The Uses of Qualitative Research: Powerful Methods to Inform Evidence-Based Practice in Education

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Abstract

This article offers a rationale for the contributions of qualitative research to evidence-based practice in special education. In it, I make the argument that qualitative research encompasses the ability to study significant problems of practice, engage with practitioners in the conduct of research studies, learn and change processes during a study, and provide expansive data sets that help clarify both independent and dependent variables. Qualitative methodologies can shape and advance important questions of educational practice and policy. The concern with the degree to which qualitative research can contribute to the research base may be a reflection of the degree to which our field as a whole adequately prepares its researchers to understand and engage in high-quality qualitative research that adheres to benchmarks for internal and external validity from inception through dissemination of results.

Keywords

disabilities, qualitative research, evidence-based practice, improvement science

Housed in the U.S. Department of Education (USDOE), the Institute of Education Sciences (IES) offers funding to U.S. researchers who study educational problems. On its website (ies.ed.gov/aboutus/), introductory text explains the link between the USDOE and IES: "the statistics, research, and evaluation arm of the U.S. Department of Education." The IES' role is to provide *scientific* evidence that undergirds the nation's education policy and practice as well as its mission to share knowledge with "educators, parents, policymakers, researchers, and the public." Before the reauthorization of the Education Sciences Reform Act (2002), the USDOE had a branch with similar responsibilities, the Office of Educational Research and Innovation (OERI). The 107th Congress reaffirmed the government's commitment to scientific research and emphasized the importance of scientific research as the standard from which educational practice and policy should emerge.

In 2017, this context is important to remember as education research has been dramatically reshaped since the Education Sciences Reform Act. Special education, as a specialization within the field of education, has been deeply influenced by the increasing emphasis on scientifically established knowledge, practice, and policy. By extension, how the field warrants knowledge has been sharply impacted. This article is an example of that impact because it responds to a request to review the utility of qualitative methods in producing evidence that can identify promising practices and contribute to evidence-based practices (EBPs) in special education in particular. As Shavelson and Towne noted in 2002, there are principles that undergird

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systematic approaches to understanding and use of carefully researched practices in education. Careful research seeks conceptual understanding, poses empirically testable and refutable hypotheses, uses observation methods that can be replicated, and recognizes the value of transportability and generalizability. Our work as a scientific community should include the design of multiple kinds of studies that both sharpen our understanding as well as guide our use of what we learn, using observational methods linked to theory that allow fellow researchers to trace the links between the data, interpretation, and conclusions reached in any study. Shavelson and Towne acknowledge that any one study may not possess all these qualities. They conclude "we also urge that randomized field trials be supplemented with other methods, including in-depth qualitative approaches that can illuminate important nuances of practice" (p. 125). In this article, I advance two major arguments. The first affirms the utility of qualitative methodologies for shaping and advancing important questions of educational practice and policy such as (a) the relationship between cultural knowledge and social inequality, (b) the impact of Response to Intervention (RTI) implementation, and (c) the evolving nature of school–university partnerships (e.g., Bock & Erickson, 2015; Lareau, 2015; Thorius, Maxcy, Macey, & Cox, 2014; Waitoller & Kozleski, 2013). The second is to offer a set of benchmarks for assessing the contributions of qualitative studies to expanding how we understand and use qualitative research as part of the landscape of scientific thought, discovery, and practice.

This discussion is important as educational researchers and practitioners may experience the wealth of available research methods as conflicting approaches to knowing that produce divergent approaches to the preparation of the practitioner and research workforce. As the 2002 Education Sciences Reform Act signaled, policy makers continue to search for responses to the pernicious and seemingly intractable issues that plague our educational system. For instance, large percentages of students from specific population groups exit school without graduating. In 2016, the *Condition of Education Report* indicated that while 70% to 76% of students identified as Hispanic, Black, and American Indian/Alaska Native and 87% to 89% of students identified as Asian/Pacific Islander and White graduate from high school, only about two thirds of all students with disabilities graduate from high school (Kena et al., 2016). Male, Black students are suspended or expelled from school at higher rates than other demographic groups (Musu-Gillette, 2016). In the face of failure, some students, families, and teachers turn to remedies and solutions that have very limited evidence to support their use (West et al., 2016). As Hudson et al. (2016) pointed out, the failure to adopt EBPs stems from a complicated, context-driven, mélange of reasons that derive validity from the social contexts of educational practice. Bryk, Gomez, Grunow, and LeMahieu (2015) argued that the field has very few mechanisms that allow researchers and practitioners to work together to accumulate and legitimize knowledge through practice to provide answers to these intractable problems.

The *Getting Better* approach advanced by Bryk and his colleagues resonates with the notion of EBP, a term that migrated from medicine to education. EBP describes decision making in practice based on the available, current evidence (Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000). The notion in evidence-based medicine is that the best available research, clinical expertise, and person-centered values converge to create EBP (Sackett et al., 2000). EBP can empower practitioners and families to draw on research that offers insight into the specific issue being addressed, connect it to craft knowledge built over time through experience, and address family beliefs and expectations to make the best possible decisions given the context and what is known (Buysse, Winton, Rous, Epstein, & Lim, 2012; Slocum et al., 2014).

EBP in Special Education

Some special education researchers seem to narrow the notion of EBP so that it is both an intervention practice and a method for the selection of scientifically based interventions (Bal & Trainor, 2016; Cook et al., 2015). As constructed currently, EBP seems to have lost its connotation as a bridging mechanism between highly controlled experimental findings and the messy world of practice. Cook et al. (2015) developed a set of descriptors that were designed to help practitioners understand what level of confidence they can have in the use of any given practice: (a) EBP, (b) potentially EBP, (c) having mixed effect, (d) having negative effect, and (e) having insufficient evidence to categorize their effectiveness. Although the approach to specifying the degree of confidence has promise, it may serve to suppress applied research that can add

to a developing body of evidence by describing in some detail the contextual factors that contribute and detract from any one practice being useful in specific settings (West et al., 2016). Odom (2009) helped to frame the EBP conundrum by introducing the notion that some of our efforts to implement research in practice are "expired," some are "tired," and some are "wired." His critique reminds us that when EBPs remain descriptions of idealized practice rather than actively engaged practices that produce more knowledge about the conditions for improvement and successful outcomes, the research community remains aloof from the complex work of improvement and innovation and damages the odds of the diffusion of EBPs.

