BUILDING EVIDENCE IN EDUCATION

GUIDANCE NOTE ON QUALITATIVE RESEARCH IN EDUCATION:

Considerations for Best Practice

In order to develop education policies, structures and systems that create sustainable development, it becomes even more important than ever to understand what works, and in particular, in which contexts. Qualitative research methods play an important role in program evaluation, especially with a focus on research contextualization, but often they are considered "second class" when compared to quantitative evaluations. When researchers want to know 'what works', quantitative methods are commonly selected instead of qualitative methods. However, without good qualitative data to contextualize these findings, 'how or why things work' can often remain obscured. This guidance note addresses this gap to help commissioners of research and researchers design and implement qualitative research that use a high level of rigor.

The BE^2 Steering Committee*

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* The Building Evidence in Education (BE^2) working group is led by a Steering Committee composed of the Department for International Development (DFID), United States Agency for International Development (USAID), The World Bank Group and a UN agency, currently the *United Nations Educational, Scientific and Cultural Organization (UNESCO).*

Guidance Note on Qualitative Research in Education: Considerations for Best Practice

Foreword

The Building Evidence in Education (BE^2) donor working group was launched in 2012 with the aim to engage bilateral and multilateral donors and foundations committed to:

- Strengthening donor research collaboration and coordination;
- Encouraging higher standards of commissioned research; and
- Promoting the availability and access to rigorous evidence.

The working group is led by a Steering Committee composed of the Department for International Development (DFID), United States Agency for International Development (USAID), The World Bank Group and a rotating representative of the United Nations (UN) organizations, currently the *United Nations Educational, Scientific and Cultural Organization (UNESCO).*

This series of Guidance Notes, prepared for the BE^2 working group by its members, provides tools and guidance for generating better evidence and leveraging existing evidence more effectively and efficiently. These Guidance Notes have benefited from the advice of BE^2 member organizations and are intended to serve as tools for researchers and commissioners of research.

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Many organizations and practitioners have provided input, e.g., during working sessions at conferences or other feedback opportunities. BE^2 thanks all its members and other contributors for comments provided to drafts of this guidance note, in particular Bina D'Costa (formerly UNICEF Office of Research – Innocenti), and the education unit at UNICEF Office of Research – Innocenti, who provided comments on early drafts of the note.

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Introduction

Current issues in education research

In recent years, the increased attention from both the international community and national actors to solve the global learning crisis has been matched by a greater demand for research. This demand has led to a wealth of studies that seek to understand "what works" in improving learning outcomes. Qualitative research has been particularly important to shed light on "why," and under what circumstances, interventions or policies succeed or fail. But, with increased resources for research comes the responsibility to ensure the research is of the highest quality, a "gold standard." To this end, this guidance note covers how to design and operationalize high-quality research using qualitative methods.

The current state of evidence is mixed, and the proliferation of research has not always added up to a body of knowledge, making systematic reviews difficult. An increasing number of high-quality randomized control trials, which take an experimental approach to test whether an intervention has an impact, is being produced. Yet, taken out of the specific context, the results are rarely replicated. This "existential crisis" in the sector (George 2019) has led to a call for qualitative research that can provide rich contextual data, including political economy analysis, and shed light on the enabling environment and system in which interventions operate successfully. It has also highlighted the wider system failures, which in themselves require the toolkit of the qualitative researcher.

So, how can we fill the gap in high-quality qualitative research? The challenge is one of both demand and supply. There is a growing recognition that country governments and stakeholders facing challenges in delivering the education Sustainable Development Goals (SDGs) need to be at the forefront of both demanding evidence and identifying research questions. In addition, those commissioning research must make smart investments, which requires an understanding of the main principles and processes for conducting diverse forms of qualitative and quantitative research. One challenge is that researchers privilege methods dominant in their own disciplines; another is that time and resources are needed for genuinely mixed-methods approaches. The education sector has suffered from a lack of resources for academic capacity building in low-income countries, leading to a scarcity of experts with contextual knowledge. In addition, understanding the limitations and generalizability of studies will also help decision makers avoid misinterpretations and improve the application of evidence. The Impact Initiative has examined the use and uptake of knowledge across a range of country contexts and highlights the need for ownership of the research by policy makers from the outset (Impact Initiative 2019). As the body of knowledge grows, stakeholders (consumers, producers, and funders of such research) will need the tools to evaluate the quality of evidence presented, as we have witnessed from the demand for the Building Evidence in Education global group guidance on "Assessing the Strength of Evidence in the Education Sector." (BE^2 2015)[1]

[1] Hinton, R. 2015. Assessing the Strength of Evidence in the Education Sector. London, England: United Kingdom

About this guidance note

A core principle of this note is that research questions should guide the choice of research methodology, not the other way around. Increasingly, mixed-methods research, in which both qualitative and quantitative research methods work together, is considered the most appropriate approach. If we understand quantitative and qualitative at opposite ends of a research continuum (Creswell 2015), privileging either approach or discussing which one is better focuses on the wrong question. As such, this note aims to equip those using, commissioning, and conducting research in the education sector with the tools and information to assess when qualitative methodologies can and should be used and how to evaluate the quality of such research from its early design stages through implementation, data analysis, and dissemination. All stakeholders need to be confident in their knowledge of the main features of a well-designed qualitative research process.

For example, in the education sector, quantifiable differences in children's household economic situation or parental attitudes regarding secondary school completion reveal only one part of a complex picture. Qualitative studies can pose questions that challenge assumptions in a way that allows researchers to arrive at identifiable differences or guide responses to these differences. Rather than starting from parental attitudes or a household economic situation, a qualitative study might ask, "What does secondary education mean for various people in this context?" or "What experiences inside and outside of school seem to affect completion and why?" Findings from these (and other) lines of questioning can inform the design of policies and programs that acknowledge and work within complex systems.

Throughout this note, several examples of qualitative studies will be presented. The Young Lives study[2] by Oxford University and Voices of the Poor by the World Bank represent two of the largest-scale efforts to collect qualitative data (alongside survey data) to inform policies at a cross-national level.[3] In the case of "Young Lives," which focuses on reducing child poverty, qualitative data gathered with children, parents, and teachers have provided critical insights on their experiences, perceptions, and behaviors with regards to education in the countries of study.

Qualitative insights around experiences, perceptions, and behaviors are important and valuable evidence for informing policy decisions in education and, therefore, should be derived from high-quality studies. To help build high-quality qualitative evidence, this note is a resource to be used when discussing and designing qualitative research. It contains and explains key terminology, approaches, and methodologies used in qualitative research, as well as the fundamentals of the underlying criteria of high-quality studies.

Department for International Development, prepared for Building Evidence in Education (BE2). Accessible here: https://www.usaid.gov/documents/1865/assessing-strength-evidence-education-sector.

[2] For further information see www.younglives.org.uk.

[3] Other large qualitative projects that had an impact on the understanding of poverty include "Voices of the Poor" by the World Bank (see D. Naraya, et al. 2000).

This guidance note presents examples of qualitative research on education, privileging those from low and middle-income countries when available; however, the content of the note is not exclusive to research in one sector or income level, and the main principles and processes outlined apply across research topics and locations.[4] The research examples provided in this note meet the criteria for strong evidence (BE^2 2015) and present evidence-based guidance based on qualitative research. These studies included at minimum: a solid explanation of the study purpose and the methodology used; a detailed account of the data collection process, including sampling and/or selection of participants; an explanation of the analysis process and how data were analyzed to arrive at findings; and findings that are supported by detailed description of data.

The guidance note is organized as follows:

- Section 1 aims to set a common understanding of what qualitative research is and when it can provide the most value. It highlights the importance of being transparent about the choice of a methodology.
- Section 2 outlines the process for the design phase of various types of qualitative research.
- Section 3 describes different qualitative research methods.
- Section 4 outlines the analysis approach.
- Section 5 describes the implementation phase of conducting the study, covering the main areas of protocol design, sampling, and data analysis.
- Section 6 discusses critical issues related to guidelines and ethics for qualitative research.
- Section 7 summarizes considerations of reliability and validity interpreted for a qualitative context.
- The appendix includes a checklist to assess the quality of qualitative research summarizing many of the aspects covered at length in the note (see Appendix 1).

[4] Most of the aspects of high-quality research discussed in the note align with BE2's guidance note on Assessing the Strength of Evidence in the Education Sector, and the seven principles to assess evidence are included (the seven principles include: conceptual framing, openness and transparency, robustness of methodology, cultural appropriateness/sensitivity, validity [or in the case of qualitative studies: credibility], reliability [replicability] and cogency).

Section 1: A shared understanding of qualitative research

1.1 Purposes and contributions of qualitative research

What comes to mind when many people think of qualitative research is the type of data it generates: narratives, quotes, life histories, group discussion notes, or detailed ethnographic accounts of the life and behaviors of a specific community or group. These are powerful products to communicate the problems and solutions for education delivery in discussion with policy makers. Personal accounts may resonate at a psychological level with individual values, increasing the likelihood of evidence uptake. Profound behavioral changes are needed, beyond the nudge approach (Thaler and Sunstein 2009), to achieve shifts in government outcomes to deliver the educational SDGs. Building on insights from cognitive and behavioral sciences, the increasingly influential field of behavioral economics stresses the importance of identities, narratives, and norms in explaining human behavior that departs from standard economic "rationality" (Collier 2016); qualitative research is needed to gather the required data.

Qualitative research is critical to understanding the enabling environment for education services. Specifically, it can help us understand the gap between policy and practice. Strong systems diagnostics and an understanding of the socio-cultural context can increase both the choice and fidelity of interventions. With the increased concern about isomorphic mimicry—or the tendency of governments to mimic other governments' successes—qualitative evidence is needed to reduce the current failures in replication and scaling. As accelerating social change increases the complexity of development contexts, the "ground-truthing" of realities through qualitative methods becomes increasingly important (Chambers 2017, p. 156). A qualitative lens can expose the differences between how things are supposed to work *de jure* rather than the *de facto* structures—which is crucial for implementation at scale. One stark example is the continued significant investment in training that is measured by trainee attendance or, at best, the skills learned rather than the skills applied once back in the classroom. A comparative examination of investment in training by Popova, et al. (2018) shows that the majority of training does not an impact. Yet a systematic body of knowledge of "why" teachers remain poorly motivated and how best to support the acquisition and application of skills has yet to be gathered. Without the deep dives into the cultural and political context, interventions continue as if the *de facto* structures deliver as planned, ignoring what happens in reality.

Whether qualitative research in education focuses on educational resources or language of instruction in the classroom or draws on interview or observational data, what unifies such research is its attention to how humans relate to and make sense of their social and material world. Hence, qualitative research engages with people's experiences and views of the world in a given context and moment in time. The table below summarizes areas in which qualitative research can contribute both, as it is used alone or combined with quantitative research.

Table 1: Contributions of qualitative research

Qualitative research is useful to better understand:	Combined with quantitative research:[5]
• Behaviors, emotions, experiences, and one's explanations of these. • Attitudes, opinions, and actions and how people justify them. • Perceptions of phenomena. • Identifying unanticipated influences and outcomes. • Culturally shared meaning. • Social structures and relationships. • Processes and relations within systems	• Provides meaning and context to data. • Can explain quantitative results beyond the numbers. • Helps to develop surveys, intervention materials, and processes. • Helps to develop new hypotheses and theories when there are none or the existing ones are inappropriate or inaccurate. • Provides causal explanations (beyond proven causality)

When it comes to education, the purposes described above can be applied to a range of research questions. These questions can be applied at different levels of educational systems—from the macro-level of policy-making and data use to the meso-level of schools and how they function or produce learning and the micro-level of students, teachers, and parents and how learning occurs through individual interactions and engagement. Qualitative research can also be used at different points in the policy process, such as understanding the antecedents and underlying causes of an educational problem before it is addressed, or capturing how the implementation process is going or understanding why an intervention did or did not work the way it was planned.

