Journal of Agricultural Education, 66(1), Article 41
https://doi.org/10.5032/jae.v66i1.2762

A Call to Better Qual: A Philosophical and Methodological Examination to Advance Case Study Research

Rebecca Mott[1]
Becky Haddad[2]

Abstract

Over the past 15 years, qualitative case study research has become more prominent in agricultural education. The first case study research appeared in the Journal of Agricultural Education (JAE) in 1997. To date, 33 qualitative case study research articles have been published in JAE. Additionally, case study research has become highly visible at regional and national conferences. However, planning, conducting, and reporting case study research is challenging due to the various approaches that exist. Furthermore, various philosophical assumptions underlie each unique approach. We use this article to provide building blocks of case study research designed to help novice researchers and reviewers make methodological decisions. Additionally, we provide recommendations for writers, reviewers, and teachers of qualitative research who desire to strengthen their understanding of case study research.

Introduction

This article extends our call to rigorous qualitative research with an exploration of case studies, recognizing a felt need from those conducting, teaching, and reviewing case study research, and knowing case study is well situated as a pragmatic approach to challenging issues. Exploring, unpacking, and communicating the various approaches to case study research has been more difficult than we anticipated. This challenge is further complicated by the conflation of the terms *case study* and *case study research*. While *case studies* are commonly used as teaching tools, *case study research* follows different structures and styles that warrant exploring and embracing.

We use this article to provide building blocks that will be useful for designing case study research. As such, you will engage with it differently--and we wrote it differently--than a typical report of a completed study. This paper has a place as a methodological and philosophical document; discussion of research methods with a goal of continuous improvement helps us conduct research that is impactful to our discipline. As a methodological piece, readers will find an exploration of case study methodology in the *Journal of Agricultural Education* (JAE). As a philosophical guide, we explored the philosophical nuances of case study approach, beyond methodological implementation. We included terminology expected in JAE, but not typically aligning with a philosophical and methodological exploration (e.g., findings, recommendations). We wrote the philosophical exploration in present tense; acknowledging 1) case study work is ongoing in our field and others, and 2) the key case study scholars (Yin, Merriam, and Stake) are all actively publishing. Finally, readers will not find citations from qualitative methodologists providing broad overviews (e.g., Creswell) or highlighting specific ideas like rigor (e.g., Lincoln & Guba), as our manuscript is singularly focused on case study philosophy, design, and methodological implementation.

[1] Rebecca Mott is an Assistant Professor of Agricultural Education in the Department of Agricultural Education, Leadership and Communication at the University of Missouri, 123 Gentry Hall, Columbia Missouri, 65211, mottr@missouri.edu. ORCID#0000-0002-9135-6955
[2] Becky Haddad is an Assistant Professor of Agricultural Education in the Department of Agricultural Education, Leadership and Communication at the University of Nebraska-Lincoln, 143 Filley Hall, Lincoln, NE, 68583, haddad@unl.edu.ORCID#0000-0001-9153-2253

This work is not complete; it is an ongoing process of development, learning, and improvement. In addition, and aligning with a case study approach, the article itself uses key case study tenets. For example, in outlining the philosophical approaches of key case study theorists, a table highlights key differences. Case study sometimes includes a quantitative component (Yin, 2018), and this integration acknowledges this means of case study reporting. In addition, the findings present unifying the philosophical exploration with the methodological implications of the content analysis. This approach integrates exemplars of case study theme development (Merriam) and vignettes (Stake).

We also acknowledge, with numerous approaches to case study research, undergirded by different philosophical underpinnings and processes for data collection and analysis, this methodology gets muddy very quickly. Without sound methods, clear communication about those methods, and well-designed research questions, case study research does not offer the rigor or trustworthiness needed to make an impact on our profession. This article is intended as a practical resource promoting collaboration and conversation aimed at methodological improvement in agricultural education and beyond. Additionally, we hope it may serve as a useful tool for those teaching qualitative research courses or advising doctoral students.

This philosophical paper explores case study research published in agricultural education with a goal of advancing methodological rigor to yield higher-quality research. By providing an educational resource for writers, reviewers, and even teachers of qualitative research, our purpose is to clarify the similarities and differences among the various approaches to case study research. It is significant as it provides recommendations to de-mystify the writing and reviewing of case study research. Our positionality is framed both through our assistant professor roles at land grant universities, and our teaching and research using a variety of qualitative approaches to meet our research purposes. Readers will see evidence of pragmatic and interpretive lenses in this philosophical paper. We believe the most useful resources are easy to digest without extensive effort. We hope this paper will become a practical and familiar tool for researchers, reviewers, teachers, and students of case study research.

