4 ($n = 3$)	17,946,502	9,383,968
Organizational size (employees)	751	1220
Quartile 1 ($n = 4$)	20	16
Quartile 2 ($n = 3$)	79	39
Quartile 3 ($n = 4$)	450	282
Quartile 4 ($n = 3$)	2800	1153

Analysis

Research characteristics data were initially analyzed descriptively using frequencies and cross-tabulations to answer our first two research questions, which focus on the characteristics of research utilized by vendors in this study. Additionally, we utilized a social network analysis approach to examine our third research question, which focuses on the core body of research influencing services offered (see Borgatti, Mehra, Brass, & Labianca, 2009, for a discussion of network analysis in social sciences). A social network approach examines relationships between actors in a network and has been applied to bibliometric analyses to examine the impact of and relationship between particular research articles, scholars, and journals through citation networks. We adopt a particular strategy similar to *co-citation analysis* (White & Griffith, 1981), which can be used to identify authors citing similar references or to identify connections between research disciplines. Applied to the study of research use by educational contractors, these methods can determine the relative importance of each reference as well as the relationship between vendor proposals based on common references. We conceptualize the field of vendors as a sample network of professional development providers that provide services related to schools' and teachers' use of data in educational decision making. Concurrently, we consider the range of research employed in vendor proposals as the population of research influencing practice. Bringing these two sets of data together, we generated a two-mode matrix connecting research to vendors. We utilized UCINet and Netdraw (Borgatti, Everett, & Freeman, 2002) to analyze and transform this network.

We first produced a two-mode matrix in which research references and vendors are nodes. In this network, vendors are tied to their references, which may be tied to other vendors if both cite the mutual reference. Within this network, we are interested both in the characteristics of the network as a whole and in the network position of both vendors and research. We utilize measures of network density and fragmentation to assess the nature of research utilization by vendors in this field. In such a network, dense ties—as measured by the proportion of ties possible that actually occur—would indicate that the population of vendors is utilizing a common body of research and, by extension, that services would be similarly based in that body of work. Fragmentation—as measured by the proportion of the network that cannot "reach" each other through ties—would indicate that there are disconnected vendors or groups of vendors who do not share any references in common. For example, high fragmentation would indicate that the population of vendors draws on distinct research bases when providing services.

In addition to the characteristics of the network as a whole, we also are interested in the network position of vendors and research references. That is, within the structure of the network, where is each vendor and reference located? To identify a "core" body of research that influences data use programs and services, we focus on degree-based centrality, which measures how important a reference is by the number of ties it has to vendors. A more central reference would be considered more influential than less central ones. Each reference's "degree" centrality is then examined in conjunction with other reference characteristics (e.g., topic, method) to determine the characteristics of the most influential research.

We similarly consider the degree centrality of vendors. To do this, we performed an affiliations transformation (multiplying the matrix by its inverse) to create a network in which each vendor is a node and the ties between nodes indicate their utilization of a common reference. That is, a tie indicates that two vendors had a reference in common. Within the vendor network, we calculated the degree centrality of each vendor and added this to the set of characteristics of vendors used to answer the fourth research question. To assess the association between vendor characteristics and the use of research, we conduct correlation and compare means across vendor types and characteristics.

Limitations

There are a number of limitations to this research design. First, the sample is limited to the data coach initiative, which may not be representative of other competitions and may relate to bodies of research that have significantly different characteristics than other research areas. Relatedly, the population of vendors is small, which may not be sufficient to understand the distribution of characteristics across the larger population of vendors or references, and which results in insufficient power to detect statistically significant differences. Third, we operate on the assumption that research cited in proposals represents good faith efforts to draw on existing evidence in program design and delivery, rather than strategic inclusion of well-known works or large numbers of references to symbolically comply with RFP requirements. Lastly, the set of vendor and research characteristics included in analysis may not represent all potentially important attributes associated with the brokering role of educational vendors. We therefore offer results and conclusions with the caveat that additional research is needed to explore the significance of these limitations.