Much of qualitative research explores and generates, rather than tests, hypotheses; as such, it will often depart from a pre-identified set of assumptions or models of reality. Rather, it tends to identify and generate explanations from the data and the data collection process in a flexible and iterative process, as findings can and do affect the research design and direction and can challenge initial research assumptions or ideas.[6] Even in cross-country or longitudinal research, when

[5] This guidance note does not go into detail about mixed-methods, though the reader should note that many of the approaches discussed throughout the note can be used in mixed-methods studies. For more in-depth discussions on mixed-methods approaches, see Creswell and Clark 2007; Teddlie and Tashakkori 2009; and Bamberger 2000.

[6] Iteration—revising and revisiting as research progresses—is central to all exploratory analysis. This does not mean that iteration is unique to qualitative research, nor that there is no qualitative research that departs from a priori concepts or theories. The distinction between quantitative and qualitative is more of a continuum than a binary, with

comparability of data is expected, a qualitative approach will encourage degrees of freedom to respond to priorities and findings in each location or moment that lead to locally relevant explanations and theories (see for example the Young Lives approach to qualitative research in four countries described in Crivello, Morrow, and Wilson 2013).

Similarly, qualitative research's attention to contextually specific knowledge calls for research to be situated within the social, political, cultural, and economic context, and to be conducted in a culturally appropriate way. As such, researchers must be knowledgeable about and aware of their situation within the context of the research. For ethnographic research, this would demand fluency in the local language and the adoption of core cultural dress and conduct. The ethnographer would be required to build trust and integrate sufficiently to become a participant observer (Brewer 2000).

The range of qualitative research methods available provides great flexibility in the type of evidence that can be gathered. Thick description, for example, provides valuable detail (see Box 1). In general, the emphasis in qualitative research on processes over measurement and analysis of causal relationships (Maxwell 2013) can be helpful.

Box 1: Thick Description: The value of details

Although most commonly found in ethnography, thick description is a feature of much of qualitative research. Thick description involves accurately describing and interpreting social actions within the context in which the social action took place (Ponterotto 2016).

The term was first used by Ryle (1949), who distinguished between "thin" and "thick description," with thin being more like a photograph and thick being akin to the photographer narrating the context and content of the image. The anthropologist Clifford Geertz (1973) applied Ryle's "thick description" to describe his own work, which used participant observation, saying: "really our own constructions of other people's constructions of what they and their compatriots are up to" (p. 9). Since Geertz, the concept has been applied as a tool for qualitative research in sociology, psychology, and education studies.

Sociologist Norman K. Denzin (1989) highlights the following features of thick description, in contrast to thin description: "(1) It gives the context of an act; (2) it states the intentions and meanings that organize the action; (3) it traces the evolution and development of the act; (4) it presents the action as a text that can then be interpreted. A *thin description* simply reports facts, independent of intentions or the circumstances that surround an action" (p. 33). Thick descriptions also enable the reader to evaluate the extent to which the conclusions of a study are drawn from context-specific aspects of a situation or whether they are transferable to other times, settings, situations, and people (Lincoln and Guba 1985, p 124-5).

each research methodology displaying, on occasion, characteristics of the other (e.g., qualitative research can be quantified or use more standardized instruments, and quantitative research can include flexible data collection processes and rely on bottom-up explanations) (See Brady 2004, Mahoney and Goertz 2006, and Ragin 2014 for more details on the distinctions between qualitative and quantitative research).

1.2 Transparency of methodological choices

It is important to be clear about what qualitative research can and cannot do. Qualitative researchers do not generalize particular findings, which can never be fully extricated from their place and time, but they do develop theoretical and practical insights into how the social world may work under particular conditions. In contrast, quantitative researchers seek "power" in large sample sizes, aiming to generalize by controlling for factors that differ across contexts. This enables the study of far greater extents of space and time. The failure to replicate quantitative studies in different contexts, however, suggests a tendency to underestimate the complexity of how contextual factors can influence measured variables.[7] Reliance on "hard" quantitative methods and the subsequent failure to achieve externally valid results has contributed to the "existential crisis" noted in the introduction.

Another feature of qualitative research is the degree to which the interpretation and analysis of data depend on the particular theory the researcher has chosen to use. This means the model of testing hypotheses against data, common in quantitative research, may not be an appropriate measure of rigor in qualitative research. Although professional judgment is often relied on more heavily, there usually exists a far greater opportunity to test theoretical assumptions because the density of evidence in qualitative settings provides greater scope for falsification. Experienced qualitative researchers commonly report having to significantly alter their theoretical assumptions having spent time in the field.[8]

[7] See Pritchett (2017) for a discussion of these issues.

[8] See Section 5 below for approaches to rigor specific to qualitative research. See Building Evidence in Education (BE2) (2015) for how the quality of both qualitative and quantitative evidence may be assessed in terms of validity, reliability, and cogency.

Section 2: Processes for designing qualitative research

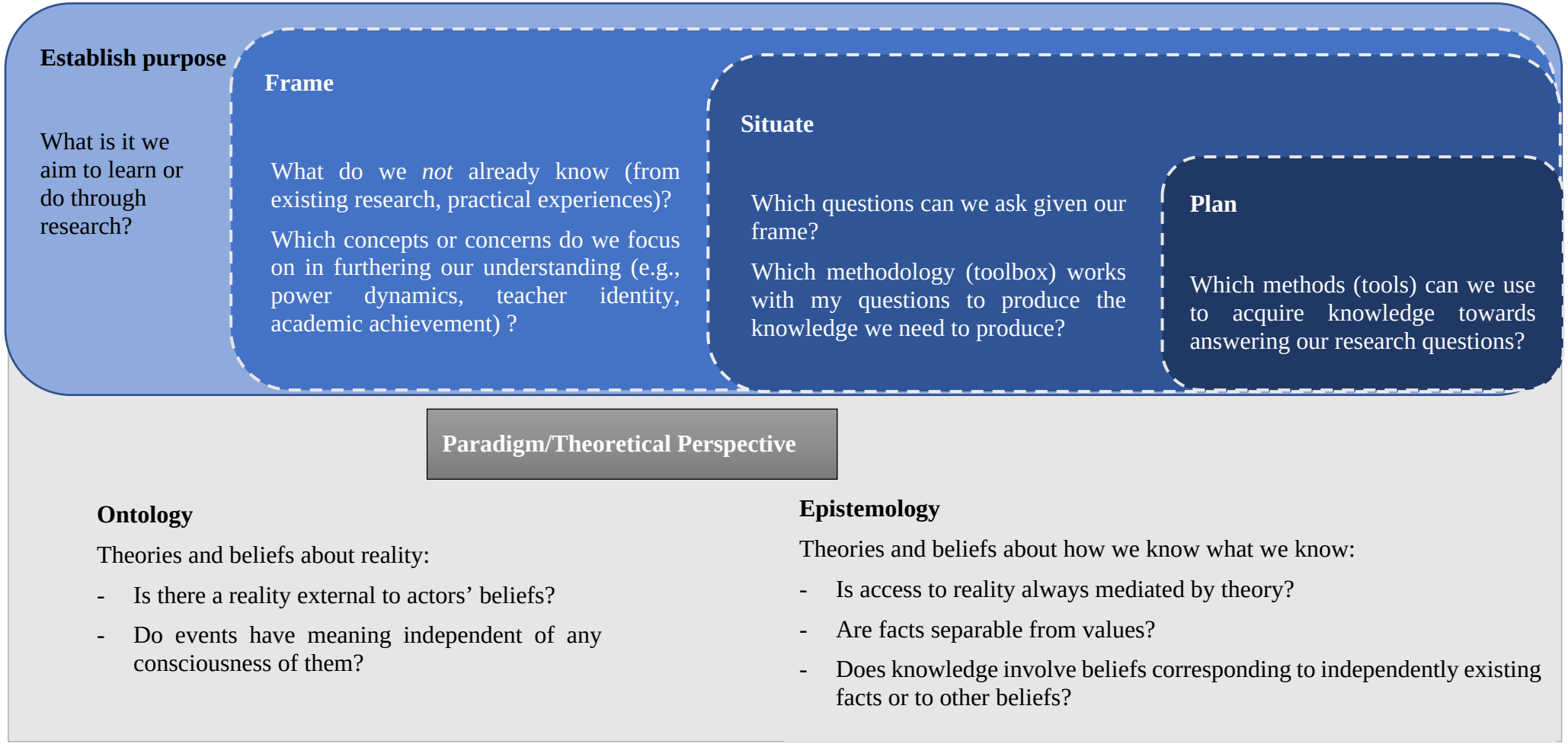
A common mistake when thinking of conducting qualitative research is starting with ideas about methods (e.g., focus groups, interviews, or classroom observations) before discussing and deciding on the overall purpose and related assumptions of the research. The purpose and assumptions should inform the selection of methodologies and methods. Identifying and agreeing on assumptions, purposes, and research goals before and while deciding on the data collection tools are good practices in qualitative research. Qualitative research design is a process of conceptualization that flows from the research purpose to its findings. We use the term "conceptualize" because a design requires organization and justification to establish coherence between the elements of the study and its relevance to the purpose and context. Researchers can learn a great deal from existing studies, but conceptualization goes beyond picking out and applying designs from a catalogue of options. Judging the quality of a qualitative study is, in part, about evaluating how rigorously researchers conceptualized a design that establishes coherence between research purpose, context, and assumptions about the world.

Figure 1 shows the process of designing a rigorous qualitative study, including 1) establishing a purpose, 2) framing, 3) situating the questions and methodology, and 4) selecting methods and planning data collection. The alignment of the purpose with a framework and methodology is always situated within assumptions and knowledge about the world. Therefore, we need to be reflexive about our ontological and epistemological assumptions before and during the study. As shown in the figure, these assumptions undergird our framing and design. It is necessary to frame a study before designing it, but that does not mean the work of framing is necessarily finished once the design is chosen. Qualitative research is generally an iterative process, and the research design can change in response to the data. Such adaptation is a sign of rigor if it allows us to gather more meaningful data to answer our questions. When making design choices, it is necessary to consider the assumptions that inform such choices. For example, if struggling between two methodologies, it is wise to revisit key concepts in the frame to assess the merit of the methodologies in addressing those concepts.

Ontology is the study of the kinds of entities that constitute reality. Debates between different traditions of qualitative research often have an ontological dimension. For example, positivists[9] assert reality is made of entities that exist objectively as facts beyond the minds of actors. Social constructivists take reality to be socially constructed, dependent on the meanings developed intersubjectively within a specific culture. Critical realists argue for a "stratified" ontology that enables causal claims to be made on behalf of structures and powers that may not be empirically observed.

[9] Positivism in the social sciences involves the claim that society, like nature, is governed by laws and that uncovering these laws should be the goal of social research. This uncovering has primarily involved searching for statistical regularities between variables. Many quantitative researchers, following Karl Popper, hold "postpositivist" views that acknowledge the theory-dependence of their findings while upholding the scientificity of their approach.