Horner et al. (2005) suggested specific criteria for single-case research. These criteria include the following: (a) specific descriptions of participants and settings (which help to address context), (b) precise description and measurement of dependent variables, (c) measurement of the fidelity of implementation of the independent variable, (d) the use of a baseline phase, (e) specific steps to ensure internal validity and experimental control, and (f) attention to external and social validity. Singer, Horner, Dunlap, and Wang (2014) echoed these elements as essential for meeting the criteria for EBP and questioned the sufficiency of qualitative research designs in identifying EBP. However, Brantlinger, Jimenez, Klingner, Pugach, and Richardson (2005) asserted that experimental, qualitative studies provide a perspective, grounded in systematic study, that can meet the criteria of evidence-based knowledge produced for the explicit purpose of advancing policy and practice. Reconciling these points of view is important for our field and promises to strengthen the tapestry of evidence on which practice must be grounded. To do this requires much better education about what qualitative research is and what kinds of questions it is best suited to answer.

Bryk et al. (2015) advanced a case for disciplined, systematic inquiry that accounts for the messy realities of schools and other educational settings. Some systemic reform failures stem from structural assumptions behind the exploration, development and innovation, efficacy and replication, effectiveness, and measurement model embedded in the IES grant application process. Moving rapidly from exploration to effectiveness may mean that researchers, who are external to the organizations that serve as the context for their research, miss important aspects of the context. Therefore, their interventions can be successful only in situations where the research team is available to solve local issues (Bock & Erickson, 2015; Kozleski & Thorius, 2014; Waitoller & Kozleski, 2015). As the local issues are solved, they are not always addressed in the results of any given research effort. As a result, the conditions necessary for improvement are absent in dissemination efforts (Evans, 2001). Bryk et al. draw on improvement science to advance a research agenda that focuses on learning to improve. Six elements are fundamental to this approach: (a) specify the problem and make it user-centered, (b) focus on variation in performance, (c) make visible the system that produces current results, (d) systematically measure the problem and change result, (e) rely on inquiry that is disciplined and systematic, and (f) create networks among communities working on the same problems.

Special education researchers have worked extensively to improve performance with systematic measurement and disciplined inquiry (Carter et al., 2015; Freeman et al., 2015; Oakes, Lane, & Ennis, 2016; Odom, Duda, Kucharczyk, Cox, & Stabel, 2014). These contributions of our colleagues are extensive and pervasive. However, special education researchers have rarely capitalized on the opportunities that qualitative research creates for understanding problems from a use-based perspective, focusing on variation in performance and making systems visible as well as engaging networks. Qualitative approaches to research have much to offer these problem spaces. Specific contexts, and the perceived and real affordances and constraints they offer, affect the social patterns of students, families, and workers within educational systems (Bal & Trainor, 2016; Kurth, Lyon, & Shogren, 2015; Leko, Roberts, & Pek, 2015). Thus, selecting methods both for understanding and practice that (a) account for context and (b) begin with the people who are affected by the change, are critical for sustained improvements.

Contributing to Social Validity Through Qualitative Research

Social validity, a hallmark of applied behavior analysis, has been a cornerstone of the degree to which what is studied offers real-time, applied value to the conduct of everyday life. The results of a study must demonstrate not only that the intervention worked with a specific group but that what was gained has social value in a specific context. For instance, teaching students to "dress for success" only works if what is

defined as dressing for success meets local standards for what constitutes success and what dress signals that success. Sustainability is another facet of social validity as social feedback is critical to sustaining a practice over time. An important source of social validity comes from users or participants. Qualitative methods make important contributions to achieving social validity. The degree to which participant voice is heard and embedded in the membership of the research team, engagement of participants in the research design, approaches to transcript analysis, and ways in which meaning is made, iterated, and shared (Jayawickreme, Jayawickreme, & Goonasekera, 2012) may be best accommodated using the methods of qualitative research. Qualitative research methods offer feedback loops that can provide information in enough depth and frequency that school practitioners (i.e., leaders, teachers, para-educators, related service providers, and staff) can shift, tune, and transform their practice, all hallmarks of learning to improve. The design methodologies of qualitative research are particularly robust when it comes to social validity, culminating in the involvement of participants in member checks of the analysis of qualitative data to ensure that the interpretations of researchers reflect the realities experienced by the individuals and contexts studied (Graungaard & Skov, 2007; Harrison, MacGibbon, & Morton, 2001). Although this article focuses on the affordances of qualitative research, keep in mind that mixed methodologies that focus on findings that intersect across methodology approaches can offer great benefit to practitioners and researchers alike (e.g., Ainbinder et al., 1998; Carter et al., 2015; Dymond, Renzaglia, Gilson, & Slagor, 2007)

The Utility of Qualitative Research

The National Research Council report on *Scientific Research in Education* (Shavelson & Towne, 2002) asserts that careful descriptive research done primarily by sustained firsthand observation and interviewing—sometimes called *qualitative* or *case study* or *ethnography*—can make valuable contributions to educational research, and that careful descriptive research falls within the range of methods in education that can be called *scientific* (Erickson & Gutiérrez, 2002). Furthermore, in 2005, Brantlinger, Jimenez, Klingner, Pugach, and Richardson reviewed the kinds of qualitative design that meet standards of trustworthiness and credibility that undergird scientific evidence. They note that qualitative research is empirical, stemming from experience and/or observation. It produces knowledge about perspectives, settings, and techniques. It involves the systematic use of specific research skills and tools. Furthermore, qualitative research is particularly well suited to the study of educational treatments which are situated and dynamically interactive. Educational interventions are locally constructed social ways of life involving continual monitoring and mutual adjustment among persons.