The greatest limitation of this paper is our inability to discuss case study research in greater detail due to its introductory nature. While our goal is to provide a concise primer for building additional rigor into qualitative case studies in our discipline, it means there is nuance that could not (and should not) be unpacked here. Even though the journal provides space for the expansion of this article, we intentionally choose to limit further detail and complexity, knowing clarity and conciseness best support the usefulness of this type of article. Additionally, our content analysis only included articles from the Journal of Agricultural Education (JAE). We have not explored the case study research our peers have published in other academic journals. We also regret not including an analysis of or discussion about data analysis techniques appropriate for case study research, and look forward to future articles highlighting these topics, specifically and in depth.

Situating Case Study Research

Although case studies have probably existed since the beginning of recorded history (Flyberg, 2011), Frederic Le Play is credited for introducing the method during the 1800s in France in the field of finance. The origin of case study research in the United States can be traced to the Chicago School of Sociology (Tellis, 1997). The Chicago School's approach merged quantitative and qualitative methods and focused on researching people and culture. In addition to being used in the social science fields of sociology, medicine, and psychology (Kittenham et al., 1995), case study research is employed in management, anthropology, and others (Priya, 2021).

Researchers may find this approach helpful for describing, exploring, explaining, evaluating, and understanding processes or dynamics of an event, program, activity, or individual(s) (Creswell & Poth, 2018). Case study research is particularly useful when exploring an event or phenomenon in its real-life context (Yin, 2018). More specifically, this effort at exploration separates case study from other qualitative

study designs. While a "phenomenon" may be explored, that does not make it a phenomenology. While a bound may be present, the study is not inherently a case. A helpful distinction lies in case study's use of "naturalistic design," meaning the researcher does not attempt to control or manipulate variables (Crowe et al., 2011). This "naturalistic design" helps separate case study from other qualitative methodologies; it implies an unobtrusiveness only available by collecting and analyzing myriad sources of data beyond interviews (i.e., manipulation).

Although case study research is typically categorized as qualitative (Creswell, 2014; Denzin & Lincoln, 2011; Merriam, 2009; Miles et al., 2014; Stake, 2006), it may also include quantitative data and is sometimes even used in quantitative and mixed methods research designs (Mills et al., 2010). Case study research typically incorporates a variety of data collection methods and sources, defines a case or cases within a bounded system (parameters), and is used to gain an in-depth understanding about that case or cases.

Differentiating Among Approaches

The use of case study design for qualitative research emerged along with the rise of grounded theory methodology (Glaser & Strauss, 1967; Lincoln & Guba, 1985). Since then, Robert Yin, Sharan Merriam, and Robert Stake are three prominent case study methodologists whose techniques are utilized and referenced frequently in agricultural education research. Additionally, Creswell et al., (2007) suggest that Yin, Merriam, and Stake are three researchers who provide procedures to follow when crafting case study research. To build a clear structure, we start the work of this paper highlighting three prominent players, but always encourage readers to continue exploring methodologists as they advance particular philosophies of case study research.

Robert Yin (1984) advanced case study research using a post-positivist approach to the methodology. Over time, Sharan Merriam and Robert Stake utilized adapted forms of case study methodology to evaluate programs and curriculum. Although Yin, Merriam, and Stake can all be classified as case study researchers their approaches vary both philosophically and methodologically, even to the extent of contradicting each other on occasion. We hope understanding Yin, Merriam, and Stake's approaches at a deeper level will help novice researchers make decisions about how to conduct, write, review, and/or teach case study research in alignment with their research purpose and philosophical assumptions. We have included a brief introduction about each of the three case study methodologists, along with a chart to quickly identify key terminology and characteristics associated with each. We intend for this resource to support consistency and alignment of case study research.

Yin's Positivist Approach to Case Study Research

Case study research depends on "prior development of theoretical propositions to guide data collection and analysis" (Yin, 2002, pp. 13-14).

Yin published the first edition of his well-known text *Case Study Research and Applications: Design and Methods* in 1984, at a time when researchers were utilizing case study, but the methodology was not well understood (Stake, 2017). Yin's primary emphasis is on process, and his use of words like "formal and explicit procedures" suggests his fondness for highly structured methods (Yin, 2018, p. 3). Yin's goal with case study research is the development of theory, believing case study design is the most useful in program evaluation. Yin advocates the use of case study methodology to help explain "how" and "why" questions. He also recommends case study design when the context is relevant to the phenomenon under investigation and when the lines between phenomenon and context are blurred (Yin, 2003).

Although Yin's case study approach is considered qualitative, his research paradigms are positivist. Terms like objectivity, validity, reliability, generalizability, and testing theory appear in his writing and

reflect his assumptions. Additionally, Yin notes the case study may incorporate quantitative data into its design and, at times, categorizes qualitative data to create quantitative data. Notably, Yin's 2018 revision of his original 1984 text suggests perhaps case study research should not be considered qualitative after all, but rather "a separate method that deserves much further explication" (Yin, 2018, p. xxiii).

Merriam's Constructivist Approach to Case Study Research

Case study research is "an intensive, holistic description and analysis of a bounded system such as a program, an institution, a person, a process, or a social unit" (Merriam, 1988, p. 21).