Figure 1: Process for designing rigorous qualitative studies



Epistemology is the study of what knowledge is and how it is achieved. Claims about knowledge are related to claims about reality. For example, positivism can claim to achieve objective and theory-independent knowledge only because it assumes that the reality it investigates exists beyond the concepts and meanings (theory) of the researcher. Interpretative/constructionist, critical, and deconstructive approaches deny that reality can be accessed except within the confines of a particular theory and that it is impossible to extricate the facts described in research from theory. This makes the researcher's knowledge claims relative to his or her particular theoretical perspective and, as such, not "objective" in the sense of being universally valid.

A ***paradigm or theoretical perspective*** is a tradition of research commonly identified by a set of ontological and epistemological commitments and a shared sense of what research is for and what it can achieve. Quantitative research tends to operate within a positivist paradigm, in which research aims to uncover statistical regularities that correspond to causal laws. A phenomenon is said to be explained here if its relationship to other phenomena can be reliably and validly described. Qualitative research, by contrast, primarily aims at *understanding* the human actors under investigation in terms of their motivations and the meanings they give to their reality. Different qualitative paradigms may have additional goals, as described below.

Methodologies involve applying our theoretically informed approach to gain knowledge about the world, including a coherent set of methods and processes for analysis. Methodological analysis aims to ensure consistency between the research question, theoretical assumptions of the study, and the toolkit of ***methods*** chosen for collecting and analyzing data.

The theoretical issues discussed above are inescapably bound up with any scientific endeavor. Yet self-reflection regarding ontology, epistemology, and methodology is typically a feature of qualitative rather than quantitative research. The adoption of the positivist paradigm from the natural sciences has enabled quantitative research to unify its methods and make incremental progress without calling into question its theoretical assumptions. In contrast, questioning the nature of social reality, our access to it, and the status of our knowledge has led to a branching of approaches within qualitative research, emphasizing different questions relating to the social world and deriving from distinct philosophical traditions. To a far greater extent than quantitative research, changes in qualitative theoretical approaches and methodologies have tended to be part of broader social and intellectual changes, such as poststructuralism, postcolonialism, and feminism. Many qualitative researchers self-consciously position themselves within these movements. Theoretical debates are therefore close to the surface in many areas of qualitative research.

For more details on the topics discussed above, please see Box 2 and Figure 2 below.

Box 2: Putting it all together: An example

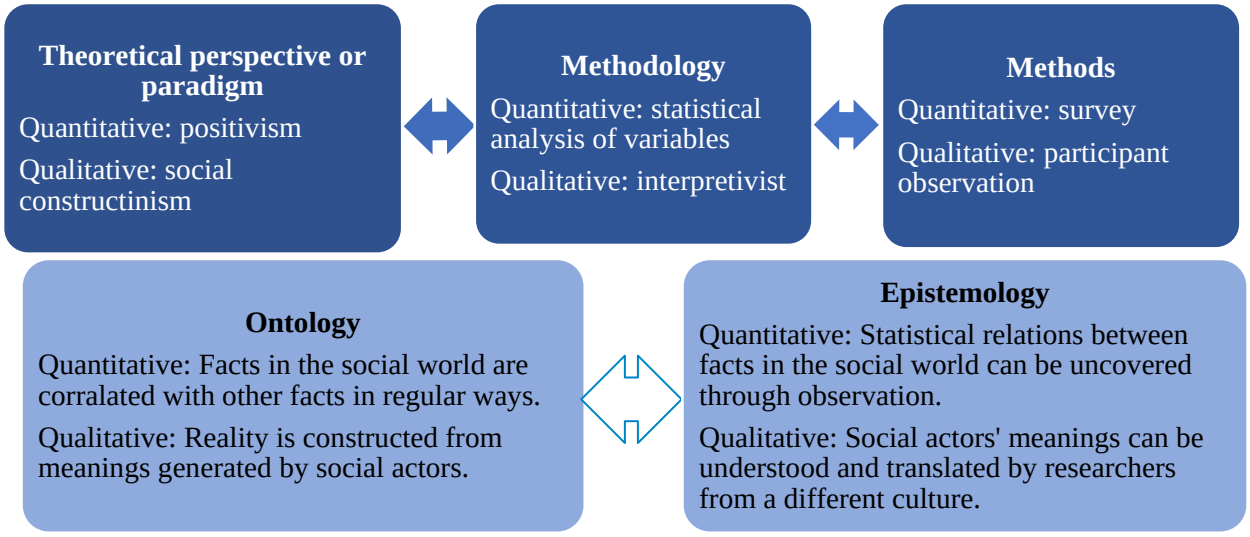
Teacher absenteeism is a challenge in the education sector of many countries in sub-Saharan Africa. Suppose the goal of a research project is to better understand teacher absenteeism in order to inform policymaking. This study could be conceptualized and carried out in different ways based on different ontologies, epistemologies, and, thus, paradigms in doing research.

A quantitative approach may start by reviewing data from other studies of teacher absenteeism in order to identify measurable factors that may be statistically related to teacher absenteeism. Formative fieldwork may also be used to identify the factors to be measured. Researchers may then develop a survey to collect the data deemed relevant, such as teachers' health, marital status, level of independent means, the distance between home and place of work, and gender. The ontological assumptions behind this approach are that social facts (teacher absenteeism) are correlated with other facts (gender, marital status) in regular and predictable ways. Social reality, like physical reality, is assumed to be governed by invariant laws. Epistemically, an explanation is deemed to have been provided if we can say that, given a more or less restricted set of background conditions, when one or more variables are present, the phenomenon to be explained is also present. Deciding to use a survey as a particular method, in this case, brings with it further epistemic assumptions, namely that the variables will be known to the respondents and will be reported reliably. Statistical analysis of the survey data could then explain teacher absenteeism in terms of the factors related to it, which may then help to inform the policymaking process.

A qualitative approach may attempt to understand the phenomenon of teacher absenteeism in terms of the beliefs and motivations that lead to this behavior. Researchers may attempt to build up a detailed picture of the social world in which the teachers live and work. This may use the ethnographic method of participant observation, situated in the interpretivist paradigm. Areas of investigation may include the personal, social, and economic circumstances of teachers, how their work fits with their other roles and identities, how they see their work in relation to the community, or how they experience the institutional structures of the education system. This approach may be grounded in a social constructivist set of ontological and epistemic assumptions. Reality here would be conceived as constructed from the meanings generated by social actors. What "going to work" means will vary from one culture to another, including with respect to the obligation to attend. Epistemically, researchers assume they can access these meanings through extended exposure to and participation in local social practices. This is by no means straightforward, as the researcher may start with very different concepts and meanings from the interviewee, posing a significant hermeneutic challenge. However, by exploring how the research subjects connect their concepts to other concepts, practices, and institutions the researcher attempts to translate the subjects' meanings into terms familiar to the researcher. The kind of explanation aimed at here is based on teachers' beliefs and motivations—and, once these are known in enough detail, teachers' decisions not to attend become "understandable." The level of detail gained from this approach may help to determine how teachers are likely to respond to changes made to their circumstances by policymakers.

The box below indicates how theoretical and methodological assumptions are related to the choice of research methods. This is not a linear process, but demands reflexive reconsideration of each element, including the validity of the assumptions, as the research progresses.

Figure 2: Theoretical aspects of methodology and method



2.1 Paradigms and methodologies

The nine qualitative methodologies this note deals with may be grouped into three broad paradigms. There are significant overlaps, and room for disagreement regarding exact placement exists, but as Figure 3 below shows, each methodology can be said to correspond to one of three aims: (1) understanding social phenomena in their context; (2) creating change and empowerment; and (3) challenging and countering dominant discourses.

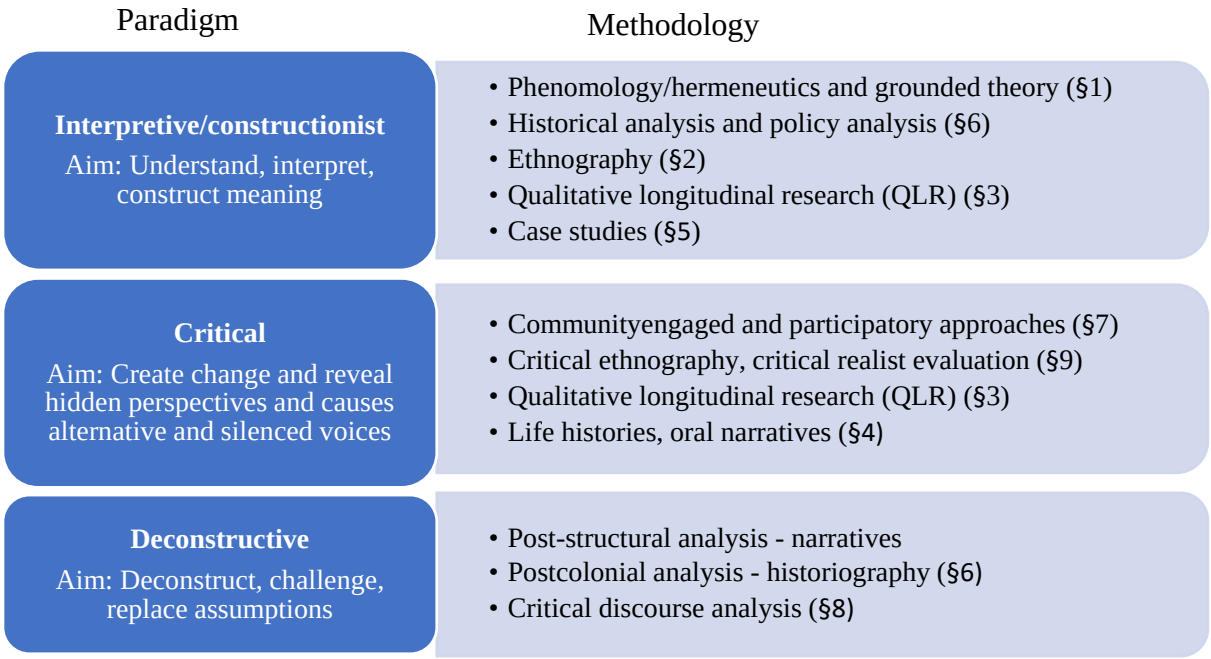
2.1.1 Paradigms

An *interpretive or constructionist paradigm* seeks to understand human behavior and social contexts by understanding the meanings actors give to their actions, goals, roles, identities, and all aspects of the world they experience. Meanings are commonly said to emerge "intersubjectively," as the outcome of communicative action between subjects. Common techniques include 'Verstehen,' whereby the researcher attempts to see the world through the eyes of the person or group under investigation, and 'thick description' (see Box 1).

For the *critical paradigm*, the point is not merely to understand the social world but to change it. Research into the underlying causes of discrimination, domination, or injustice is seen as a prerequisite and motivator for social change, and it often involves the inclusion of research participants who might otherwise be underrepresented or silenced.

Deconstructive approaches aim primarily at analyzing forms of knowledge (discourses) that are argued to configure power relations in which certain groups are subordinated. By revealing and criticizing (deconstructing) the historical formations of existing discourses, this approach aims to create space for different discourses corresponding to more equitable configurations of power.

Figure 3: Different paradigms and methodologies of qualitative research



2.2 Methodologies in qualitative research

This note covers nine main methodologies that can be used to guide qualitative research in education. As noted earlier, these are the research and analytical approaches that will guide the choice of methods. Each of them is described in detail below, and relevant examples are presented for each of them. These are not mutually exclusive—for example, it is possible to do case studies in participatory ways or to apply critical discourse analysis to a policy study.

2.2.1. Phenomenology and hermeneutics

As methodological approaches, both phenomenology and hermeneutics are primarily concerned with how humans live in, experience, and interpret specific phenomena in their world (van Manen 1990).[10] Phenomenology is particularly useful when studying groups of individuals' experiences

[10] These are also philosophies that have underpinned several methodological approaches in the

and interpretations.