"What was the treatment, specifically?" is a question best answered by qualitative research (Morningstar, Shogren, Lee, & Born, 2015; Shogren, McCart, Lyon, & Sailor, 2015). It is expensive and absolutely necessary, especially as the push to scale-up research findings continues to be emphasized by policy makers. In the following sections, I advance an argument that qualitative research is an invaluable approach to discovery, understanding, and the production of evidence that can serve as the credible basis for the arrangement and conduct of educational practice. Three sections substantiate this argument. The first explains why qualitative research is needed. The second describes the fundamental principles behind warranting the claims of qualitative studies. The third notes the importance of qualitative research in advancing the use of innovative and transformative approaches to social institutions such as schooling. Finally, I summarize and highlight the key points.

Why We Need Qualitative Research

The argument for the utility and contributions of qualitative research rests in part on the recognition that interactions between individuals, within classrooms and schools, are cultural. It is the relationships that people have to themselves (their psychological understanding); to one another (anthropological and sociological perspectives); to the objects, systems, and artifacts they create (the built environment); to the particular culture in which they are embedded; to other cultures; and to the natural environment that encompass culture (Schafer, 1998). We cannot pursue understanding *AND* the use of knowledge (Stokes, 1997) without

acknowledging the role that culture plays in mediating our everyday activity since activity requires both accessing knowledge and constructing meaning. Which knowledge we access and what meaning is constructed are filtered through our cultural histories and the cultural contexts that exist around our activity. Schafer (1998) described culture in the following way:

> [Culture is] an organic and dynamic whole which is concerned with the way people see and interpret the world, organize themselves, conduct their affairs, elevate and enrich live, and position themselves in the work [through] complex interrelationships that comprise the domain of culture . . . (p. 42)

Gutiérrez and Rogoff (2003) reminded us that culture exists in the participation practices of specific cultural communities. This idea draws on the work of cultural psychology which is concerned with the ways that psychological processes emerge through participation in activity with tools (Cole, 1996). Tools in this context are both material (e.g., a book) and virtual (e.g., video) objects as well as language, gesture, and symbolic representations of reality such as organization charts or data graphs. These tools mediate how we organize and structure our understanding of the world, but they also change and restructure our daily patterns of activity, making culture a reflexive product of our localized experiences and the communities of people that we engage. This means that culture is not static. Rather, it evolves within context, changing both individual and group interaction. For instance, although faculty and students at different schools may be assigned to classrooms and follow the same academic calendars, what happens within a school and any given classroom varies greatly. This variance results from the dynamic culture of everyday life that develops through resident tools and the individuals who use them within a specific context (Kozleski & Artiles, 2014).

Researchers engage in cultural practices by using tools that ostensibly function in standard ways but, when enacted, may have very different meanings and impacts. The use of graphs by researchers provides an example. For example, the graph of research data is both a signal that a certain kind of activity is occurring and a prompt to engage in that kind of activity. It symbolizes both activity *and* product. In this case, graphs signal novice researchers that graphing and graphs are what researchers do and produce. But how specific individuals use graphs with what frequency and for what purpose changes how the tool is understood and appropriated. A team of researchers might use graphs as a way of showing how a particular research design might progress. The graph provides a clearer picture to the researchers than a description of the data. The use of graphs can also demonstrate the amount of data gathered from different methods to answer the same question. This kind of graph encourages researchers to consider the value of certain forms of data collection and their value to the analysis and interpretation of data. Graphs used to illustrate progress over time in an instructional environment help educators to think of progress over time rather than focus on the events of a single day. The tool shapes the audience's point of view. From a cultural view, it suggests a particular way of considering everyday activities.

It is this shifting, nuanced understanding of human activity that lends itself particularly well to observation, interview, videotaping, artifact analysis, and subsequent detailed analytic approaches to examining the relation between multiple sources of data. Through careful observation, informed questioning, and detailed data gathering, qualitative research offers evidence of learning, defined as participation in cultural practice.

We need the methodological power that comes from studying how culture mediates what we do while we also compare various approaches, methods, and activities. We require methodological rigor to study cultural practice to warrant our findings qualitatively with the same confidence that we produce experimental and quasi-experimental findings that point the way forward to solving and resolving the complex practice issues that special educators face daily in teaching individuals with diverse cultural, physical, emotional, psychological, and sensory abilities.

Qualitative Methods Illuminate Context

Qualitative methods can help us understand the nature of classrooms as socially and culturally organized environments for learning (Erickson & Gutiérrez, 2002; Morningstar et al., 2015; Shogren, Gross, et al., 2015). In doing so, we may better understand how classrooms seem to work for some students, but not for

others (Erickson, 2011). We also may be able to understand how the role of the teacher and the design of curriculum shape some students' access to knowledge and discovery while constraining others. We need qualitative methods because they may be the best choice for helping to make visible the everyday activities of life in classrooms that often go unexamined but may offer explanations for how some students lose interest in engaging in formal schooling. Furthermore, local meanings permeate what teachers know and bring with them to school, as 85% of all teachers begin their teaching career within 40 miles of where they graduate from high school (Kozleski, Artiles, McCray, & Lacy, 2014). Importantly, qualitative methods situate research participants in the role of "story-teller," providing participants the opportunity to highlight issues that are important but may not have occurred to researchers who are not typically entrenched in the social spaces of teachers, students, and families. Qualitative methods allow for new discoveries in the moment, unlike more restrictive quantitative data sources such as surveys that are structured for participants to respond *to* rather than *with* the research team.