Sharan Merriam states what truly makes a case study a case study is the unit of analysis in a clearly bounded system (Merriam, 2009). She assumes reality is subjective and constructed through meanings and understandings of lived experiences and social interactions. A particular strength of Merriam's approach to case study research is her clear guidance for conducting literature reviews and selecting a theoretical framework. Suggesting theoretical frameworks may be drawn from literature or practice (Merriam, 1998), Merriam also makes clear recommendations for assigning titles to case study research.

Merriam prioritizes using practical processes to interpret and manage findings that are clear and applicable (Harrison et al., 2017) and recommends using multiple triangulation strategies to ensure rigor; data source triangulation, investigator triangulation, theory triangulation, and methodology triangulation. She emphasizes the holistic and ever-changing nature of qualitative research and insists the case study must provide enough details so the reader can see the author's conclusion is plausible (Merriam, 1998). While Merriam provides far less structure than Yin, she offers more concrete guidance than the third methodologist included in this article; Robert Stake.

Robert Stake's Constructivist Approach to Case Study Research

"Finishing a case study is the consummation of a work of art" (Stake, 1995, p. 15)

It is not an accident Robert Stake's book (which he refers to as a "Student Reader") is titled *The Art of Case Study Research*. He values the creativity that can occur within his flexible approach and explains: "Each researcher's style and curiosity will be unique in some way" (Stake, 1995, p. 13).

Stake describes his writing style for case study research as an "ample but non-technical description and narrative" (Stake, 1995, p. 134), recognizing the case report should include a "substantial body of uncontestable description" (Stake, 1995, p. 110). He also suggests including enough details about the physical context to provide ambiance while warning researchers not to overshadow findings with the description of the case. Stake asserts literature should be woven into discussion of a case study to ensure the findings are grounded in research. *Vignettes*--"briefly described episodes to illustrate an aspect of the case" (Stake, 1995, p. 128) --are a hallmark of Stakian case study to introduce and conclude a report.

Stake prioritizes the use of case study research for people and programs and emphasizes the importance of selecting case(s) that help maximize what we can learn (Stake, 1995). He also explains case study research is not meant to be generalized, but others may indeed learn from reading about a particular case (Stake, 1995). Philosophically, Robert Stake aligns closely with Sharan Merriam. However, Stake's approach to case study research differs from both Merriam and Yin in that he focuses on the case to be studied rather than processes and structures (Mishra, 2021).

Figure 1

Characteristics of Prominent Approaches to Case Study Research Used in Agricultural Education

	Robert K. Yin	**Sharan Merriam**	**Robert E. Stake**
Philosophical Assumptions/ Interpretive Framework	Positivism/ post-positivism	Constructivism/ Interpretivism	Constructivism/ Interpretivism
Research design	Tightly structured research design. Focus on the research process.	Presents a step-by-step process for research design	Flexible research design, focus on the case itself
Types of case studies	Single holistic, single embedded, multiple holistic, multiple embedded	Historic, observational, intrinsic, instrumental, multisite, descriptive, interpretive, evaluative, collective, cross-case, multi-case, comparative case	Instrumental intrinsic, collective
Data sources	Multiple sources, suggests use of both qualitative and quantitative data	Interviews, observations, document review, researcher-generated documents such as diaries or memos	Loosely structured interviews, observations, document review
Issues of Validation	Construct validity, internal validity, external validity, reliability	Data source triangulation, investigator triangulation, theory triangulation, methodological triangulation	Internal validity, reliability, external validity
Key terms	Objectivity, generalizability, unit of analysis, theoretical propositions, rival explanations	Theoretical framework, holistic description, particularistic, heuristic	Vignettes, assertions, issue questions, particularization

Note: Adapted from *Mishra, S. (2021 a) Mishra, S. (2021 b).* Yazan, B. (2015).

Situating Case Study Research in JAE

Recognizing the variety of approaches to case study allows us to turn our attention to the *Journal of Agricultural Education (JAE)* to review engagement with this method of qualitative inquiry. We utilized a conceptual content analysis (Krippendorff, 2004; White and March, 2006) to help provide a foundational understanding of how researchers and authors in the profession are conducting and communicating case study research. The content analysis provided methodological grounding to our philosophical exploration, including the methods and findings of the case study together in this section since they were not the standalone center point of our paper. Instead, the content analysis was a vehicle for methodological discussion; the findings in the next section will highlight the philosophical alignment toward a methodological discussion. We searched JAE for articles using "case study," locating 42 articles with this search term from 1997 through June 2023. Two articles were removed from the frame as they analyzed "CASE Curriculum" (not using case study methodology), and one article was available by title only. We organized the remaining 39 articles by author, title, and publication year. Upon further analysis, three

additional articles were removed as they analyzed the use of case studies as teaching tools rather than conducting case studies, and two outlined ethnographic or phenomenological rather than case study methods. Finally, three additional articles utilized the term "case study" in the title or abstract but did not include any component of case study methodology in their study. Instead, they were quantitative in nature, using descriptive statistics, content analysis, or general qualitative approaches. Noting the confusion this labeling contributes to engaging in case study methodology, these three studies remained in the frame for analysis, but encourage us return to Merriam's (date) recommended naming conventions including phenomenon, theory, and "case study" when titling articles. Throughout all phases of the research, we kept an audit trail that included detailed descriptions of our methods to promote trustworthiness. Additionally, we discussed results together and debriefed with other peers (Drisko & Maschi, 2015).