For example, Sharma-Brymer and Fox (2008) use this methodology to understand what it means to be an educated woman in India. They explore women's narratives of their experiences and identify patterns and differences in the narratives and women's tensions and conflicts. They show how recipients of education regard the value of education in their own lives and what that education means within their socio-economic groups and in different circumstances. Another study, Vagle (2009), looks at how teachers experience moments of recognition and response when their students are not understanding something. This study captures teachers' own thinking, feelings, and actions as they see and experience them in relation to students in the classroom. The study also identifies, for example, how teachers recognize students' body language and when, and if, that recognition prompts actions by the teachers to address what they are perceiving. In the first case, understanding education's meaning can support the design of policies aimed at increasing school attendance, for example, by presenting information on the value of education. In the second case, understanding the nuanced processes of teaching can be used to design support materials for teachers or those working with them.

Related to phenomenology and hermeneutics is **grounded theory**, which aims to generate emerging theories from in-depth qualitative data by interpreting key themes across multiple data points or participants (Corbin and Strauss 1990).[11] This type of study is particularly useful when existing theories are not appropriate to the question or context under study. Such a study can help generate more relevant theories that can then be further tested on larger samples of participants or in other contexts.

An example of the use of grounded theory is provided by Kirchoff and Lawrenz (2011) who study teachers' career paths in high-need contexts. The analysis of teachers' interviews reveals a theoretical model of career paths informed by factors such as the support provided by the education programs and the preparation teachers received for working in high-need settings (in the analysis section later in this paper, additional details are included to show how the authors undertook their analysis).

2.2.2. Ethnography

Ethnography encompasses a diverse set of approaches and methods that primarily aim to understand participants in their social and cultural context in order to provide social and cultural explanations of a phenomenon (Anderson-Levitt 2012). In this quest, ethnography engages with cultural contexts and communities over a longer time frame, and it tends to involve the researcher as a participant observer in the context over a period of time, often acquiring the local language and using multiple data collection tools.

For example, Magee and Pherali (2017) observe a non-formal educational program supporting Jordanian and Syrian refugee youth. They also report how participatory pedagogies engage out-

interpretive/constructionist tradition, including grounded theory, ethnography, and general interpretive methodologies, such as semiotics.

[11] Grounded theory uses a sequential iteration—analyze, revisit, revise—to identify categories and concepts within the data that are then linked into formal theoretical models in a systematic manner. It does so by using a constant comparison method (Glaser 1965).

of-school refugees in host communities and describe how a series of intersecting factors, such as the value or desire for certification, affect the use of such pedagogies. Similarly, Rodriguez Gomez (2017) reports findings from 12 months of research in an Ecuadorian school, including how being in an environment of protracted armed conflict permeates everyday life. Social linkages with the conflict affect relationships within the school community, including between the school and children.

While ethnography has mainly been used to study groups of people, it has also been applied to the study of policy as enacted in education (see Sutton and Levinson 2001). This approach is more in line with the critical ethnography of education and development. **Critical ethnography** aims to reveal hidden assumptions underlying education systems, development aid, or learning. Ethnographies stemming from the critical paradigm question taken-for-granted assumptions or ideas (even when expressed by the research participants, who are asked to consider counterfactuals). In this way, critical ethnography aims to reveal and question the assumptions of the system or program (Levinson, Foley, and Holland 1996).[12]

In an example of critical ethnography, Jeffrey, et al. (2008) studied unemployment and underemployment among young Muslim men in Uttar Pradesh, India. The study reveals "school-educated" men and "madrasah-educated" (religious school-educated) men's perceptions of their education and how these perceptions related to their search to become "respectable men," including their views of what constitutes good work. The study also reveals how uneducated men have different views about education and job search strategies than their educated peers and how critical they are of them. As another example, Bartlett and Garcia (2011) document a four-year research engagement in Gregorio Luperon High School in New York City with a majority of Dominican immigrant students and provide accounts of curriculum, teacher practices, and the school community that challenge the view that schools serving such populations are failing to educate students. Moreover, the study also provides an account of the extent of positive situations and outcomes that challenge assumptions about the school's achievements.

2.2.3. Qualitative longitudinal research (QLR)

Qualitative longitudinal research is primarily concerned with understanding how time can affect individuals, groups, or a given phenomenon, and it analyzes the dynamics of change and continuity in relation to time or across generations (Saldana 2003). It includes a number of approaches and methods, including ethnographies that extend over years, repeat interviews, observations, or life histories.

[12] This includes international aid in education where researchers such as Mosse (2005) suggest that low-impact projects might be because of faulty assumptions about educational policies and practices.

For example, the Young Lives qualitative study follows children over a seven-year period to understand their educational experiences and life trajectories. The qualitative approach was designed to gain an in-depth understanding of children's views and opinions and to document change and continuity in their lives. (Crivello, Morrow, and Wilson 2013). Given the richness of the dataset, several papers and analyses have been produced. One example is the research that Thuc Du and Minh Tam (2013) do using the third wave of Young Lives qualitative data (combined with analysis of Young Lives survey data) to look at school dropout in Vietnam. They find, from the explanations of the children who left school early, that children's reasons for doing so were commonly related to the need to contribute to income generation. For example, for one child whose household was chronically poor, the authors found that this child had previously devoted most of her time to work. Time spent at work had affected her ability to study, leading to poor performance, low expectations in future exam performance, and finally, her mother's decision to pull her out of school even before the exam was to be sat. In the case of a second child, who passed the exam and had a family with a good economic status and that valued education, the study recorded his experience of being the only one from his ethnic group in his class and how this affected his later decision to drop out.

Camfield and Roelen (2011) also used the Young Lives data to look at a group of Ethiopian children and their experiences in transitioning in or out of poverty over time. They also looked at how some positive changes (e.g., the acquisition of livestock) were not unequivocally beneficial to children, as some children dropped out of school to herd the new animals.

Another example of qualitative longitudinal research is a five-year study of the dynamics and impacts of a livelihood program for youth in East Africa. Lefebvre, et al. (2018) studied how youth were able to "get ahead" as a result of the program, as well as how those "getting by" experienced challenges. "Getting ahead" and "getting by" were defined from the data as the research team examined how their livelihood trajectories developed. For example, fewer young women were getting ahead, in part because they faced exploitation and harassment in securing employment. Furthermore, the sectors in which they were often employed or self-employed were less secure or lower paid.[13] This longitudinal qualitative study added to an analysis of findings of short-term, post-training outcomes (Krause, et al. 2016), and it provided a complex picture of youth earnings, livelihood, and wellbeing.

2.2.4. Life histories, oral histories, narratives

Life histories, oral histories, and narratives are inquiry approaches that tend to focus on individual experiences and how individuals construct important events in their lives (see Clandinin and Connelly 2000). Narrative inquiry follows the idea that experiences and memory are organized as a narrative or account of events partly along a timeline, but that the timeline is both socially and experience-dependent (Clandinin 2006, Bruner 1991).[14] Oral histories are a useful method to

[13] Researchers collected annual interview data for five years from of 230 youth, asking about their participation in further education/training, working for pay, savings patterns, goals, and challenges and opportunities in attempting to create a sustainable livelihood.

[14] As with any account of something that happened in the past, salient pieces of a process or event are captured in a narrative, and the time span between these events might vary.

document lives and experiences underrepresented in mainstream research or experiences not represented in aggregate data. These narrations can be done individually, or they can be used as a form of community-engaged research[15] by having the participants' construct and share their oral histories in an effort to change commonly accepted knowledge about history. Life histories and narratives can be particularly helpful in understanding how the lives of specific individuals are affected by certain events, as well as how different decisions, actions, and external influences concatenate in a person's narrative of their own life.

One example of narratives related to teachers and teaching practices is Vance, Pendergast, and Garvis' (2015) study of teacher resilience, including skills such as persistence, problem solving, and confidence. This research asked about teachers' perceptions of their own resilience while they were involved in a program to teach socio-emotional skills and promote resilience among students. Teachers were interviewed repeated times and engaged in conversations where emotions, feelings, and practices in the classrooms were detailed. Findings show how teachers reflect on their own views of resilience—something they said they had not given a lot of thought to—as they teach the content of the curriculum. It also showed how these teachers link resilience to stories of their personal life rather than their professional role, despite the program including features of resilience in the curriculum.

2.2.5. Case studies

In case studies, the focus is not on individuals (as with previously discussed methodologies) but on cases defined by specific boundaries related to the phenomena or setting. Cases include both individual experiences as well as contextual information from multiple forms of data. Case studies can be single or multiple (comparative) and can refer to a program, site, or group of individuals (Bartlett and Vavrus 2017). Irrespective of the type, case studies use a variety of methods to more fully describe and explain the phenomenon of interest (Yin 2017, George and Bennett 2005). This is done by triangulating the evidence from different data sources or by data proceeding from an inquiry on different aspects or participants involved.

2.2.6. Historical and policy analysis

Historical and policy analysis is one of the approaches that can take different forms depending on the paradigm framing the study. An interpretive approach will focus on how problems addressed by policy come to be, how policy options are formed, and how policies are then implemented. This approach tends to examine political processes, policies as texts, and policies as practices (Dunn 2015). Critical approaches examine who is advantaged or disadvantaged by a policy. For instance, a critical sociological approach proceeds by situating policy problems, texts, and practices within a social context of considering what constitutes "policy problems" as defined by different groups (Gale 2007; Ball 1993). Also, a critical approach seeks to understand the policy discourses and practices related to the policy problem under study; this approach can focus on examining public issues and how they came to be addressed through policy, both in the past and in the present (Gale

[15] Community-engaged research encompasses a set of approaches that situate the participants of a study as co-inquirers in the process of producing that study.

2007). Historical analysis grounded in a postcolonial perspective, the third paradigm, examines issues or policies in education in relation to colonial or various imperialist influences and aims to deconstruct past practices and taken-for-granted current practices (see Tikly and Bond 2013 for more on postcolonial research and ethics).

For example, Dreyden-Peterson and Mulimbi (2017) provide a rich example of historical policy analysis of education policies in Botswana starting in 1966. They draw on documents, in-depth interviews, and survey data to present the analysis of a set of moments in history that defines critical periods of negotiation between the two main opposing ideas permeating Botswana's education system, national unity and ethnic diversity.

Seth's (2007) examination of the British colonial system of education in India is an example of historical analysis from a postcolonial perspective. The research focuses on the period between 1835 and 1930 and the British colonial authorities' decision on whether to base the official education format on the English language and "western" knowledge or Sanskrit and Arabic and "oriental" knowledge. The research offers a historical analysis of how a "western" knowledge approach was enacted and perceived over time and how this choice came to be seen as the only knowledge system (rather than one of many). The research presents how "western"-oriented education ideas and practices continue today.

2.2.7. Participatory approaches

Participatory and community-engaged research encompasses a set of approaches that situate the participants of a study as co-inquirers in the process of producing that study, as opposed to simply being sources of data. Robert Chambers (1983) developed a range of participatory methods to overcome the barriers to understanding the local, diverse, and often complex and dynamic realities of people in poverty created by asymmetric North-South and urban-rural power relations. "Putting the last first" (i.e. starting with local realities) aims to disrupt the dominance of northern knowledge in defining development possibilities, enabling "otherwise marginalised people to exercise greater voice and agency, and to work to transform social and power relations in the process" (Gaventa and Cornwall 2015, p. 468). Thomas and Narayanan (2015) distinguish the disruptive, subversive potential of participatory methods from the participatory components found in many large-scale interventions. Johnson and West (2018) have pioneered new approaches for the participation of children, as applied to understanding education-related contexts. Teamey and Hinton (2014) explore the transformative potential of participation and learning.