Kozleski, Gibson, and Hynds (2012) reported on two contiguous districts in the same state; both reduced their racial disproportionality in special education. Qualitative methods revealed the differences in approaches that led to similar reductions in disproportionality. One district produced sustained, purposeful activity in teachers, school administrators, and central administrative staff that predicted continued successful reduction in disproportionality. Three layers of activity produced this sustained and distributed result. First, the superintendent met with leaders of local religious, mental health, police, and recreation institutions along with representatives of the Chamber of Commerce. Community leaders studied data from the school district showing inequitable results for students distributed by racial identities. Together with the superintendent, they began to look at how their local practices reified distinctions being made in school across racial groups. In one instance, the Parks and Recreation district looked at who was participating in what kinds of activities and began to recruit adolescents to try a menu of activities after school. In another, the police department began stationing on duty police at various community activities specifically to build relationships with middle and high school students through friendly dialogue and shared interest. The focus was on humanizing the police and personalizing relationships. Second, within the district, the superintendent led monthly meetings with her or his principals. Each meeting focused on a structural aspect of implementing culturally responsive practices in schools. The process was to examine a specific practice each month. The superintendent would facilitate discussions of articles about specific practices and then lead the administrators through a visit to a specific school looking for that practice. The administrators would then discuss what they saw and interpreted during the walk-through with the superintendent to discuss what they saw and what could be improved. One month, the focus might be on teaching modeling in the classroom. Another month, it might be on feedback, conflict management, or leading discussions. In each case, the superintendent led the conversation, the school walk-through, and the debrief. Third, as a result of the intense focus on instruction, the principals began to visit classrooms more often. They spent more time with individual and small groups of teachers focusing on specific practice strategies. Principals modeled new practices in classrooms. They became more familiar with their students. Students acknowledged how their teachers continued to work on improving their practice. Teachers noticed the investments of time and effort by administrators who were focused on the quality of interaction and instruction. These data came from multiple sources. Teachers, administrators, students, and members of the community who participated in ongoing meetings with the superintendent reported on these same activities from different vantage points.

As well, the research team conducted systematic observation of classrooms, including capturing the discourse of teachers and students. In this district, the observations provided evidence of confident, skilled teaching. Teachers who were observed were also interviewed subsequent to classroom observations to probe their intent and observations of what worked in their classrooms, and connect the teachers' observations to professional learning activities. Information gathered from professional learning agendas, professional development leaders, and school leaders corroborated the information gained from teacher interviews.

The other district revealed instrumental, temporary responses to avoid state sanctions that offered little in terms of changing teacher or school leader behavior. This analysis came from the same, systematic approach to observation, interview, and artifact collection. Without this close, careful observation and data

collection in both contexts, there would have been little data to inform *how* the districts produced the results they reported. We need qualitative methods because they can be used to look deeply at local practice across settings, offering a comparative look at how similar outcomes, in this case, reductions in disproportionality, are produced in very different ways.

Engaging in Inclusive Education

In addition to its power in revealing local context, qualitative research offers an important contribution to a justice agenda that can no longer be ignored. Inclusive education is a response to systemic exclusion of students who are viewed as different (e.g., students with disabilities, refugee, immigrant, ethnically and linguistically diverse students, and students from low socioeconomic backgrounds) from meaningful access and participation in education. As our world becomes increasingly polycultural, blurring boundaries of citizenship, place, ability, language, experience, values, and developmental norms, inclusivity is vital to the planet's survival and continued capacities in a number of dimensions including environmental, social, and economic well-being. Education is and will continue to be a fundamental stepping stone for a just and equitable future. We need to embrace multiple ways of knowing to build the educational enterprise that will be necessary for lifelong learning. Just as improvement science offers an approach to learning, sharing, and building while doing, we need a big umbrella for the methods that will undergird such an effort. Qualitative research methods will move us closer to an expansive view of inclusive education that includes the following:

1. the *redistribution* of quality opportunities to learn and participate in educational programs;

2. the *recognition and value of differences* as reflected in content, pedagogy, and assessment tools; and

3. the *opportunities for marginalized groups to represent themselves* in decision-making processes that advance and define claims of exclusion and the respective solutions that affect their children's educational futures. (Waitoller & Kozleski, 2013, p. 36)

It is through careful observation about how the everyday work and accomplishments of students are facilitated by differing levels of opportunities to learn and how those affordances are created and reified that we can best understand the problems that inclusive education poses and build strategies that account for the myriad of differences that exist in schools. Through this careful understanding, educators will begin to fashion responses that meet the challenges and possibilities of inclusive education.

Questions to Be Answered Through Qualitative Methods

Another powerful argument for including qualitative methods within the tool kit for EBP is that qualitative methods are well suited for the specific kinds of questions that Bryk and his associates (2015) named. Anthropologists and sociologists have developed many of the qualitative methods that we now use in education settings (Beail & Williams, 2014). Qualitative work blurs disciplinary and inquiry boundaries and field- or site-specific usage of terms and constructs for scholarly work. It offers the opportunity to draw on theoretical and practical knowledge from a number of social sciences that rarely speak to each other in the research literature. Hallmarks of qualitative research include intensive, long-term participation in a field setting (Brantlinger et al., 2005). Researchers carefully record what happens in the setting by writing field notes and collecting other kinds of documentary evidence (e.g., memos, records, examples of student work, and digitally recorded interviews). They reflect analytically on their data as they collect it, developing working hypotheses that can be tested through interviews and observations during the study to rule out some lines of inquiry while advancing others. This is precisely what improvement science calls for.

Subsequent analytic reflection on the documentary evidence obtained in classrooms and other practice locations may advance and hone what works, helping legions of researchers to shape their work in progress (Erickson, 2011) while guiding practitioners to adapt practices to their local contexts. Reporting means

drawing on detailed description, using narrative vignettes and direct quotes from interviews, as well as by more general description in the form of analytic charts, summary tables, and descriptive statistics. Because of the thorough and reflective field notes, along with audio and video records, researchers can draw on a rich set of data to describe everyday events in education settings. The interpretation of the significance of these events can be revisited by other researchers as well as the participants themselves to warrant any claims that are made. In this way, important questions can be asked such as "what is happening, specifically, in social action that takes place in this particular setting?" Furthermore, researchers can explore what the actions mean to the participants at the moment the actions took place and test those analyses through member checks with the participants. Video ethnographic tools are particularly powerful because what people do and what they think that they have done can be very different. Researchers can examine their evidence to chronicle how activity is organized in patterns of social organization and cultural principles that privilege specific kinds of learning and knowledge building. Furthermore, qualitative methods help researchers to examine how what is happening in a classroom relates to happenings at other system levels outside and inside the setting. Finally, because of the ability to collect similar sets of data across settings, researchers can explore how everyday life in one setting compares with other ways of organizing social life in a wide range of settings in other places, at other times, and with a variety of populations.