Using an Excel spreadsheet, we examined the articles to identify concepts, including case, concern, theoretical framework, philosophical assumptions, type of case study, data collection, number of participants, and identified themes. The remaining 33 articles were written by 97 authors, with an average of three authors per manuscript. The majority of authors (57, 59%) were only listed on one manuscript. Six authors were on two manuscripts, two were on three, and three were on four or more. Four authors were the first or solo authors of two or more manuscripts. Most commonly, authors used some form of collective (4), descriptive (4), instrumental (7), or multiple (3) case study approaches. Other identifiers included "qualitative case study," "mixed-methods case study," "exploratory case study," or simply cited Stake (1995, 2006, 2013), Merriam (1998, 2002, 2009), Yin (1989, 2003, 2009, 2014, 2017), or Creswell (1998, 2018).

Most authors named and described a theoretical framework or explained one was not utilized because of the desire for participant experiences or perspectives to frame the findings. However, far fewer authors positioned themselves as researchers and discussed philosophical assumptions impacting the research design. Data collection also varied. One-third of the studies used only one form of data collection, usually interviews or a survey. Another third used two forms of data collection, most often interviews accompanied by field notes or programmatic records. The remaining third either used multiple forms of data collection (27%) or did not outline the types of data utilized in their study (6%). Participant numbers ranged from one site to 290 survey responses accompanied by eight interviews. Case studies averaged 30 participants, recognizing a median of 10 participants.

Cases ranged and were variously bounded. Some examples of clear, bounded cases included: women's experience in a preservice teacher preparation program, science integration in a high school ag program, students at a particular high school preparing CDE (Career Development Event) teams, and a state's Farm Bureau Federation Young Farmers and Ranchers program. Other cases identified the concept to be studied or the general population without identifying what made the study sample a case. Themes and findings were equally varied, but commonly used only a single noun or the specific constructs of the theoretical framework to articulate findings. Knowing this, we are well-equipped to discuss opportunities to advance case study research in JAE.

A Call to Better Qual

Author Vignette: *"Many years ago, when I was pursuing an undergraduate music degree, my music theory professor was adamant about incoming students learning to write using basic chord structures and progressions before moving on to more advanced techniques. When we students strayed from these basic patterns, our assignments would swiftly be returned with bold red marks. Dr. McRoberts would gruffly scold us, "When you know what you are doing, you can go outside of these guidelines on purpose. But you are not going to do that simply because you do not know what you are doing."*

The above *vignette,* a tool utilized by Robert Stake (1995) to illustrate an important aspect or issue of a case, introduces the findings section of our article. We purport the same principle holds true for novice researchers learning to design sound qualitative research as it does for budding composers in any media. Experts go outside of norms intentionally, purposefully, and with good reason. Novices do so because they do not know better. Students of research should learn the norms and fundamentals initially and develop the habit of using these foundational patterns as building blocks to design and carry out sound research.

We presented Figure 1 as a starting point for novice researchers, teachers of research, and reviewers to use when considering differences (philosophical, and their methodological manifestations) among common approaches to case study research. Selecting an approach in alignment with one's philosophical assumptions and the intended research purpose is an important first step. Considering data collection techniques and sources, the design of the case itself, and terminology aligning with the chosen approach are also important. For example, when reading an *intrinsic case study* manuscript citing Stake throughout the methods section, a reviewer might anticipate the findings section would contain *vignettes.*