Results

Research Base of Programs and Services

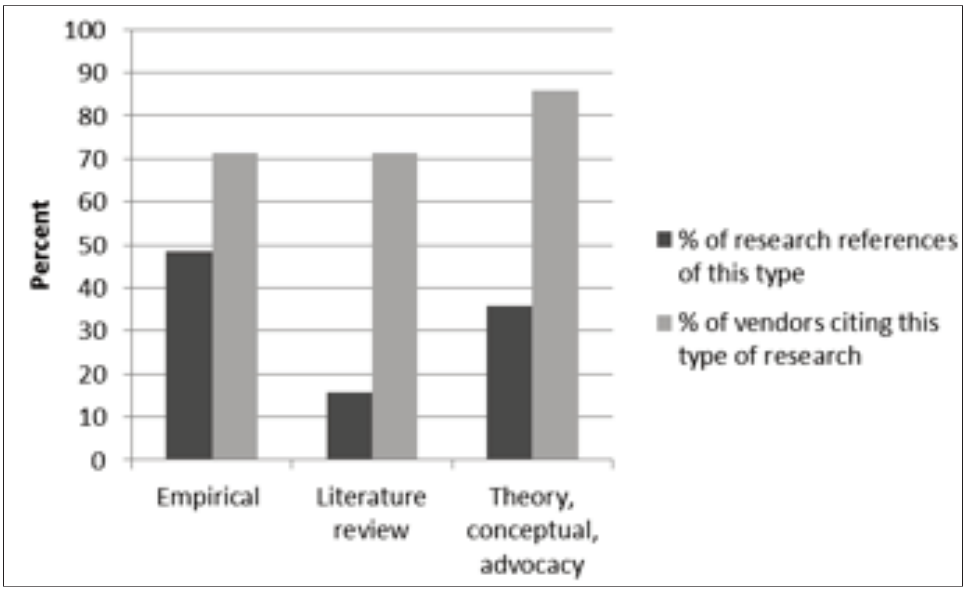
Of the 14 proposals, 12 (85.7%) provided citations indicating their services were supported by research evidence, and two (14.3%) proposals had no citations indicating a research base at all. A total of 197 references were cited by the collective group of vendors, though vendors varied widely in the degree to which they referenced research, ranging from two research resources to 49. The mean number of references was 17.5, with a standard deviation of 15.04 and a median of 12.5 (excluding those who had no references cited).

As explained earlier, the types of research referenced in vendor responses to the RFP were analyzed in terms of whether they were considered empirical, and if so, they were then analyzed in terms of the methodology employed, general research focus, and publication source. The results of these analyses are presented in Figures 1–4.

Results in Figure 1 illustrate that empirical research is most frequently cited in support of vendor services, though it does not constitute the majority of references, nor is it the type of reference vendors used most. Literature reviews constitute the smallest proportion of all references, but are cited by as many vendors as empirical research. Further, though theoretical, conceptual, and advocacy work does not constitute the largest proportion of references, this category of research is referenced by

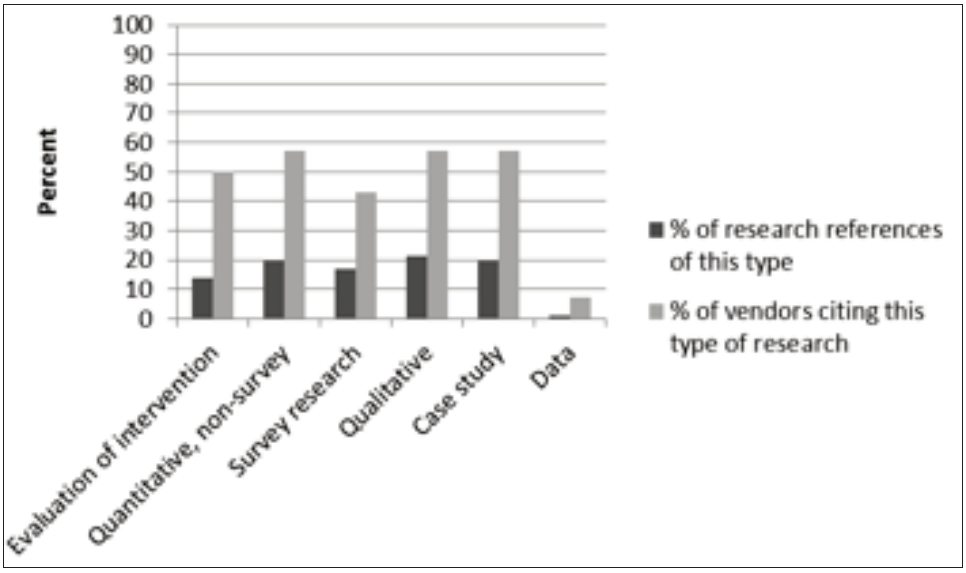
the majority of vendors. These findings offer evidence that vendors do not utilize research in similar ways. Rather, it seems that fewer numbers of vendors make use of many empirical studies, while more vendors rely on fewer literature reviews and theoretical works.