There is a broad continuum of what constitutes participation in these approaches, from the use of engaging and creative methods so that participants decide on how and what they will reveal about a phenomenon, to participants deciding on the research questions and how they will be studied. Participatory methods can also be used in collecting quantitative data (Holland 2013). A key criterion of the quality of such an approach is the extent to which it is responsive to, and incorporates, the active participation of those who are affected by and involved in the issue under study. The field of evaluation has developed many variations of participatory evaluation, starting with the early work of Robert Chambers (1990) and evolving to include more recent forms of democratic evaluation, appreciative inquiry, and others. Norton, et al. (2001) offer advice on how to conduct participatory assessments. Researchers working from a decolonizing perspective of knowledge production (see, for example, Tuhiwai Smith 2013) have developed principles and processes for undertaking community-engaged research that are relevant to the needs of local

communities without imposing dominant knowledge structures on them.

Ravitch, et al. (2017) provide an example of a participatory action research project and the principles that underlie its community-school partnership program in Nicaragua. Participatory action research "seeks to understand and improve the world by changing it. At its heart is collective, self-reflective inquiry that researchers and participants undertake, so they can understand and improve upon the practices in which they participate and the situations in which they find themselves. The reflective process is directly linked to action, influenced by understanding of history, culture, and local context and embedded in social relationships."[16] Drawing on the involvement of different stakeholder groups in the program, the authors reflect on the process participants use to develop and operationalize the program; the challenges they experience when co-constructing capacity; and how designing and implementing the program was a learning experience for participants. Setlhare, Wood, and Meyer (2017) describe using participatory action research to understand and support the career development of teachers in under-resourced settings in South Africa. In this case, they analyzed teachers' written reflections during the group discussions of a career counseling program, transcripts of those discussions, and teacher journals produced during the training. Findings suggest that as the program progressed, teachers identified personal and professional assets and further developed strategies to stay motivated during challenging times. The research also showed how participants developed greater agency for career and personal goals, as they designed future life maps and explored pathways for collectively improving their support to learners.

2.2.8. Critical discourse analysis

Critical discourse analysis corresponds to the linguistic analysis of documents and texts with a focus on the discourses—the ideas and language used to shape meaning and practices. Critical discourse analysis is particularly useful in examining taken-for-granted or everyday ideas as they take on new and different meanings across groups, time, and spaces (see Gee 2014; Fairclough 2013). Using this methodology, a policy as a discourse can be analyzed in terms of how it is intended to be implemented and its desirable effects, as well as how it is implemented, and the effects it generates.

Vavrus and Segher's (2010) analysis of meanings of participation as used in government policies in Tanzania is an example of critical discourse analysis. The authors use a semantic (text and meaning) analysis and apply it to official documents related to poverty reduction strategies in different moments of time. They comb the texts for specific keywords ("partnership" being the main one) and document how these words appear (the semantic relation), for example, in relation to a problem/solution sentence. They compare if the terms are ascribed the same meaning across documents in order to reflect on common or divergent understanding of what partnership means. Vavrus and Seghers (2010) found that partnership is used to refer to external partners but not to communities and that when communities are mentioned, they are mentioned in a passive and less equal role (e.g., "communities participate").

[16] Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2566051/.

2.2.9. Critical realist evaluation/research

Finally, a critical realist evaluation methodology focuses on causation and outcomes. But it does so from an acknowledgment of both objective and subjective perspectives of reality, aiming to account for both social structural forces and human constructions as they influence outcomes (see Pawson 2006, 2013; Maxwell 2012; Fletcher 2016). From an interpretivist epistemology, this approach recognizes that causation—for example, the link between an anti-poverty policy and the achieved outcomes of that policy (lower poverty rates)—is constructed by individuals and communities. From a realist perspective, beliefs, values, and reasons have causal consequences (Maxwell 2012). Critical realism is particularly useful in studying complex educational programs or outcomes as it pays attention to the complexity of these processes within particular contexts. It focuses on identifying the mechanisms that connect a program with an observed outcome and which mechanisms help or hinder that outcome.

Before moving to a description of methods for qualitative data collection, Table 2 provides a general overview of the types of questions qualitative research approaches can be used for, covering *what, how,* and *why* questions (as the *where* is always present in qualitative research given its context-focused stance). It shows the different methodologies discussed here that can be used to answer these questions.

Table 2: Examples of questions that can be answered with qualitative methodologies

What we need to know	Why we need to know this	Examples of methodologies and approaches that can be used
What are the antecedents or underlying causes of the educational problem? (Why is there a problem?)	Without knowing the antecedents and underlying causes or mechanisms that give rise to an educational problem, the policies or interventions may not address them, address them only partially, or address the symptoms but not the conditions.	▪ ethnography/critical ethnography ▪ community-based participatory approaches ▪ historical and policy analysis ▪ critical discourse analysis
What are the contextual conditions that affected the implementation of the educational program?	Educational program effectiveness is often assessed based on assumptions of the fidelity of implementation. Research into the contextual conditions and implementation processes can reveal whether and how this has been done.	▪ historical and policy analysis ▪ qualitative longitudinal research ▪ case studies ▪ ethnography
What unexpected outcomes occurred as a result of the education program?	Beyond the stated or pre-defined outcomes of educational programs/interventions, and assumed spillovers, additional positive and negative unexpected outcomes can be	▪ qualitative longitudinal research ▪ community-based participatory approaches

What we need to know	Why we need to know this	Examples of methodologies and approaches that can be used
	present.	▪ case studies
How do participants (e.g., teachers) understand/enact a new teaching approach?	Even if a new approach is found to improve learning, we may not understand how it is regarded by those who implement it or how they implement it to achieve the results it has.	▪ phenomenology ▪ narratives ▪ qualitative longitudinal analysis
How do different contextual, implementation, and/or individual factors affect learning outcomes?	Even if we research the impact of an educational program/intervention through quantitative methods, we do not often have sufficient data to explain the processes that affected the outcomes.	▪ case studies ▪ ethnography ▪ qualitative longitudinal research ▪ critical realist evaluation
How does the new education program affect students differently over time? And when?	Because educational processes and learning are dynamic and contingent, students are affected differently by interventions or practices at different times. Longitudinal/time-series quantitative methods can provide answers to this question, in part, but the nuances of when and how students are affected by a program can also be revealed through qualitative data.	▪ qualitative longitudinal research ▪ ethnography/life histories
Why is an educational program effective in one context and not another?	With policy and program borrowing a common practice in education, it is important to understand under what conditions programs have been effective or when/how they are not.	▪ critical realist evaluation ▪ case studies ▪ ethnography

Section 3: Methods in qualitative research

A range of methods is used in qualitative research, and these methods are usually categorized as interviews, documents/artifacts, and observations (Patton 2002). More recent research has also included social media artifacts. In addition, products of participatory, visual, and art-based methods can also be used for qualitative research. In all cases, these methods can be used to

produce either quantitative or qualitative data, but they are distinctively qualitative when they are designed, following the purpose of our research questions, in a semi- or unstructured manner and produce open-ended forms of data. Moreover, the methods can be used individually or in different combinations, depending on the methodology guiding the study.

More detailed descriptions of these methods are presented in the following pages, including the type of data associated with them. However, as before, these descriptions are not exhaustive and instead focus on the attributes of these methods that can help guide decisions about when to use them in qualitative education research.[17]

The four categories of methods discussed here can be used within the different approaches and methodologies for data collection (previously discussed), and the data they produced can fit different analysis approaches discussed below. The types of methods used to answer the research questions vary in terms of the key participants in the study, the time required for data collection, and the depth of interaction in the field, among other factors.

3.1. Interviews

Interviews include a broad set of methods used to gather data through a conversation about people's lives, experiences, perceptions, opinions, feeling, and knowledge. They produce data in the form of conversation transcripts.

In general, the main goal of interviews is to capture the individual experience and perspectives on events. The assumption is that the participant is knowledgeable and his/her perspectives meaningful. There is also an assumption the participant can make articulate and make explicit his or her perspectives. Interviews are particularly appropriate when the subject matter is highly complex or sensitive, when detailed information is needed, and when a process of progressive exploration may be beneficial. However, it is important to keep in mind that the interviewing process is one that is always mediated by the interviewer/researcher, which can affect what people choose to talk about and share.

There are several different types of interviews, and they align with different purposes and methodologies. Of these types, the most frequently encountered types include individual and group interviews (these latter include focus groups); unstructured-structured; single-multiple; and informal-formal (see Patton 2002).

3.1.1 Individual and group interviews

Interviews can be conducted with individuals, small groups, or larger groups. One-on-one interviews may make people more comfortable sharing their thoughts or ideas, especially on sensitive topics, e.g., violence or gender discrimination. They are also appropriate when the presence of others might affect the answers provided. Interviews can elicit deep narratives about the phenomenon being studied.

Small group interviews may be useful when it is either a common practice to sit with someone else you know when being with an unfamiliar person (e.g., a researcher) or when there is a relationship

[17] Several guides explain in more detail the uses of these methods in qualitative studies: Mack, et al. 2005 and Hassler, et al. 2008 for the RECOUP manual on qualitative research skills workshop, among others.

or shared experience between members of the small group that can prompt responses to questions. Large-group interviews tend to focus on getting a group's shared thoughts or reactions to questions; the individual perspectives are less the focus of analysis.

Focus groups or focus group discussions (FGDs) are a related but distinct form of interviewing a group of individuals. In terms of their use vis-à-vis group interviews, researchers suggest a couple of situations in which focus groups make sense: when the research aims to gather information from a group of people that share some common characteristics and seeks consensus about a particular topic (Krueger and Casey 2014); or to foster a dialogue that allows for diverse perspectives from individuals and the collective to be revealed (Barbour and Kitzinger 1998). In general, focus groups capitalize on group dynamics. They are best used when a single subject area is being examined in-depth and strings of behaviors/thoughts are less relevant. Table 3 elaborates on the differences between group interviews and focus groups.

Group interviews, irrespective of their form, are affected by interpersonal dynamics, including power relations between participants, regardless of their previous knowledge of each other. The degree to which these dynamics are a logistical issue or a focus of analysis depends on the epistemological stance taken in the research.

Table 3: Distinctions in using group interviews and focus groups

	Group interviews (small)	*Focus groups*
Purpose	Practical: Ease of interviewing more than one person or because it is culturally appropriate to not be alone in an interview. Benefit: The purpose is to analyze the group's conversation and how participants relate to each other and to gather multiple perspectives on the issues discussed.	Benefit: To have a discussion around a common topic where group participants have a relationship or experience with the topic; used to gather views and opinions (similar and different) on the topic.
Role of the interviewer	The interviewer directs questions to each person and seeks their responses.	The interviewer facilitates the discussion (presents a question to the group and ensures voice to all participants).
Participants	Two to four participants, usually friends or related members (such as a young girl and a sibling or classmates).	6-10 participants from a homogenous group related to the topic under study (e.g., teachers in a school).
Sample	Based on the total number of individuals to be interviewed (doing group interviews does not necessarily	Based on the number of groups conducted (as they are organized in relation to specific shared

	Group interviews (small)	*Focus groups*
	reduce the number of participants to be interviewed).	characteristics).[18]
Recording and analyzing, quality of data	Data can be audio recorded or notes taken; care should be given to who is speaking and answering each question so analysis of individual responses can be done, or conversational between individuals can be analyzed. The quality of the data depends on the interviewer's focus on each member and also on how they direct the flow of conversation to respond to the questions.	Data may be audio/video recorded, though this can inhibit comfort in sharing views in a public space. Audio recording is more acceptable when verbatim transcripts are needed. Video recording is often not encouraged due to confidentiality and privacy concerns related to the individual's participation. Notes are taken by a notetaker, but it can be difficult to distinguish who the different speakers are. The analysis focuses less on what specific people say than the overall opinions or ideas shared as a group. The quality of the data may be lower than individual or small group interviews as individuals may speak less in this format.
Organization, time, and costs	Small group interviews may slightly reduce time and cost, but the focus is on identifying relevant participants and having them respond to questions. Small groups may facilitate some participants to feel more comfortable or respond more readily.	Focus groups should be organized in relation to homogeneous groups within the community. While many researchers perceive they can gather more data in a smaller amount of time and less cost, focus groups can take considerable time if all group members are facilitated to participate.