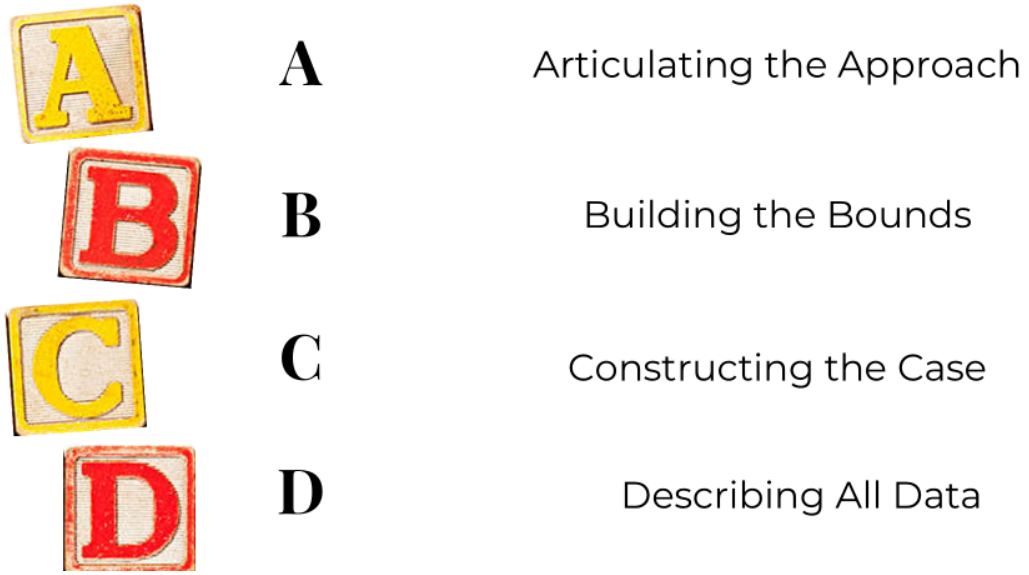
Once researchers have a solid understanding of the characteristics associated with a methodological approach, they may choose to make decisions outside the expected norms *if* there is a good reason to do so. We encourage writers to be especially intentional about communicating *why* choices were made when straying from patterns associated with identified methodologists and methodical approaches.

The ABC(D)s of Writing & Reviewing Case Study Research

In 2015, Yazan openly acknowledged a key challenge facing research conducted via case study methodology: "[Case study] still does not have a legitimate status as a social science research strategy because it does not have well-defined structure and well-defined protocols" (p. 134). While case study research continues to advance in JAE and allows researchers to pragmatically explore issues facing populations across agricultural education, our discipline faces a similar challenge in articulating case study research. We looked at case studies through our content analysis in JAE holistically; no matter what approach is employed, the four recommendations we share below can be utilized to strengthen case study design. We opted not to align our recommendations with specific findings from our case studies as all can benefit from the best practices identified to enhance case study research. As such, we ask writers and teachers of case study research to consider the ABC(D)s of case study research as recommendations (presented as themes to demonstrate naming conventions) aligning philosophical assumptions to case study approach with the methodological exploration outlined from JAE (Figure 2): *articulating analysis*, *building the bounds*, *constructing the case*, and *describing all data* as they prepare case studies and the resulting manuscripts, and request reviewers to look for the same.

Figure 2

Recommendations for Strengthening Case Study Research



Articulating the Approach

As we have already outlined, there are significant differences in how Yin (2002), Merriam (1998), and Stake (1995) outline case study research. Each espouses a different paradigm for approaching the methodology, and as such the means of engaging in case study look different. It is imperative, then, for researchers to clearly articulate their approach to case study research. Beyond citation, researchers must address the philosophical assumptions underpinning their case study work. We exhort writers to align approach with purpose and worldview (Harrison et al., 2017); designing the exploration supported by case study researchers and aligned with philosophical assumptions.

Too often, outlining philosophical assumptions is dismissed as bias inducing to research. Yet, all research is influenced by philosophical assumptions; regardless of the authors' choice to acknowledge them. These assumptions about the nature of reality and truth influence the kind of questions explored and how we go about the exploration (Glesne, 2016). Critically, researchers must position themselves within the research, explaining how their own worldview and prior experiences have impacted the research question(s), methodology, data analysis, findings, and conclusions. Reviewers should ask of any manuscript: Is there evidence to support how the researcher's philosophical assumptions have influenced this study?

Cleary articulating the approach has significant implications for how the research will be conducted, analyzed, and interpreted. Regardless of alignment with seminal approaches, we challenge researchers to move beyond gathering information to deeply digging into issues (Stake, 1995). "Good research is not about good methods as much as it is about good thinking" (Stake, 1995, p. 19).Themes should reflect meaningful issues, not simply identify key topics participants discussed. Merging aligned research with transparent writing to articulate the process is our central call. This manifests in approach and extends to the presentation of findings as themes. Deriving themes beyond convenient alignment with theoretical framing to explore the case under investigation truly and deeply is central to elevating this research methodology. Descriptively writing to articulate the same is also critical.

Building the Bounds

Given the variability in defining (or not defining) the case, we must take care in how our presentation and writing describe it. While each seminal case study methodologist defines "case" differently, on this they all agree: the limits of the case must be clearly defined. Writing research questions informed by literature, theory, and context are critical aspects of defining the case (Stake, 1995). Cases are defined in terms of their relation to the world around them, including place and time as well as geography, organization, types of evidence, and even priorities for analysis (Yin, 2002). This makes it critical to include detailed descriptions, not only of the case itself but of the context surrounding the case. Key details must move beyond describing the sample under study to explore the economic, social, cultural, historic, and even environmental context surrounding the case (Leite & Marks, 2005). Merriam describes this as "fencing the case" (2008, p. 40), and we use this analogy to remind writers a fence keeps things in and out.