Figure 1. Distribution of references by nature of research



The distribution of empirical references by method (Figure 2) reveals relatively equitable distribution of studies with varying characteristics, ranging from 13 percent for evaluations to 21 percent for qualitative studies. The proportion of references suggests that there is no particularly dominant methodology utilized by vendors as a whole. Similarly, the proportion of vendors referring to each type of research is more balanced than analyses based on other characteristics, suggesting that vendors do not vary substantially in their preferred type of research evidence. However, data sources, such as state data websites, were less often used and were used by only one vendor.

Figure 2. Distribution of empirical references by method



In Figure 3, results indicate that research available as published reports comprises the largest portion of references used among vendors, with a nearly 20 percent difference from the next most frequent publication source (journals). Books and journals each constitute approximately a fifth of the references, with chapters, conference papers, internal reports, and dissertations all constituting less than 10 percent. "Other" publication sources included references to websites, webinars, and DVDs, but were few in number. In comparison to the proportion of references constituted by each source, the proportion of vendors citing each source is quite different. More than three quarters cite books, and a majority cite published reports, journal articles, and other sources. This suggests that, while some sources are fewer in number, they enjoy great popularity, as evidenced in how many vendors utilize them. Thus, the quantity of each type of reference is not an indicator of how central they might be in vendors' use of research.

Figure 3. Distribution of references by publication source

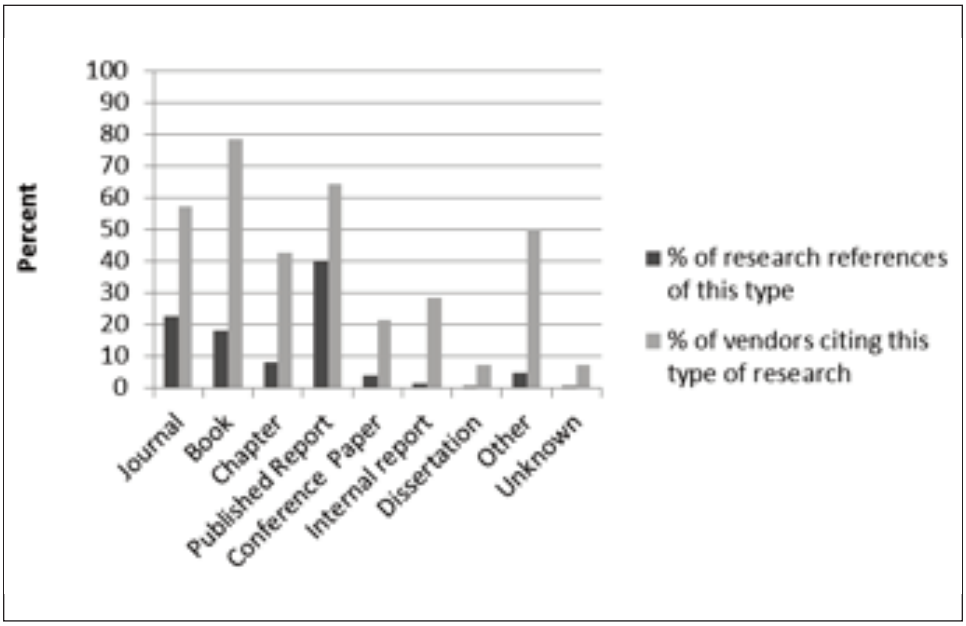
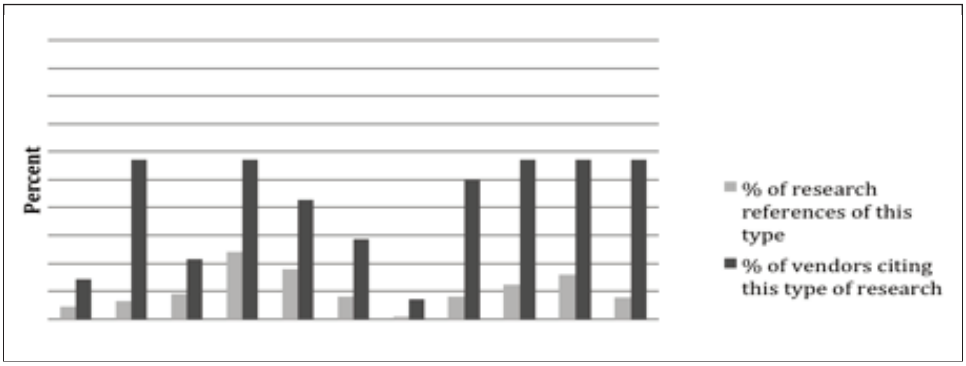