[18] As a rule of thumb, less than two focus groups for each category identified as needed in the sample (e.g., primary educated adults, secondary educated adults) is not advisable.

3.1.2 Unstructured to structured interviews

Interviews can take three forms: (1) unstructured, (2) semi-structured, or (3) structured, which differ in the extent to which the questions are unplanned, focused around key themes or questions, or fixed in advance. This choice will be defined by the research methodology and purpose. Generally, qualitative interviews always include open-ended questions (not closed-ended responses that are then categorized or quantified, though researchers may decide to quantify some qualitative data later).

If a study's purpose is to do a comparative analysis of participant experiences in a program, then the questions should be consistent (structured) across participants. But if the study's purpose is to understand why a program succeeded in one site but not in another (comparative case study), then different questions may be posed to understand the various processes or causes related to the program's success or lack thereof.

Ethnographic and life history/narrative studies tend to be more unstructured as they follow emerging themes relevant to the study. Qualitative longitudinal research (using repeat interviews over time) may require a combination of more and less-structured interviews, in which similar questions are asked of all participants in order to follow changes in the phenomenon over time. Different questions may also be asked of participants when following their narratives development overtime to capture change or continuity.

In general terms, a structured interview will follow a protocol to ensure all questions are answered (and asked in a similar way). Semi-structured interviews will follow a looser protocol in which themes and sub-themes are identified, but where probing—encouraging respondents to elaborate on a topic—might or might not be needed to elicit all data and where there is the flexibility to inquire about new topics or issues.[19] Unstructured interviews depart from a general plan regarding the focus and goal of the interview; but, instead of relying on an organized interview guide, they are based on open-ended guiding themes.

3.1.3 Single or multiple interviews

Another consideration when conducting interviews is the number of interviews/conversations that will be carried out with the same participants in order to answer the research questions. Single interviews are best used to gather data about a phenomenon that is limited in scope and time, such as a participant's perceptions of an educational program at a specific time. Qualitative longitudinal studies are designed to carry out multiple waves of data collection, and the number of interviews and the length of time between them depend on the kind of change that is being explained. For example, if a study seeks to understand language development among young children, more frequent forms of interviews/data gathering may be needed to see the nuances in the change in

[19] Kvale 2008; Rubin and Rubin 2012; Seidman 2013 all are helpful guides to developing interview processes, including the stance of the interviewer, developing questions, and considering probing questions.

language. If a study is trying to understand secondary students' aspirations post-schooling, then the timing of these interviews may be spaced across the secondary years and several years post-schooling. Ethnographies tend to involve multiple iterations of interviews/conversations in part to home in on the explanatory nature of what is being studied. Similarly, life histories may also involve multiple interviews.

In any study using interviewing, it is a good practice to plan for follow-up interviews/conversations, particularly if there is an incomplete understanding of what is being studied or a need to clarify contradictory statements or evidence. Follow-up interviews also allow for longer conversations.

3.1.4 Informal to formal

A common way to distinguish the types of interviewing is along a continuum from informal to formal. This continuum refers to how the researcher positions her/himself in relation to the participants, and thus it affects how questions are asked and the non-verbal communication in the conversation. This continuum also reflects different epistemological views (about objectivity, subjectivity, and inter-subjectivity) about data gathering.

Informal interviews tend to be spontaneous and akin to a conversation between two (or more) people. They are less rigid and can, therefore, be helpful in building rapport with respondents and capturing quick impressions on a phenomenon (e.g., opinions of adults when seeing small children out of school on a school day). Formal interviews, on the other hand, are planned and prepared, with clearly defined roles between researcher and participants. These can follow informal interviews or come before them. For example, interviews conducted in ethnographies—where relationships are established in the context—can vary in their degree of formality depending on the specific discussion at hand. Life histories may depart from a more formal setting, but as the conversation progresses, informality may be necessary to explore the intricate details or develop as the participant and the researcher repeatedly interact and converse.

The degree of formality might also be related to the power the interviewer has in a given social structure or institution. For instance, interviewing a government official, someone who has a leadership role, or is in some way considered "elite" may require some level of formality (e.g., setting appointments, sharing the interview questions or research purpose beforehand, or undertaking more detailed preparation). Significantly, the type of responses provided might be affected by such power, and interviewees at both ends (the elite and non-elite) might have different considerations when providing answers to interviews that can be recorded, published, or considered part of the public record.

3.2. Observations

Another common method for collecting qualitative data consists of *direct observations* and the *collection of visual data*. Observational research captures interactions within a context (e.g., among people; between people and their environment; people engaged in a process), allowing the researcher to learn about things people may be unaware of or might be unwilling/unable to discuss in an interview or focus group. Observations are a tool to collect information about the setting and physical environment of a program and to document how participants (such as teachers and students) interact with each other or toward a process (e.g., how are teachers implementing a new curriculum in the classroom).

Observations consist of recordings and images of activities, behaviors, actions, interpersonal interactions, and processes as they are observed. These data may take the form of written field notes with rich descriptions and/or drawings, images, and photos, including video recordings (see Box 3 below for an example of an observation description). Representations of these data in reports include detailed descriptions and visuals that illustrate the actions and interactions, as well as the contexts of the study. Observational data can also be categorized along a series of continua, again depending on the purpose of the study and the methodology used. Several continua to consider are the role of the observer, the duration of observations, and the focus of observations (Patton 2002).

3.2.1 Role of the observer

The role of the observer varies, ranging from an active participant in the observed activity/event to a remote observer. For example, in ethnographic studies the researcher is involved as a participant observer, meaning he or she is engaged in the activity or setting being observed (to an extent). Typically in such a case, the research speaks the local language, reducing the complications of translation. An additional benefit of participant observation is direct 'first-hand' experience for the observer, as well as the flexibility to engage in other forms of data collection, such as conversations with participants to clarify or better understand what is being observed. Long-term residence in the community being studied leads to deeper relationships and trust, which are likely to lead to more open communication (Brewer 2000). There are, however, risks involved. First, the study focus can become limited to what the researcher is able to take in as a participant (e.g., optimal locations for observing may not be optimal for participating, it may be more difficult to take notes, the researcher's attention is on respectful participation so phenomena may be missed). Second, the presence of the researcher might alter the interactions that take place, potentially rendering the observation less useful. An experienced anthropologist will report on the potential distortions and limitations of their viewpoint through a process known as reflexivity (Brewer 2000).

On the other hand, non-participant observations, where the researcher is present but not interacting with the environment or situation, are frequently used in case studies or when documenting the implementation of a policy or program. In education research, video or audio recording activities and conversations in a setting are commonly used so that researchers do not have to be physically present to observe. Video recordings are less disruptive and mitigate the disadvantage of participants adjusting their behavior due to the presence of a human observer, though the presence of a video camera can still change interactions and what is said. Furthermore, recording devices are unable to capture contextual information that might be relevant when analyzing the data collected. A given qualitative study may use participant and non-participant observation (or a combination) and potentially in conjunction with other methods.

3.2.2 Duration and frequency of the observations

The duration of observations (the time spent observing) and the number of observations depend on the purpose of the study. For a specific case study focusing on, for example, the enrolment process in a school, short-term observation of that process or even a one-time observation might be sufficient. For a case study focusing on the differences in the enrolment process for students from different ethnicities in a given school district, multiple observations (across schools) or longer

observations (as parents from different ethnicities appear to enroll their children) might be better. There is no given rule on either the duration or number of observations. Studies spanning a long time period, such as ethnographic studies or qualitative longitudinal studies, are more likely to involve multiple or repeat observations, though, again, it depends on the research question.

3.2.3 Focus of the observations

Finally, the focus of the observation needs to be considered in line with the research purposes, especially since sites observed in educational settings (e.g., classrooms) are frequently busy and unpredictable. Defining the focus ex-ante in line with the research objectives and the chosen methodology will tend to produce observations with a very specific focus. For example, in the OECD video study of teacher pedagogy, the focus is narrowly defined to capture the teaching practices and students' classroom learning in a single type of lesson across school systems that vary in their classroom settings, pedagogical traditions, system-level policies, and student achievement level (OECD 2018).

On the other hand, a more holistic approach allows the research to follow emergent issues of relevance. Barbra Bruns has developed methods of classroom observation to capture a wide range of data, enabling investigation into different aspects of teaching and learning (Bruns, et al. 2016). This makes an iterative approach possible, where issues not thought to be of significance at the outset may be analyzed as a clearer picture of the areas of interest emerges. This is in strong contrast to many quantitative approaches, where departing from predefined research parameters and selected informants is seen to compromise validity.

Box 3: Example of an observation description

Similar to Ms. Robinson, Ms. Davis also used negotiation and transfer of responsibility to help students learn and then gave them opportunities to demonstrate their understanding. In the following lesson, Ms. Davis (T) guided a student who was having difficulty factoring 100. She gave hints and then asked the students (S) to explain to him why he should follow certain procedures.

T: [to Aaron] Try it this way. Factor each of these numbers. Okay, now you've got it. [Aaron still appears confused.]

T: You're a good sport, aren't you? Yes, sorta [the teacher saying what Aaron may be thinking]. Help him out here [directed to the students in the class]! What does he need to do? Is 4 a prime number? How many factors do we need?

S: There's two factors.

T: Help him out here, did he choose the right factors [to the class]?

T: Oh, it should be a 2 there. $2 \times 2 = 4$. . . . How about the 25? Marie?

S: You need to put another line under the 25.

T: Because?

S: It's not a prime number and you need two factors. . . .

Source: Turner, et al. (2002) pp. 100

3.3. Documents/artifacts

A further type of qualitative data are documents and other textual data and artifacts. Documents consist of both written and digital materials, including policies, official publications and reports of programs and organizations, and personal written works of participants, including educational tasks, written exams/essays, diaries, and stories. Artifacts are material objects that help explain the phenomenon under study, including tools or materials used in teaching, works created by students/participants, or household or work/livelihood objects that are being studied.

The main goal of using documents and artifacts as data sources is to gain information from naturally occurring, accessible data that have real effects in the world. Artifacts represent reality beyond what people say about it. Documents and artifacts are particularly advantageous in that they are generally readily available, unobtrusive to obtain, and stable. At the same time, they have a disadvantage in that they may lack sufficient detail to address the research questions, and there is selectivity in terms of what is being put into a document and what is being left out (Bowen 2009). Document selectivity might stem from considerations such as length and type of language used) as well as active decisions regarding exclusion or lower visibility of some groups or issues.

Artifacts add a dimension to understanding a phenomenon, and they can be particularly useful when used in relation to what people say about the artifacts and their meanings and uses.