Design of High-Quality Qualitative Research

Although this article is not intended to be a tour of qualitative methods, I highlight some of the methods and practices that qualitative researchers use to ensure the rigor of the claims that they make about data. Qualitative research methods encompass multiple approaches to design, research, and analyze the resulting data. High-quality qualitative research begins with a question or set of questions that help guide the researcher (Ritchie & Lewis, 2003). These questions should be unambiguous, focused, relevant, informed by research and theoretical propositions, and feasible. Although the questions need to be located in a specific context, sampling considerations should be focused on what kinds of data will be collected, in what time frame, and across how many micro-contexts and individuals. Questions that guide sampling include discussion of the whole population within a context and ensuring that the perspectives and experience of various groups within the whole are represented in the decisions to collect specific kinds of data. For instance, in one recent study of a teacher preparation reform, I worked across 2 years to collect data with a team of researchers to ensure that the data that we collected would help to provide sufficient evidence of how our transformation affected students with disabilities, their teachers, school administrators, and the teacher residents who were earning their teaching credentials (Waitoller & Kozleski, 2015). As a result, we observed classrooms participated in teacher meetings and other professional activities, conducted professional learning workshops, coached teacher residents, and provided feedback on their progress. Interviews, focus groups, and teachers recall interviews were anchored by their teaching videos, and classroom observations were documented using audio and video recordings that were subsequently transcribed (e.g., audio recordings). The videos were uploaded to NVivo (a software tool for storing, coding, and analyzing qualitative data) and coded directly. Field notes and audiotapes of coaching sessions were all added to our data library and, over time, coded, re-coded, categorized, and themed. Along the way, sets of data assumed significance in the study and we reported on several sets of analysis that were not predicted when we first developed our study. This process of data collection, review, analysis, and additional data collection is the hallmark of the relationship between questions, data collection, and emerging evidence. This relationship is fluid and neither hierarchical nor unidirectional (Ritchie & Lewis, 2003). As a result, early design decisions may be revisited as themes and important topics emerge from the data.

From the teacher education data set, we published several studies. The first looked at how teachers prepared intensively in practice settings, bolstered by video recall interviews of teaching episodes, and anchored in semesters designed by themes that focused on developmental growth, produced teachers with particular critical consciousness about the design and delivery of curriculum for students with intersectional identities such as race and (dis)ability (Waitoller & Kozleski, 2013). Another article focused expressly on a particular interview that was representative of a number of similar interviews that were conducted over the course of

2 years. In this interview, practicing teachers discussed how they understand and made meaning of student assessment data in reading (Waitoller & Kozleski, 2015). What we learned is the way that the graphic display of data reduced teachers' focus on the individual needs of students and replaced it with a focus on undifferentiated groups of students who were either failing or performing.

Qualitative researchers maintain hypervigilance in storing their data and notating pivots that are made in what is sampled and for what reason. It is this record keeping that enables qualitative researchers to be transparent in decisions that are made in the field to pursue specific lines of inquiry. And, it is also this kind of fluidity that requires specific, explicit mapping in descriptions of methodological procedures that are often lacking in articles submitted for publication. This kind of documentation entails careful recording of what happens in the setting by writing field notes and collecting other kinds of documentary evidence (e.g., memos, records, examples of student work, audiotapes, and videotapes), and subsequent analytic reflection on the documentary record obtained in the field. Further substantiation of the subsequent analysis is explicated through detailed description, using narrative vignettes and direct quotes from interviews, substantiated by the set of emergent codes, as well as by more general description in the form of analytic charts, summary tables, and descriptive statistics.

Warranting Claims: Triangulate Methods, Data Sources, and Theories

Leech and Onwuegbusie (2011) listed seven approaches to qualitative data analysis including constant comparative, content analysis, key-word-in-context, word count, domain analysis, taxonomic analysis, and componential analysis. Discourse analysis (Gee & Green, 1998) offers another analytic tool that helps researcher link activity in the classroom to the activities of other arenas that influence classroom life such as textbook publishers, curriculum developers, policy makers, and politicians in and out of office. Although some of the methods that Leech and Onwuegbusie outline lead us to making decisions about what was said and meant, discourse analysis pushes qualitative researchers to not only synthesize what was said but also to understand how the pattern and function of talk in classrooms (and elsewhere) shape particular kinds of activity and limit others. Gee and Green (1998) noted that through contrasting the outcomes of talk and participation for different participants at different times in a lesson, researchers can begin to understand what students are expected to know as a result of activity in the classroom (not as stipulated in the scripted curriculum), what views of a discipline are visible (e.g., what does reading mean in this context?), which students have access to the prevailing view of the discipline (e.g., are able to identify plot, use of language, shifts in point of view), and whose views count in each of these phases of activity. Using this kind of lens, researchers can begin to look at how participation in particular forms of instruction engage and involve some groups of students and not others. This forms the beginning of hypotheses about how classroom discourse might be shaped to change rates of participation and opportunities to learn.