Figure 4 presents the distribution of references by research topic. Here we see a wide range of topics presented, with no clear field of study emerging as most influential. Among the most frequently cited are professional development/coaching; instructional strategies/PC; data use; and school improvement, reform, and policy, all constituting more than 10 percent of the set of references. These are also more likely to be cited by a majority of vendors. Less frequent and influential topics include teacher/principal education, teacher quality, learning/instructional theory, and other theories/frameworks. Interestingly, there are a few topics that constitute a small portion of the references but are popular among vendors, including assessment, the achievement gap, and school contexts. This indicates that a broad range of research may be influential across many vendors, regardless of whether there are many or few references on the topic. In fact, proportionally, those references that constitute the smallest proportion of all references but are cited by a majority of vendors may be the most influential, in contrast to a larger body of work cited across multiple vendors.

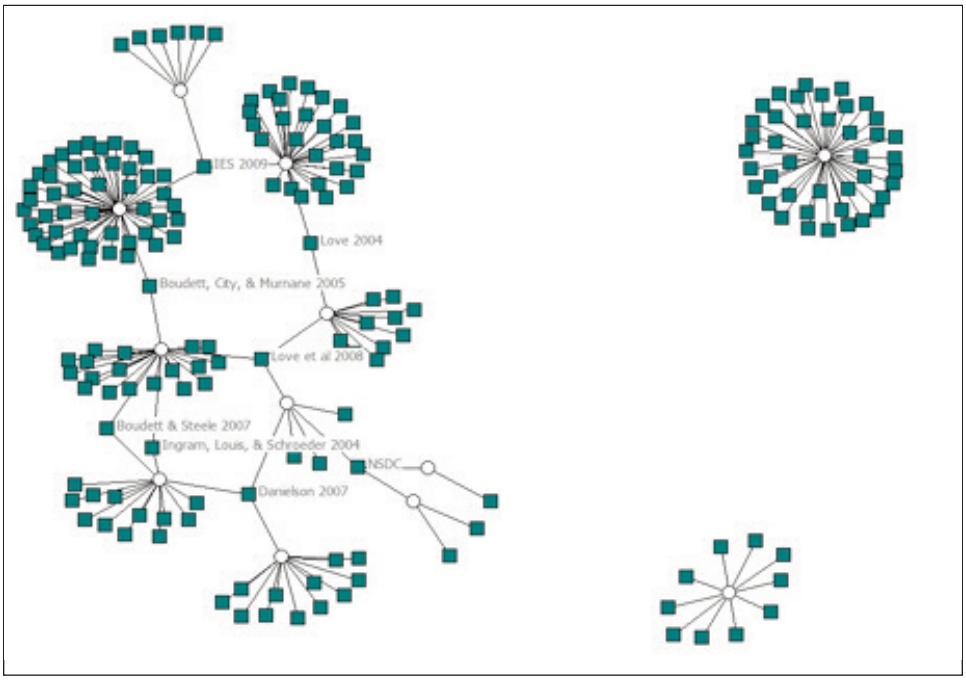
Figure 4. Distribution of references by topic



Network characteristics

We build on these descriptive findings through network analyses. Figure 5 illustrates the two-mode network of vendors and research. Vendors are represented by white circles, and research references are represented by grey squares. Figure 5 provides a visual illustration of many aspects of the research–vendor network captured in our data. As discussed in our methods section, we focus on network characteristics of density and fragmentation, as well as centrality for research references.