The bounds of the case have impacts on the remainder of the study design and the appropriateness of selected participants and data sources. Only a detailed description of the case context and its bounds can fully help a reader or reviewer interpret the appropriateness of the data sources. As such, reviewers should expect to see the number of participants, length and frequency of interviews, observations substantiated by the case's context, and the approach to case study undertaken. This is part and parcel with "understanding and openly acknowledging the strengths and limits of case study research" (Yin, 2002, p. 4). In bounding the case, we acknowledge the limit of what the case allows us to explore, explain, and apply beyond its bounds.

Constructing the Case

Constructing a case goes beyond a simple diagnosis. In case study research, we must look beyond "cases of" to include looking back to our approach and forward to our exploration. Remember, Yin (2002) defines case as a "contemporary phenomenon within its real-life context," Merriam (1998) focuses on the "delimitation of the case" (i.e., what the case is not), and Stake (1995) contends defining the case is not possible based on individual interaction with and interpretation of the case. While this may seem like contradictory footing from which to build a case, we remind writers and reviewers the goal is alignment rather than survey. Definition of the case is one area where readers likely will not see citations of all three seminal authors.

Describing a case, then, must go beyond simply citing the seminal case study methodologist with which a study aligns. The alignment in case extends from approach through description of the data and presentation of themes. It informs every emergent, convergent, and divergent detail to be uncovered. Across the case, there will also be associated structures helping to guide the researcher--and subsequently the reader—through the aligning approach as well as the data. For example, case studies aligning with Stake's (1995) approach will most likely use vignettes, Yin's (2002) will include a "chain of evidence," and Merriam's (1998) will emphasize triangulation. Furthermore, and certainly not as a secondary consideration, the type of case study will have ramifications for the complete design. Philosophical alignment again becomes imperative as the case study undertaken should serve the study's purpose while guiding data collection, use, and interpretation through the aligning structures.

Describing All Data

Finally, a hallmark of case study is the ability to draw on all necessary data forms to support the exploration of and understanding through the case. Researchers must capitalize on the encouragement to use an array of data, likely qualitative, recognizing quantitative may also be appropriate, to explore their case and unearth what was previously hidden. Researchers' epistemological assumptions should influence the data sources. For example, a case study using Yin's (2002) approach would likely include both quantitative and qualitative data. Researchers citing Merriam (1998), or Stake (1995) would be more likely to only utilize qualitative data or at least most heavily emphasize the qualitative findings. All three, however, agree on case study as an in-depth method, implying the need for some kind of fieldwork, multiple sources

of data, and deep and up-close interaction with the case being studied (Stake, 1995; Yin, 2018; Merriam, 1998). Recognizing the necessity for an array of data to embrace case study design fully calls for researchers to engage beyond interviews. Across qualitative research, we must engage deeply with the relevant and integral components of study design beyond collecting talk to include cultural and environmental knowledge, beliefs, and assumptions, and with case study specifically, artifacts and evidence-building context for the case.

The opportunity to vary significantly across types of data collected is both a benefit and a burden for the researcher. While maximizing the benefit of all sources of data the case can share, the burden of appropriateness of the data source falls on the writer. For each data source used, the writer must explain both the appropriateness of the source and incorporate references to that data in their analysis. Reviewers can expect to see writers articulating how each data source was analyzed differently based on the type of data it provided, with support from citations. This use of data moves beyond triangulation. The multiple data sources encouraged in case study design are where the discrepant details emerge. Beyond confirmation, authors should discuss how additional data show a difference in reflection and practice, provide opportunity for prolonged engagement, and delineate differences from what has been previously published as it pertains to the case.

Novice researchers often look for concrete, objective realities when naming themes instead of subjective processes and experiences. When this occurs, themes become superficial and have a limited ability to contribute to literature (Mishra et al., 2022). This starts with analyzing data to consider deep issues rather than key topics and carries through the reporting of findings. Describing data well also means identifying themes in descriptive and revelatory ways. Identifying themes is challenging, and naming those themes, even more so. First and foremost, themes should fit together. In case study research, when exploring a bounded unit, themes should align within the domain of the case. As an example, "feelings," "ponderings," and "challenges," may be ways to make sense of the data in coding, but those terms do not help the reader understand the relationship between them in terms of similarities or differences. In addition, themes should be named in a similar fashion, demonstrate balance in presentation, and clearly relate to the research question and theoretical framework. Noting a tendency to utilize constructs from a theoretical framework to identify themes, we offer this distinction for readers: themes should help your reader understand the data as it pertains to emergent findings, the question the data supports answering, and the frame grounding the study.