Researchers must bring a wealth of information about learning, and learning within disciplines, as well as specific knowledge about how learning develops and changes over time, to participate effectively in understanding the nuanced shifts in learning and discourse that happen in the classroom. As well, it takes more than one capable researcher to triangulate the analysis and validate findings in a way that other researchers can look at the same data and converge on similar analyses. What is illuminated in these kinds of analyses forms the basis of hypotheses that can be tested in the same or similar contexts. Over time, through a network of researchers, skilled in the same tool kit, convergence of findings becomes coherence. Spatial analysis of socially constructed phenomenon such as disproportionality in referral, identification, and placement in special education requires expertise in the use of geographical information systems (GIS), the overlay of individual student records on GIS coordinates, and the development of resulting maps that demonstrate the geographical distribution of disproportionality at the school, district, and state levels. As the data are not universally available, a number of researchers with similar research questions can bring their data together to examine a problem more effectively than single sets of researchers focused in one geographic area. Qualitative analysis of these artifacts can give rise to another set of questions about how and why various patterns emerge. This second wave of questions requires extensive qualitative work to look at local contexts but from similar frames so the methods and the frames have the potential to create convergence.

Not all questions lend themselves to this methodology; matching methods to questions is critical, but qualitative research can conform to the heart of EBP because it begins with an authentic and rigorous analysis of what occurs in classrooms between and among students and their teachers. Qualitative researchers acknowledge the subjectivity of their analysis. Rather than seek objectivity as a condition of experimentation, qualitative researchers acknowledge its presence in their work and seek, through member checks, ongoing verification of their data analysis to ensure that what emerges from the data through the lens of the analysts converges with the lived experiences of the research participants. The choices that qualitative researchers make among and between methods such as discourse and conversational analysis, grounded theory, and constant comparative approaches are linked to the kinds of questions that emerge both as the study begins and as the data begin to take shape. In acknowledging and describing subjectivity, consumers of qualitative research, in essence, are charged with evaluating the validity and reliability of the claims that mirror what consumers of quantitative research must do to vigorously evaluate their claims. Many would argue that "objective" approaches to research still rely on human researchers who are never free from subjectivity. Recognition of the subjectivity and blind spots that are embedded in the questions that researchers ask and the methods that they use help the research community to focus on the unit of analysis, the importance of the questions, as well as the rigor of the data collection and subsequent analyses and interpretations.

Validity

Qualitative researchers attend to three kinds of validity that resonate specifically with the methods reviewed in this article. Audit trails help to assure that researchers engaged in specific studies, as well as the audiences for their studies, are aware of reflexive subjectivity through careful documentation of how the researcher's assumptions have been affected by the data. Face validity is achieved through recycling categories, emerging analysis, and conclusions through at least a subsample of respondents. Finally, catalytic validity documents how the research process has led to insight, and ideally, action. The processes described in qualitative studies should attend to this kind of validity. Powerful analytic software can help researchers to share their emerging analyses, and offers approaches to cross-checking and triangulation of different sets of data such as the use of school policy documents that mediate discipline procedures with observed discipline events. By entering each piece of data and applying a consistent naming convention, researchers are able to develop, manage, and audit their analyses so that other researchers can cull the same data set as well as follow similar procedures in alternative settings. Finally, divergent analyses of the same sets of data can develop. Thus, qualitative research teams engaged in rigorous analysis meet regularly to share the results of their independent analysis, develop coding dictionaries, validate the use of these dictionaries, and challenge each other, using data, to re-examine and reach convergence on the direction of the data analysis. As these studies move from analysis to publication, it is critical that peer reviewers attend to the features of rigorous qualitative research to ensure that what is published provides the detailed methodology that allows peers and practitioners to have confidence in the findings. Furthermore, studies that ask similar questions in different contexts need road maps for conducting new studies that will solidify our understanding of context and its impact on intervention work.

Summary

For a variety of reasons that include the ability to study significant problems of practice, engage with practitioners in the conduct of research studies, learn and change processes during a study, and provide expansive data sets that help clarify both independent and dependent variables, qualitative research contributes to EBP. Indeed, qualitative methodologies can shape and advance important questions of educational practice and policy. The reason for this article, a discussion of the degree to which qualitative research can contribute to EBP, has been asserted in a number of publications including the National Research Council report on *Scientific Research in Education* (Shavelson & Towne, 2002). Eisenhart and DeHaan (2005) reminded us that the actual practice of scientific research is more descriptively oriented,

dependent on context, less cumulative, and more qualitative than is implied by experimentation that is idealized as leading to causal explanations. Distinguished researchers in our special education community have made similar arguments (Brantlinger et al., 2005; Trainor & Graue, 2014). The concern with the degree to which qualitative research can contribute to the research base may be a reflection of the degree to which our field as a whole adequately prepares its researchers to understand and engage in high-quality qualitative research that adheres to benchmarks for internal and external validity from inception through dissemination of results.

Through an extensive literature base, reaching back at least 40 years, qualitative researchers have amassed a set of procedures that allow the qualitative research community to assess the contributions of qualitative studies to the landscape of scientific thought and practice. These methods operationalize a research response to the notion that variety and changeability are embedded in contexts of social life. Qualitative research allows researchers to expand the array of variables that may contribute to the production of specific outcomes across multiple settings. By defining social and cultural features of local context as activity through participation, researchers can begin to examine how local practice communities such as classrooms develop over time. Furthermore, as participants in one practice community migrate to another, they bring with them the cultural practices of the previous community. Their presence in the new community, along with all the other new participants, changes that community in specific ways that are not simply generalized, but are transported and further evolved. We might think of this as analogous to epigenetic variation, only in social context. The unit is social exchange as opposed to genetic expression. Qualitative research allows us to work at this level of observation.

Bryk et al. (2015) reminded us that learning to improve is based on the notion that change is accomplished locally through rapid testing and redesign with each step. Qualitative research has some, but not all, of the keys to contributing to this kind of learning. It relies on facilitating the growth of knowledge of practitioners and researchers, and is, therefore, essential to learning to improve and contributes to the evolution and development of EBP.