Figure 5. Two-mode network of research and vendors



The two-mode network has a density of .088, which means that about 9 percent of the ties possible within the network are actually present. In the context of this analysis, this means that there are few ties—that is, references—common between vendors. The low density of this network is visually evident in Figure 5 and indicates that there is not a commonly identified body of research on which vendor services are based. Not surprisingly, fragmentation in this network is substantial, at .402, which means that 40 percent of the network is not reachable through other ties. In

the context of this analysis, this means that a significant portion of research references and vendors have no connection to other research and vendors. This is visually presented above, as two vendors and their corresponding references at right have no connection—common references—with other vendors. On the left side of Figure 5, we see the remaining ten vendors, who are connected by at least one tie or common reference. Notably, however, the connections between vendors are tenuous, with very few common research resources cited. Only one pair of vendors shares more than one reference in common, with the remainder tied to other vendors via a single common reference.

In fact, only eight references (labeled in Figure 5) were mentioned by multiple vendors: four were referenced by three vendors (centrality = .25), and four were referenced by only two vendors (centrality = .17). Those referenced by more than one vendor will have greater degree of centrality, which we interpret as a measure of influence on the data use services field. Central references were more likely to focus on data use (6 of 8), to be non-empirical (5 of 8 were conceptual/prescriptive, 1 of 8 was a literature review), and to be books (4 of 8), in contrast to the proportion of these characteristics in the larger population of references.

Those that emerged as central are not surprising for a few reasons. First, an emphasis on data use might be expected to be common across vendors, given the purpose of the RFP. Second, several of these common references reflect popular tools in practice. For example, Data Wise is a popular prescriptive program for using data to improve schools (Boudett, City, & Murnane, 2005; Boudett & Steele, 2007), so this reference may be more likely to be recognized by professional developers creating programs as well as recognized by the state and practitioners adopting vendor services. Similarly, Danielson's (2007) framework has been adopted by many local education agencies to develop and evaluate teachers. Third, the centrality of non-empirical work is telling. This may confirm recent claims that "the practice of data use is out ahead of research. Policy and interventions to promote data use far outstrip research studying the process, context, and consequences of these efforts" (Coburn & Turner, 2011, p. 200). At the time the RFP was issued, substantial research was underway investigating educators' use of data, but in general the field is in its infancy, working toward a clear body of knowledge to inform practice. However, the availability of empirical studies, not only of data use, but of other related topics (e.g., coaching, professional development, teacher collaboration), appears underrepresented among central references, and this is indicative of weak links between research, policy, and practice.

Relationship between research use and vendor characteristics

Our final research question focuses on whether there are any relationships between the characteristics of vendors and the characteristics of research references used. Because 12 of the 14 vendors are for profit, we focused our analyses on characteristics of organization size, budget cost, and education level of project leadership in relation to six measures of research use: number of references; proportion that are empirical, literature review, or conceptual/advocacy/theoretical; proportion used as evidence of effectiveness; and degree centrality. Table 2 presents a comparison of the

number of references, proportion of references of different types, and proportion of references used as evidence of effectiveness by education level of vendor project leadership. Only one relationship was statistically significant, with vendors led by staff with no doctorate, or with an EdD, more likely to use references as evidence of effectiveness than those led by staff with PhDs. This pattern is difficult to interpret and may be biased due to how evidence of effectiveness was discussed within each proposal (see earlier discussion). Table 3 presents Pearson's correlation coefficients examining the same measures of research use by vendor size and budget. There are no statistically significant relationships, and only two cells approach a moderate relationship. These relate to organizational size and suggest that larger organizations are more likely to use a greater number of references, but less likely to refer to them as evidence of effectiveness.