In recent years, documents and artifacts have become easier to use and access, as documents are digitized and artifacts are documented using digital means (e.g., photo or video recordings in online archives or on social media). In addition, documents or artifacts produced by participants of a study are increasingly used as an additional source of data to complement interview or observation data in an effort to triangulate (cross-verify findings using data from two or more sources).

Document and artifact analysis is the primary method for undertaking historical and policy analysis, although other methodologies also rely on documents to provide additional evidence. For example in Dryden-Peterson and Mulimbi's (2017) study of Botswana's use of educational policies to address (or not) ethnic conflict and how policy documents reflect those discourses, the authors analyze a set of Botswana's post-independence policy frameworks, including the National Policy on Education, a report of the National Commission on Education, and the National Development Plan its midterm review, among other documents. The study also looks at school syllabi at different moments in time to understand the implementation of the discourse ideas and statements and their translation into educational content.

One example of using documents produced by the participants is found in Bajaj's (2009) study of students who attended different kinds of secondary schools in Zambia. Bajaj used student diaries along with group and individual interviews. Participants' entries were structured with different assignments, such as writing about their families, communities, and aspirations, with the objective of capturing how an alternative pedagogy and school structure affected students' sense of agency. The diary analysis provides the main categories for the report (e.g., receiving advice from teachers, affective relations in the school), which are then complemented with information from interviews. Bajaj (2009) finds that the alternative school structure and pedagogy enabled transformative agency, but that students had to renegotiate their agency upon graduation given structural constrains in broader society.

3.4. Participatory and arts-based research methods

The main goal of participatory methods is to involve the participants as co-inquirers or co-researchers, allowing their voices to be the dominant ones and enabling them to reflect on the process of generating data on their experiences and their everyday knowledge (Reason and Bradbury 2008). These methods are particularly useful in life histories/narratives and critical ethnographies. Researchers who take a critical and decolonizing approach to knowledge production use these methods to elucidate knowledge from perspectives that might not be visible through other methods.

Based on the participatory goal of the study, participatory methods are flexible in how data are produced and collected, as they need to be appropriate to the concrete research situation and goals. Generally, participatory methods involve the co-researchers (or participants) in actively generating and using visual and performative methods of data collection. Data may be visual products created during data collection activities (e.g. drawings) or performances (e.g. skits acting out personal experiences or beliefs).They are also commonly used to engage children and youth who can be less inclined to talk in interviews or participants with limited verbal expression skills or when trauma or sensitive topics mean that an interview would be uncomfortable or even unethical.[20]

Photovoice methods, where participants use cameras to take photographs of people, contexts, or situations they consider representative of the aspect of their life (or the life of their community) related to a research question, allow participants to define where attention is to be placed and what is to be observed and interpreted. One example of the use of such a method is Ciolan and Manasia's (2017) research on undergraduates' understanding of learning and learning strategies. In their case, photovoice methods are used to explore the daily experience of learning. A group of volunteer undergraduates across fields of study and universities received training on how to use photovoice methods ethically to photograph objects, people, and situations that represented the way they learn during one semester; they also wrote short narratives to accompany the learning experience represented in the picture. Training participants on the photovoice methodology led to stronger awareness and self-reflection of the students' own learning processes.[21] Participants were involved in analyzing data, deciding which photos taken by the group were most representative. Findings point to the importance of students' own experiences due to qualitative and hierarchical differences in learning processes that the prevailing theories did not predict. The study also highlighted the role of digital devices and distractions in re-defining what self-regulated learning can be.[22]

Arts-based methods employ creativity to encourage the expression and sharing of perspectives, emotions, and ideas. Such methods draw on literary/creative writing, performances (theatre, dance) and visual art. These methods ask participants to draw, write, or act out a story, either alone or in a group, that relates to the phenomena or question under study. Participatory and arts-based methods both can be used within a range of paradigms, including for purposes such as understanding participants' interpretations of the world or the phenomenon under study (interpretive); including perspectives which are usually excluded from research (critical); and challenging and critiquing assumptions and norms of the phenomenon under study

[20] Crivello, Morrow, and Wilson (2013) document a large set of tools used with children during the Young Lives qualitative data collection, as well as tools used by other researchers, ranging from community maps where children could draw or mark specific issues (e.g., where do they feel at risk) to drawings on specific issues, activities representing their use of time, etc.

[21] Training is a frequent element of participatory methods, and it is seen as a capacity-building and development part of the empowerment process related to the production of data.

[22] Wang and Burris (1997) provide additional information regarding photovoice methods, and Mark and Boulton (2017) provide an example of adapting photovoice so Maori participants to share how they experience health services.

(deconstructive) (Leavy 2015).

One of these methods, popular or participatory theatre, calls for participants to be both the writers and actors of a play, providing insight into their knowledge and experiences. Popular theatre engages participants in generating, interpreting, and representing their ideas and views of the world. For example, Mabala and Allen (2002) relate the process and outcomes of participatory theatre research in four districts of Tanzania, as part of an effort to reduce youth's risk of HIV infection. A male and female artist in each district were trained by the research team, affiliated with an arts college and theatre company. These artists, in turn, trained and supervised small groups of youth in community theatre. They collected observations and interview data on problems related to sexuality and HIV/AIDS and other social problems community members that contribute to HIV transmission. The teams reflected on this data to produce dramatic performances, which were presented to the surrounding community during rehearsals and at a district theatre festival. The themes highlighted and structured by the performances, as well as audience input, generated frank and sometimes contentious discussions. Community theatre specialists, along with district officials carried out follow-up meetings and evaluations which guided the development of new programs and policies.

Section 4: Analysis approach—the final step when conceptualizing a study design

Once a researcher has identified the research purpose, tradition, or paradigm, the research questions, and the context or community in which the study is to be carried out, he or she can define the methodology and methods and fine-tune the entire design. As discussed in previous sections, the purpose, framing (within a paradigm), research questions, methodology, and methods are foundational elements of high-quality research design. Operationalizing this design requires thinking about the logistics of data collection protocols, sampling, and data storage. Both logistical considerations and a study's design elements critically shape how the **analysis approach** is defined.

Analysis approaches are, simply put, the processes for making sense of the data in order to answer the research questions. They should be aligned with the purpose, methodology, and methods. As an example, Figure 4 provides a flow chart of the connection between a study purpose and analysis approaches.

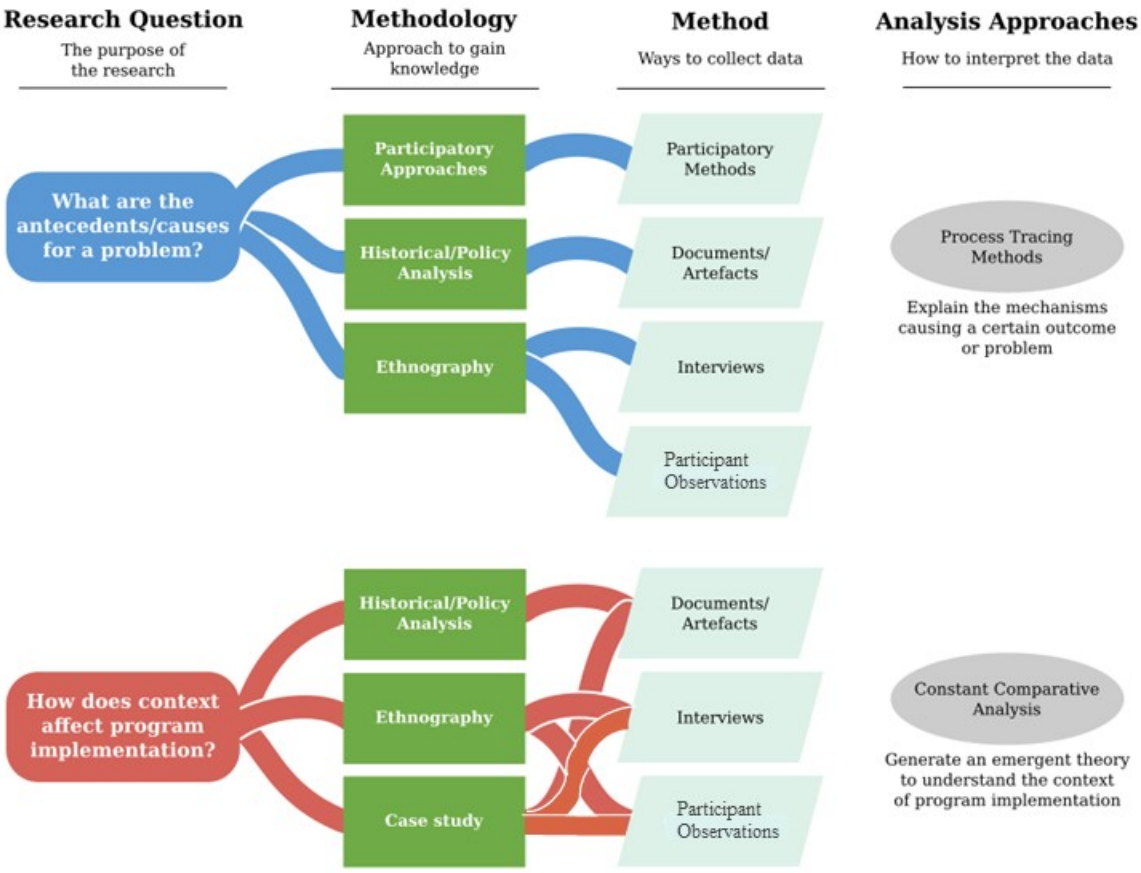
This note discusses five analysis approaches that align with different methodologies discussed earlier. These approaches include (1) content and thematic analysis, (2) constant comparative and/or qualitative comparative analysis, (3) process modeling and contribution analysis, (4) qualitative longitudinal analysis, and (5) critical discourse analysis.

4.1 Content and thematic analysis

Content and thematic analysis are among the most frequently found analysis in qualitative research. Both content and thematic analysis approach an investigation as a discovery of trends and patterns. Content analysis focuses on terms, words, phrases, or concepts and their frequency and relationships—that is, what is said and how is it said. Content analysis is often used as a quantitative approach to qualitative data, which involves coding the frequency of words, phrases, or concepts. A qualitative approach to content analysis aims to identify the sub-categories or meanings associated with categories of words/concepts (for additional details on the analysis [Elo and Kygnas 2007 and Fereday and Muir-Cochrane 2006]). Thematic analysis aims to identify patterns within the data and create from these patterns categories of analysis (Braun and Clarke 2006 and Bowen 2009). The content analysis approach is also one of the initial steps of discourse analysis, in which researchers identify the frequency of words used across textual sources and analyze meanings associated with these words or concepts.

Thematic analysis is used to identify patterns within the data, with emerging themes becoming the categories for analysis (see Bowen 2009). In the process of analyzing and coding, the researcher asks the question: How are the themes in this text similar to, or different from, preceding texts? The process involves a careful, focused reading of the data. The researcher carefully applies codes to the data. Bowen (2009) provides a detailed description of using thematic analysis of documents.

Figure 4. Conceptualizing a study: example of the connection between the research question and analysis approaches

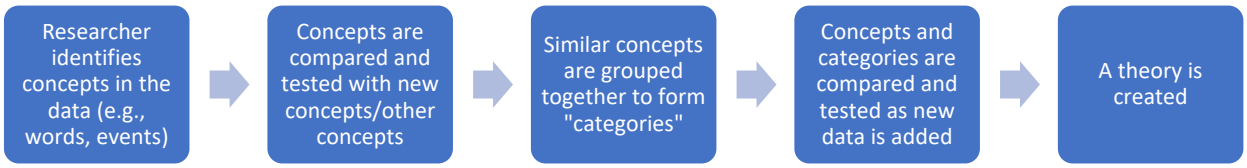


Source: R. Bamattre, 2018, University of Minnesota

4.2 Constant comparative analysis

Constant comparative analysis is most often associated with **grounded theory,** and it is also used in ethnographic or case studies (see Corbin and Strauss 1990). In grounded theory, a constant comparison of concepts in the data is undertaken to generate an emerging theory. For example, in case studies, constant comparison, or the related approach of qualitative comparative analysis, may be used to provide explanations within and between cases. Grounded theory is a process where there is a constant iteration to compare and contrast, so the theory emerges from the data, not the other way around. Please see Figure 5 for more details.