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References

Ainbinder, J. G., Blanchard, L. W., Singer, G. H., Sullivan, M. E., Powers, L. K., Marquis, J. G., & Santelli, B. (1998). A qualitative study of parent to parent support for parents of children with special needs. *Journal of Pediatric Psychology*, *23*, 99-109. doi:10.1093/jpepsy/23.2.99

Bal, A., & Trainor, A. A. (2016). Culturally responsive experimental intervention studies: The development of a rubric for paradigm expansion. *Review of Educational Research*, *86*, 319-359. doi:10.3102/0034654315585004

Beail, N., & Williams, K. (2014). Using qualitative methods in research with people who have intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, *27*, 85-96. doi:10.1111/jar.12088

Bock, A. K., & Erickson, K. A. (2015). The influence of teacher epistemology and practice on student engagement in literacy learning. *Research and Practice for Persons With Severe Disabilities*, *40*, 138-154. doi:10.1177/1540796915591987

Brantlinger, E., Jimenez, R., Klingner, J., Pugach, M., & Richardson, V. (2005). Qualitative studies in special education. *Exceptional Children*, *71*, 195-207. doi:10.1177/001440290507100205

Bryk, A. S., Gomez, L. M., Grunow, A., & LeMahieu, P. G. (2015). *Learning to improve: How America's schools can get better at getting better*. Cambridge, MA: Harvard Education Press.

Buysse, V., Winton, P., Rous, B., Epstein, D. J., & Lim, C. (2012). *Evidence-based practice: Foundation for the CONNECT5-Step learning cycle in professional development*. Washington, DC: ZERO to THREE.

Carter, E. W., Boehm, T. L., Biggs, E. E., Annandale, N. H., Taylor, C. E., Loock, A. K., & Liu, R. Y. (2015). Known for my strengths: Positive traits of transition-age youth with intellectual disability and/or autism. *Research and Practice for Persons With Severe Disabilities*, *40*, 101-119. doi:10.1177/1540796915592158

Cole, M. (1996). *Cultural psychology: A once and future discipline*. Cambridge, MA: Harvard University Press.

Cook, B. G., Buysse, V., Klingner, J. K., Landrum, T. J., McWilliam, R. A., Tankersley, M., & Test, D. W. (2015). CEC's standards for classifying the evidence base of practices in special education. *Remedial and Special Education*, *36*, 220-234. doi:10.1177/0741932514557271

Dymond, S. K., Renzaglia, A., Gilson, C. L., & Slagor, M. T. (2007). Defining access to the general curriculum for high school students with significant cognitive disabilities. *Research and Practice for Persons With Severe Disabilities*, *32*, 1-15. doi:10.2511/rpsd.32.1.1

Education Sciences Reform Act, P. L. 107-279 (2002).

Eisenhart, M., & DeHaan, R. L. (2005). Doctoral preparation of scientifically based education researchers. *Educational Researcher*, *34*(4), 3-13. doi:10.3102/0013189X034004003

Erickson, F. (2011). Qualitative methods in research on teaching. In Y. Lincoln & N. K. Denzin (Eds.), *The SAGE handbook of qualitative research* (pp. 43-59). Thousand Oaks, CA: SAGE.

Erickson, F., & Gutiérrez, K. (2002). Culture, rigor, and science in educational research. *Educational Researcher*, *31*(8), 21-24. doi:10.3102/0013189X031008021

Evans, R. L. (2001). *The human side of school change: Reform, resistance, and the real-life problems of innovation*. San Francisco, CA: Jossey-Bass.

Freeman, J., Simonsen, B., McCoach, D. B., Sugai, G., Lombardi, A., & Horner, R. (2015). An analysis of the relationship between implementation of school-wide positive behavior interventions and supports and high school dropout rates. *The High School Journal*, *98*, 290-315. doi:10.1353/hsj.2015.0009

Gee, J. P., & Green, J. L. (1998). Discourse analysis, learning, and social practice: A methodological study. *Review of Research in Education*, *23*, 119-169. doi:10.3102/0091732X023001119

Graungaard, A. H., & Skov, L. (2007). Why do we need a diagnosis? A qualitative study of parents' experiences, coping and needs, when the newborn child is severely disabled. *Child: Care, Health and Development*, *33*, 296-307. doi:10.1111/j.1365-2214.2006.00666.x

Gutiérrez, K. D., & Rogoff, B. (2003). Cultural ways of learning: Individual traits or repertoires of practice. *Educational Researcher*, *32*(5), 19-25. doi:10.3102/0013189X032005019

Harrison, J., MacGibbon, L., & Morton, M. (2001). Regimes of trustworthiness in qualitative research: The rigors of reciprocity. *Qualitative Inquiry*, *7*, 323-345. doi:10.1177/107780040100700305

Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Exceptional Children*, *71*, 165-179.

Hudson, R. F., Davis, C. A., Blum, G., Greenway, R., Hackett, J., Kidwell, J., . . . Peck, C. A. (2016). A socio-cultural analysis of practitioner perspectives on implementation of evidence-based practice in special education. *The Journal of Special Education*, *50*, 27-36. doi:10.1177/0022466915613592

Jayawickreme, E., Jayawickreme, N., & Goonasekera, M. A. (2012). Using focus group methodology to adapt measurement scales and explore questions of wellbeing and mental health: The case of Sri Lanka. *Intervention*, *10*, 156-167. doi:10.1097/WTF.0b013e328356f3c4

Kena, G., Hussar, W., McFarland, J., de Brey, C., Musu-Gillette, L., Wang, X., . . . Velez, E. (2016). *The condition of education*. Washington, DC: The National Center for Education Statistics.

Kozleski, E. B., & Artiles, A. J. (2014). Beyond psychological views of student learning in systemic reform agendas. In E. B. Kozleski & K. K. Thorius (Eds.), *Ability, equity, and culture: Sustaining inclusive urban education reform* (pp. 63-79). New York, NY: Teachers College Press.

Kozleski, E. B., Artiles, A. J., McCray, E., & Lacy, L. (2014). Equity challenges in the accountability age: Demographic representation and distribution in the teacher workforce. In P. Sindelar, E. McCray, M. Brownell, & B. Lignugaris/Kraft (Eds.), *Handbook of research on special education teacher preparation* (pp. 113-126). New York, NY: Routledge.