Table 2. Relationship between research use and vendor leadership education[2]

		Mean	SD
Number of references	No doctorate	10.40	11.84
	PhD	18.67	16.21
	EdD	15.67	22.14
	Total	15.07	15.30
Proportion of references: empirical	No doctorate	0.26	0.24
	PhD	0.51	0.18
	EdD	0.24	0.34
	Total	0.38	0.24
Proportion of references: literature review	No doctorate	0.21	0.11
	PhD	0.18	0.18
	EdD	0.07	0.10
	Total	0.17	0.14
Proportion of references: theoretical, conceptual, or advocacy	No doctorate	0.51	0.19
	PhD	0.40	0.19
	EdD	0.68	0.45
	Total	0.48	0.24
Proportion of references used as evidence of effectiveness	No doctorate	0.69	0.36
	PhD	0.33	0.28
	EdD	0.96	0.05
	Total	0.55	0.37
Degree centrality	No doctorate	2.00	1.22
	PhD	2.67	1.75
	EdD	2.00	3.46
	Total	2.29	1.90

In general, there appears to be no pattern in the relationships between research use and vendor characteristics as measured in this study. However, the sample is small and homogenous in terms of whether it is for profit, nonprofit, or university

based—a potential indicator of association with the research community as well as of resources for conducting internal research and development. Further inquiry that tests this particular relationship is needed to understand this potential factor.

Table 3. Correlation testing relationship between research use and vendor characteristics

	Cost	Cost Quartile	Size	Size Quartile
Number of references	-.001	.243	.001	.411
Proportion of references: empirical	-.314	.058	.207	.159
Proportion of references: literature review	-.028	-.224	.203	.235
Proportion of references: theoretical, conceptual, or advocacy	.191	.016	.028	-.060
Proportion of references used as evidence of effectiveness	.112	-.143	-.384	-.200
Degree centrality	.098	.252	-.199	-.060

Discussion

The purpose of this analysis has been to explore the role of educational contractors, or vendors, as research brokers who translate research into practice through the development and implementation of services in schools. Findings with respect to our first research question—which reflects whether services are based on research—suggests that in fact, vendors do appear to base their work in educational research, broadly defined. However, the variability among vendors—with two not including any evidence base, and some utilizing upwards of 40 different references—suggests that not all providers utilize research in their programs, in spite of research evidence being a required component of the state's RFP. This finding brings into question the extent to which research is valued by vendors in program development and delivery. Further, the variability in the nature of the research base supporting vendor services suggests that being "evidence-based" is interpreted broadly. Just under half of references were considered to be empirical and nearly a third of vendors did not reference a single empirical source. This suggests that programs implemented in schools may be only loosely grounded in empirical evidence, if at all.

In response to our second research question, the research base utilized is notably broad in terms of method, topic, and publication source. This finding is highly consistent with the state of data use research, which is primarily descriptive in nature and is conceptually linked to many other issues of teaching and learning, such as professional community, collaboration, professional development, leadership, and school improvement/reform. Additionally, as data use research is an emerging rather than highly developed field of study, work is available in a variety of formats, ranging from prescriptive literature, to evaluation reports posted to websites, to formal peer-reviewed journals.

Through our third research question, we explore the extent to which there is a core body of research that influences vendor programs or services. Although vendors utilized a broad range of references in explaining the research base and evidence of effectiveness of their services, the core body of research employed—those common to multiple vendors—was small and far more homogenous, including primarily non-empirical literature and emphasizing data use. There are several potential explanations for this finding. First, it may be interpreted as consistent with claims that practice has outpaced research for this improvement strategy: the fact that this core set of work emphasizes data use may indicate that vendors desired to draw more directly on research related to data use, and that in the absence of a strong body of empirical work (at the time of the RFP), they may have relied on popular prescriptive work. In contrast, it may also suggest that the relevant literature is broad and complex, such that using it for program development could entail exploring only small portions of the relevant literature leading to diverse programming in schools. Finally, this finding may reflect the effort vendors dedicate to the development of products and to the proposal process, signaling search and incorporation of research in less than comprehensive and meaningful ways. Irrespective of interpretation, there is little to suggest that a common body of research is influencing practice.

Finally, we considered the possibility that the role of research in vendor services might vary by the characteristics of the organization. Evidence presented here does not suggest that research use is associated with the size, education level, or cost of services. That does not preclude the possibility of other organizational characteristics being related to research use—including attributes not observable in this study or attributes not captured in this population of vendors. For example, only one vendor was affiliated with a university, and one was a nonprofit. In fields with greater numbers of vendors of these types, differences may emerge.