Applying the ABCDs: An Example

Let us assume a case study focused on student teacher's expectations of their cooperating teacher. We provided a fictional example, as we do not presume to be able to unpack the philosophical assumptions of our fellow researchers and do not advocate dissecting their articles from our own lenses. Our content analysis situated case study research in JAE broadly, and we used a fictional example to more deeply explore the types of questions one might ask from our own philosophical approach. Using the guidelines above, we should first *articulate the approach*. Knowing we (the writers) lean pragmatically constructivist, Yin is off the table. To better understand which approach to follow, we need to articulate our purpose and research questions. Our purpose is to explore how student teachers engage in mentoring relationships with their cooperating teachers. Our questions then, may ask: What are student teachers' expectations of their cooperating teacher mentors? How are student teachers being mentored by their cooperating teachers? What cooperating teacher actions matter most to student teachers? What kind of mentor words, actions, and behaviors do not feel supportive to student teachers? While we may be interested in mentorship in a particular context (Stake, 1995), our questions, relative to our problem, are directing us to maximize learning (Merriam, 1998) about mentorship itself. Therefore, we might choose an *instrumental* approach to case study research, focusing more on describing mentorship than the particular program or setting in which it is occurring.

Second, we need to *build the bounds.* For the sake of example and space, we acknowledge the need to define the case geographically, historically, organizationally, economically, socially, culturally, historically, and even environmentally. This context may seem extensive but should not be assumed. For this example, we will build the bounds around all student teachers from one college participating in student teaching during the spring semester of 2024.

Recognizing alignment with Merriam (1998), our *construction of the case* should emphasize triangulation, and build credibility, consistency, and transferability into our study design. We should collect interviews, but could also collect student teacher assignments, notes from conversations with cooperating teachers and school administrators, and field notes from observing student teachers and cooperating teachers in action in the classroom, just to name a few. A hallmark of case study research is the use of multiple data sources; simply relying on interviews alone is not methodologically sound and does not align with this expectation. Also, case study research tends to emphasize prolonged engagement in the field, with observations occurring over an extended period.

Finally, we will need to *describe all data* included in the case study. This should extend far beyond mentioning we conducted, for example, "Five student teacher interviews, one hour of classroom observations, and analyzed three student teacher reflective assignments." In addition to including detailed information about each data source, the relevant data in each source contributing to the development of each theme needs to be explained. Describing the data is a function of the methods section, but perhaps even more necessary is outlining how the themes were gleaned from the data, particularly as it pertains to source. For example's sake, let us assume we named a theme "Desiring independence while seeking boundaries." Perhaps student teachers' interviews provided paradoxical evidence; while on one hand they wanted to be independent teachers, they also discussed regretting their cooperating teacher did not give them structure or guidance. We also may have found multiple reflective assignments written by participants providing similar evidence. Maybe the researcher even noted evidence of this in their classroom observations. In the discussion of this theme, it would be important to mention how individual interview data, reflective assignments, and field observations supported it. Participant quotes, text from reflective assignments, and comments taken from the researcher's field notes could all be used to describe this theme. Relying only on interview data and not explaining how other data sources were used within the case study does not provide the needed rigor.

Conclusion

"Perhaps the most difficult task of the researcher is to design good questions, research questions, that will direct the looking at the thinking enough and yet not too much" (Stake, 1995, p.15). We are not advocating a cookie-cutter approach to qualitative research, but instead providing tools and discussion to promote intentional decision-making. As we explore the challenges of conducting case studies and exhort writers to engage deeply in this research method, we begin with a challenge. Much of this call focuses on alignment, but technical and structural alignment alone will not produce good research. Beyond alignment, we ask writers to ask good questions, and we implore mentors and teachers of any research approach to teach good questioning toward solving wicked problems (Kolko, 2012). Improving qualitative work across our discipline is an intentional effort. Case study requires substantial alignment efforts to retain rigor and uncover revelatory findings. Revelatory findings move us from the "what" of the case to a detailed description providing insight into the "why" and "how" underneath the case. In a profession assessing impacts on learners of all ages, it is critical to try to understand what is going on behind the scenes; what is the story surrounding the statistics? Although case study research is not generalizable, it can certainly provide insight and perspective that may be useful in other contexts and situations.

Instead of simply identifying a case, rich and rigorous qualitative case studies ask good questions and yield complex answers. Furthermore, a case study should capitalize on multiple forms of data and rely

on opportunities for prolonged research engagement. Conducting case study research is more challenging than it may appear at first glance. To that end, this manuscript is a starting point. We hope we have provided enough context that readers know where to explore individual methodologists via original sources to enhance their case study efforts. We must ask questions situating us in broader problems and grand challenges. In trying to answer these questions, we will extend our research from exploratory to revelatory. Only then will we be able to move from the basics of methodological application into contributions reflective of our "intelligence and capacity" (Sze & Wang, 1701/1963, p. 17).

References

Creswell, J.W., Hanson, W.E., Plano, V.L.C. & Morales, A. (2007). Qualitative research designs selection and implementation. *The Counseling Psychologist, 35*(2), 236–264. https://doi.org/10.1177/0011000006287390

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry & research design: Choosing among five approaches* (Fourth edition.). SAGE.

Crowe S, Cresswell K, Robertson A, Huby G, Avery A, Sheikh A. The case study approach. *BMC Medical Research Methodology, 11*(100); https://doi.org/10.1186/1471-2288-11-100.