Kozleski, E. B., Gibson, D., & Hynds, A. (2012). Transforming complex educational systems: Grounding systems issues in equity and social justice. In C. Gersti-Pepin & J. Aiken (Eds.), *Defining social justice leadership in a global context* (pp. 263-286). Charlotte, NC: Information Age Publishing.

Kozleski, E. B., & Thorius, K. K. (2014). Introduction. In E. B. Kozleski & K. K. Thorius (Eds.), *Ability, equity, and culture: Sustaining inclusive urban education reform* (pp. 3-10). New York, NY: Teachers College Press.

Kurth, J. A., Lyon, K. J., & Shogren, K. A. (2015). Supporting students with severe disabilities in inclusive schools: A descriptive account from schools implementing inclusive practices. *Research and Practice for Persons With Severe Disabilities*, *40*, 261-274. doi:10.1177/1540796915594160

Lareau, A. (2015). Cultural knowledge and social inequality. *American Sociological Review*, *80*, 1-27. doi:10.1177/0003122414565814

Leech, N. L., & Onwuegbuzie, A. J. (2011). Beyond constant comparison qualitative data analysis: Using NVivo. *School Psychology Quarterly*, *26*, 70. doi:10.1037/a0022711

Leko, M. M., Roberts, C. A., & Pek, Y. (2015). A theory of secondary teachers' adaptations when implementing a reading intervention program. *The Journal of Special Education*, *49*, 168-178. doi:10.1177/0022466914546751

Morningstar, M. E., Shogren, K. A., Lee, H., & Born, K. (2015). Preliminary lessons about supporting participation and learning in inclusive classrooms. *Research and Practice for Persons With Severe Disabilities*, *40*, 192-210. doi:10.1177/1540796915594158

Musu-Gillette, M. (2016). *What are the characteristics of students who have ever been suspended or expelled from school?* Washington, DC: National Center for Education Statistics. Retrieved from http://nces.ed.gov/blogs/nces/2016/05/10/default

Oakes, W. P., Lane, K. L., & Ennis, R. P. (2016). Systematic screening at the elementary level: Considerations for exploring and installing universal behavior screening. *Journal of Applied School Psychology*, *32*, 214-233. doi:10.1080/15377903.2016.1165325

Odom, S. L. (2009). The tie that binds: Evidence-based practice, implementation science, and outcomes for children. *Topics in Early Childhood Special Education*, *29*, 53-61. doi:10.1177/0271121408329171

Odom, S. L., Duda, M. A., Kucharczyk, S., Cox, A. W., & Stabel, A. (2014). Applying an implementation science framework for adoption of a comprehensive program for high school students with autism spectrum disorder. *Remedial and Special Education*, *35*, 123-132. doi:10.1177/0741932513519826

Ritchie, J., & Lewis, J. (2003). *Qualitative research practice: A guide for social science students and researchers*. Thousand Oaks, CA: SAGE.

Sackett, D. L., Straus, S. E., Richardson, W. S., Rosenberg, W., & Haynes, R. B. (2000). *How to practice and teach EBM*. Edinburgh: Churchill Livingstone.

Schafer, P. (1998). *Culture: Beacon of the future*. Westport, CT: Praeger.

Shavelson, R. J., & Towne, L. (2002). *Scientific research in education*. Committee on Scientific Principles for Education Research. Washington, DC: National Academies Press. doi:10.17226/10236

Shogren, K. A., Gross, J. M. S., Forber-Pratt, A. J., Francis, G. L., Satter, A. L., Blue-Banning, M., & Hill, C. (2015). The perspectives of students with and without disabilities on inclusive schools. *Research and Practice for Persons With Severe Disabilities*, *40*, 243-260. doi:10.1177/1540796915583493

Shogren, K. A., McCart, A. B., Lyon, K. J., & Sailor, W. S. (2015). All means all: Building knowledge for inclusive schoolwide transformation. *Research and Practice for Persons With Severe Disabilities*, *40*, 173-191. doi:10.1177/1540796915586191

Singer, G. H., Horner, R. H., Dunlap, G., & Wang, M. (2014). Standards of proof: TASH, facilitated communication, and the science-based practices movement. *Research and Practice for Persons with Severe Disabilities*, *39*, 178-188. doi:10.1177/1540796914558831

Slocum, T. A., Detrich, R., Wilczynski, S. M., Spencer, T. D., Lewis, T., & Wolfe, K. (2014). The evidence-based practice of applied behavior analysis. *The Behavior Analyst*, *37*, 41-56. doi:10.1007/s40614-014-0005-2

Stokes, D. E. (1997). *Pasteur's quadrant: Basic science and technological innovation*. Washington, DC: Brookings Institution Press.

Thorius, K. A. K., Maxcy, B. D., Macey, E., & Cox, A. (2014). A critical practice analysis of response to intervention appropriation in an urban school. *Remedial and Special Education*, *35*, 287-299. doi:10.1177/0741932514522100

Trainor, A. A., & Graue, E. (2014). Evaluating rigor in qualitative methodology and research dissemination. *Remedial and Special Education*, *35*, 267-274. doi:10.1177/0741932514528100

Waitoller, F. R., & Kozleski, E. B. (2013). Working in boundary practices: Identity development and learning in partnerships for inclusive education. *Teaching and Teacher Education*, *31*(3), 35-45. doi:10.1016/j.tate.2012.11.006

Waitoller, F. R., & Kozleski, E. B. (2015). No stone left unturned: Exploring the convergence of new capitalism in inclusive education in the U.S. *Education Policy Analysis Archives*, *23*, 1-29. doi:10.14507/epaa.v23.1779

West, E. A., Travers, J. C., Kemper, T. D., Liberty, L. M., Cote, D. L., McCollow, M. M., & Brusnahan, L. L. S. (2016). Racial and ethnic diversity of participants in research supporting evidence-based practices for learners with autism spectrum disorder. *The Journal of Special Education*, *50*, 151-163. doi:10.1177/0022466916632495

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