As an exploratory study, the context of this analysis is limited to a single state and initiative. Further, the initiative in question—data coaches—is not only linked to a broad range of educational research, but is also directly connected to emerging work on data use. The nature and quality of related research used by vendors is likely to differ by the initiative and by state/district context. We believe further research of this type is needed, and it is our hope that the type of work here motivates broader inquiry in other areas influenced by the privatization phenomenon.

Conclusion

The current accountability context places demands on educational agencies that often exceed their capacity. As a result, a variety of educational organizations are contracted to design and implement policy-mandated programs—and such privatization has been acknowledged in data use related areas of data management and staff development (Burch, 2009). The programs and services offered by these contractors not only serve as mechanisms for mediating and implementing policy, but may also play a brokering role in translating research into practice. However, there has been no discussion or evidence to date about the degree or quality of research use in their products, in spite of increased expectations for evidence-based decision making and practice.

This discussion should be part of the public dialogue, since vendors are positioned to have an impact on what happens in schools. Quality matters, and attention needs to be paid to whether the services implemented are likely to improve teaching and learning. We highlight three salient issues: research production, agency demands for quality, and vendors' use of research in developing services.

First, findings suggest limited linkages among the research used in vendor proposals. We offered multiple interpretations of that finding and the implications for research production. Whether practice is ahead of research in the field of data use, or whether research is so broad and complex that users can draw on entirely separate bodies of work, our results should signal researchers to focus efforts on current problems of practice in schools—here, implementing data use in schools. Building coherent bodies of knowledge around issues highly relevant to school improvement efforts may help users—vendors, policy makers, administrators, and so on—to be clearer about which research can and should inform decisions and to make better informed choices.

Second, this work is premised on being able to ascertain the role of research from vendor proposals, which are in turn organized by the demands put forth in the state RFP. Delaware requires discussion of the "evidence of effectiveness" and "research base for your methodology." Laudably, this section carries the greatest weight in the scoring of proposals. This may or may not be the case for other state or local education agencies, which has two implications. First, it may make inquiry of this nature difficult to pursue, as identifying the population of vendors, assessing the research base from internal documents, and comparing across institutions may be excessively time consuming and reliant on information not accessible to researchers. Second, and perhaps more importantly, whether or not RFPs incorporate demands for research use may indicate how the agency values research and may reflect expectations for the quality of proposals. Policy makers committed to evidence-based practice should consider the ways that it can be incorporated into all programs, including those supported through educational contractors. Through tasks as simple as the design of the RFP, they can communicate strong expectations and begin to evaluate the quality of services provided to their schools and teachers in terms of the supporting evidence, though such an approach has implications in terms of the skills and time required to meaningfully evaluate incorporation of research in program design and delivery. Educational agencies' approach to RFP development and evaluation is thus worthy of inquiry on its own, and at the time of this analysis, no known studies of this process have been conducted.

A second salient issue is that the services purchased to support schools ought to be grounded in evidence that implementation will improve teaching and learning. Our preliminary analyses indicate that not all vendors draw on research or other evidence, nor do they rely on a common body of evidence, in designing services. Rather, vendors' use of research varies substantially, not only in the quantity of research, but in the diversity of research referenced, as suggested by the limited overlap in referenced sources. This is a red flag for policy makers investing in vendors to leverage large scale improvement, since a lack of supporting evidence suggests that the likelihood of desired outcomes is unknown. A further consideration is whether

the evidence presented is of sufficient quality to inform decisions—a dimension of research we did not feel was appropriate for the scope of this work, but which warrants greater attention in the research use and educational policy communities.

The purpose of this article has been to bring attention to issues of evidence use, using educational contractors by way of example. Findings here offer directions for further research; more importantly, they emphasize that issues of quality should be central to the policy dialogue around educational contracting and privatization in education. Through open discussion of these issues, we can improve the quality of both the process of acquiring services and the services themselves.

Notes

1. We have opted not to discuss the details of the winning proposal, as we were granted access to these documents by the Department of Education under an agreement about confidentiality. The winner of the competition is public knowledge, and the details of the proposal are not publicly available.
2. Though the sample size is insufficient for detecting even large effects sizes among variables, relationships were tested using analysis of variance to detect statistical significance. Only one relationship produced $p<.05$ (the proportion of references used as evidence of effectiveness).

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