Denzin, N.K. (2009). *The Research Act.* Routledge: New York

Dooley, K.E. (2007). Viewing agricultural education research through a qualitative lens. *Journal of Agricultural Education, 48*(4), 24–42. https://doi.org/10.5032/jae.2007.040

Drisko, J.W. & Maschi, T (2015). 'Enhancing Rigor in Content Analysis Studies and Reports', *Content Analysis*, Pocket Guides to Social Work Research Methods https://doi.org/10.1093/acprof:oso/9780190215491.003.0005

Flyberg, B. (2011). Case Study. In Denzin, N.K. & Lincoln, Y.S. (Eds). *The Sage Handbook of Qualitative Research* (4th Ed, 301–316). Sage: Thousand Oaks, CA.

Glaser, B.G., Strauss, A.L. *The discovery of grounded theory: strategies for qualitative research.* New York: Aldine de Gruyter, 1967.

Glesne, C. (2016). *Becoming qualitative researchers: An introduction*. Pearson: Boston, MA.

Harrison, H., Birks, M., Franklin, R., Mills, J. (2017). Case Study Research: Foundations of Methodological Orientations. *Forum: Qualitative Social Research, 18*(1). https://doi.org/10.17169/fqs-18.1.2655

Leite, F.T. & Marks, A. (2005). Case study research in agricultural and extension education: strengthening the methodology. *Journal of International Agricultural and Extension Education, 12*(1). 55–64. Retrieved from: https://www.academia.edu/23804189/Case_Study_Research_in_Agricultural_and_Extension_Education_Strengthening_the_Methodology

Kitchenham, B., Pickard, L., Pfleger, S. (1995). Case Studies for Method and Tool Evaluation. *IEEE Software*, *12*(4), 52–62. https://doi.org/ 10.1109/52.391832

Kolko, J. (2012). Wicked problems: problems worth solving. *A handbook and call to action. Austin Center for Design*. ISBN: 0615593151

Krippendorff, K. (2004). *Content analysis: An introduction to its methodology* (2nd ed.). Sage.

Lincoln, S.Y. & Guba, E.G. (1985). *Naturalistic inquiry*. Thousand Oaks, CA: Sage.

Merriam, S.B. (1998). *Qualitative research and case study applications in education.* San Francisco, CA: Jossey-Bass.

Merriam, S.B. (2009). *Qualitative Research: A Guide to Design and Implementation.* San Francisco, CA: Jossey-Bass.

Mills, A. J., Durepos, G., & Wiebe, E. (Eds.) (2010). *Encyclopedia of case study research*. SAGE Publications, Inc., https://doi.org/10.4135/9781412957397

Mishra, S. & Dey, A. (2022). Understanding and identifying 'Themes' in Qualitative Case Study Research. *South Asian Journal of Business and Management Cases, 11*(3), https://doi.org/10.1177/2277977922113465

Mishra, S. (2021). Dissecting the Case Study Research: Yin and Eisenhardt Approaches. In Dey, A. K. (Ed.), *Case Method for Digital Natives: Teaching and Research* (1st ed., 243–264). Bloomsbury, India. ISBN: 978-93-54355-21-9

Mishra, S. (2021). Dissecting the Case Study Research: Stake and Merriam Approaches. In Dey, A. K. (Ed.), *Case Method for Digital Natives: Teaching and Research* (1st ed., 265–293). Bloomsbury, India. ISBN: 978-93-54355-21-9

Patton, M.Q. (2002). Qualitative Evaluation Checklist. *The Evaluation Checklist Project, The Evaluation Center,* Western Michigan University. Retrieved from: https://wmich.edu/sites/default/files/attachments/u350/2018/qual-eval-patton.pdf

Priya, A. (2021). Case Study Methodology of Qualitative Research: Key Attributes and Navigating the Conundrums in Its Application. *Sociological Bulletin*, *70*(1), 94–110. https://doi.org/10.1177/0038022920970318

Stake, R.E. (1995). *The art of case study research.* Thousand Oaks, CA: SAGE Publications.

Tellis, W. (1997). Introduction to Case Study. *The Qualitative Report, 3*(2), 1–19. https://doi.org/10.46743/2160-3715/1997.2024

Wang, K., & Sze, M. (1963). *The Mustard Seed Garden manual of painting = Chieh Tzu Yüan hua chuan*, 1679-1701: a facsimile of the 1887-1888 Shanghai edition with the text.

White, M. D., & Marsh, E. E. (2006). Content analysis: A flexible methodology. *Library Trends, 55*(1), 22–45. https://doi.org/10.1353/lib.2006.0053.

Yazan, B. (2015). Three Approaches to Case Study Methods in Education: Yin, Merriam & Stake. *The Qualitative Report, 20*(2), 134–152. https://doi.org/10.46743/2160-3715/2015.2102

Yin, R.K. (2018). *Case study research: Design and methods*. 6th edition. Thousand Oaks, CA: SAGE Publications.