Figure 5: Iterations of constant comparative analysis



Source: Based on the process described by Frost, et al. (2010)

This type of analysis can help answer questions about the context and implementation of education programs; it can also be useful in comparing antecedents and outcomes in different contexts. For example, Wang (2011) identifies gaps in the evidence base on the difficulties of implementing student-centered teaching reforms. While many studies focus on materials, teacher training, or assessment, this study examines how a reform in rural China may have impacted teachers' experiences of lesson time and their pedagogical decisions. Through unstructured interviews, lesson observations, and participant observation, Wang (2011) began with teachers' perceived problems of teaching rural students and identified contradictions between curricular expectations and the preparedness of students, which led to lecturing, not as reluctance or failure to adopt new methods but as a strategic form of "defensive teaching" (p. 5). In another example, Kirchoff and Lawrenz (2011) provide a detailed description of their coding and analysis within a grounded theory approach, in which they iteratively sought additional participants and data to confirm (or disaffirm) the model of teacher retention in high-need contexts. Figure 6 below shows how they create the "support" category, based on the initial questions, and the codes used to identify answers to those questions in the text of the interviews.

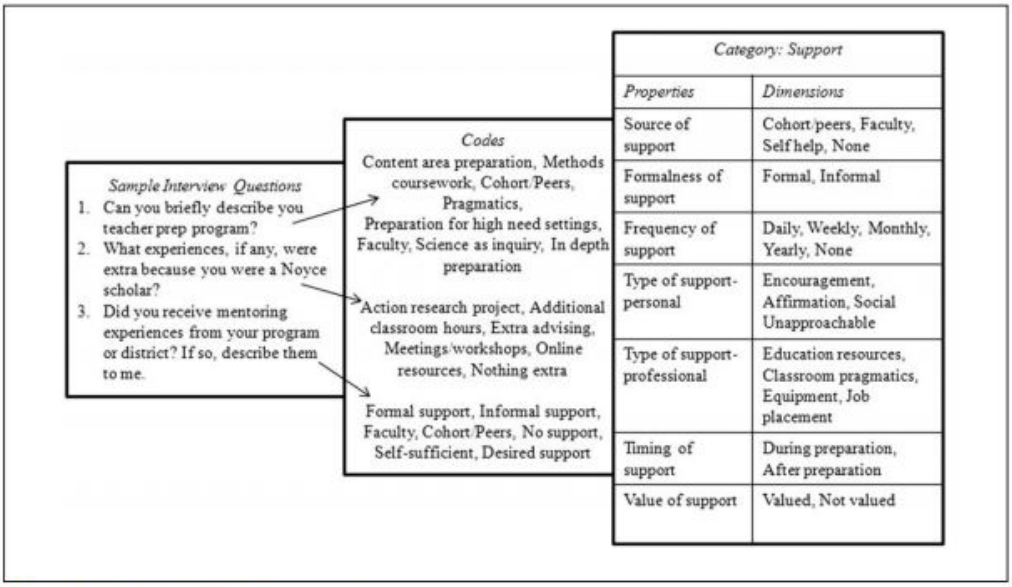
4.3. Process tracing and contribution analysis

Process tracing and contribution analysis approaches are not as commonly used in education research but are gaining recognition—particularly as approaches that aim to show correlation in qualitative and mixed-methods studies (see Ragin 2014 and Maxwell 2012). Process tracing and contribution analysis are methods designed to explain the mechanisms, or interacting factors, in a given situation that can result in particular outcomes. Both approaches require a theory of change to explain the processes and desired outcomes. The aim is to look for evidence that increases our confidence in the existence of causal mechanisms by comparing the evidence for the theory of change with evidence of the existence of alternative mechanisms (see Befani and Mayne 2014 for details on both contribution analysis and process tracing; see also Bennett 2016).

These analyses can be used to answer questions related to the conditions and mechanisms that affect implementation and outcomes; they can also help answer questions about whether an education program can be effective in different contexts. Process tracing and contribution analysis can be particularly useful in historical and policy analysis, critical realist evaluations, case studies, and qualitative longitudinal research. For example, Dryden-Peterson and Mulimbi (2017) describe how process tracing was used to analyze policy documents, among other data, over time in order to explain whether and how a specific set of educational policies resulted in a reduction of conflict

or whether there were alternative explanations for this outcome. Le Fanu (2013) also uses this analysis when looking at the rollout of a new inclusive education curriculum in Papua New Guinea, by tracing the elements that generate a disconnection between the plan and the practice. Le Fanu looks at different elements (e.g., perceptions of the nature of the education system) that may create challenges in implementing the curriculum and its inadequacy for the Papuan context.

Figure 6: From questions to categories using grounded theory. An example.



Source: Kirchoff and Lawrenz (2011)

4.4. Qualitative longitudinal analysis

Qualitative longitudinal analysis considers how time relates to data and how the data show change or continuity of the phenomenon under study. Saldana (2003) suggests that the key framing questions for such analysis are: When do changes occur through time? What contextual and intervening conditions appear to influence and affect participant changes through time? And what are the dynamics of change through time? A critical question in longitudinal analysis is to decide the length of time and the number of waves of data collected in order to answer questions of how time matters for a particular phenomenon. This analytical approach is particularly useful in answering questions related to unpredicted outcomes from an educational program (spillover effects), and whether and how those outcomes affect students over time and for which students.

For example, Morrow and Crivello (2013) provide a rich discussion of analyzing qualitative longitudinal data for the Young Lives study over four waves of data collection, following two cohorts of youth in four countries. In one example, they follow the story of a girl leading up to her early marriage in Ethiopia, who was interviewed four times between 2007 and 2014, and find that continuous and compounding experiences of food scarcity, illness (personal and family), and the difficulties of balancing work and school are connected to her early marriage and her school

dropout.[23]

4.5. Critical discourse analysis

Critical discourse analysis is an analytical approach that aims to deconstruct language and how it is used to perpetuate or create existing social and political structures of power. There are different approaches to critical discourse analysis (see Gee 2014 or Fairclough 2013), but they all focus on conducting close analysis of the linguistic features of discourse or documents, and how these discourses are taken up and used by others, as well as how these discourses are connected to larger social and political practices that reproduce power inequalities. Critical discourse analysis can be particularly useful with critical policy analyses; it also can be used with analyses of narratives or in historiography.

For example, DeJaeghere, et al. (2013) conducted a review of policies and texts related to ethnic minorities and education, using selected policies and governmental decrees written and enacted from 1945 onward in China and Vietnam. The analysis looks at both the content as well as the intention of the documents and the contexts within which the policy documents were written and used. The authors find that ethnic "differences" and inequality are constructed similarly in these two societies in relation to both Marxist-socialist ideology and a market-economic ideology. An example of meanings associated with ethnic minorities is illustrated in their analysis of the emergence of the 56 ethnic categories recognized by the Chinese government. They find that these categories are a result of a centralized process taken by the government starting in the 1950s, which used specific criteria to merge the more than 400 ethnic groups into an official list of 54 (which then was added to, taking the total number to 56, including the Han). They also find that policy texts through time refer to ethnic minorities as backward or un-modern, which leads to policies focused on economic redistribution (e.g., boarding schools) but silent on status recognition. Educational initiatives such as bilingual education are also linked with a discourse that positions ethnic groups' social status as inferior.[24]

[23] Other examples of longitudinal qualitative research include McLeod and Yates' (2006) book Making Modern Lives: Subjectivity, Schooling, and Social Change, which reports results of a study that followed secondary students through their schooling, and into their first year after school, to examine their trajectories and biographical development, and Bamattre, et al.'s (2017) study on the Learn, Earn, and Save Initiative.

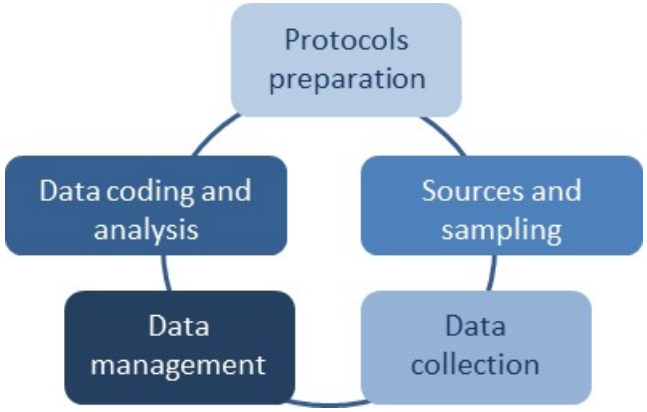
[24] Vavrus and Seghers (2010) example presented earlier in this note is also for an example of using critical discourse analysis with policy texts, when they analyze the use of the term partnership in public documents in Tanzania. Souto-Manning (2007, 2014. among others) has focused on critical discourse analysis in education, with a particular focus on ethnicity and inclusion.

Section 5: Implementing rigorous qualitative research

As with any data collection effort, good implementation of qualitative fieldwork and sound data management are critical to producing a high-quality study. Regardless of the amount of data to be collected, careful planning is central to qualitative research. As previously discussed, qualitative research design is an iterative process that allows for adaptability to the context and, as such, challenges researchers' planning. It is important to consider the necessary time and money to collect data, especially when the qualitative designs needed to best answer research questions are resource intense. While the image of a lone researcher conducting qualitative or ethnographic studies may come to mind, qualitative studies are, in fact, rarely carried out alone. Normally, a research team is involved, including, for example, local and international researchers. Planning requires sorting out all kinds of details, from training the research team to accessing field sites, translating and transcribing data, and storing data.

This section covers in more detail some of the critical steps in successfully implementing a qualitative research design. These steps[25] are summarized in Figure 9 and described in more detail below.

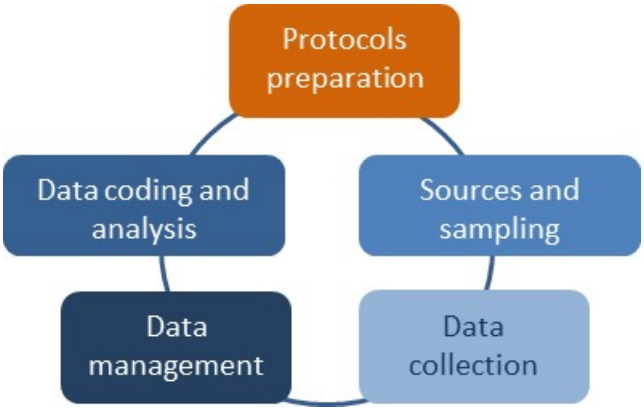
Figure 7: Processes for qualitative data gathering and analysis



[25] Note: These processes can be iterative, and some of these processes may exceed the length of the study period (e.g. data management).

5.1. Designing protocols

Figure 8: Processes for qualitative data gathering and analysis- protocols preparation



Data collection protocols follow from a clear description of the study purpose and the main questions and frameworks guiding the study. Whether for interviews, observations, or participatory methods, these protocols should be designed in relation to the research questions and methodology guiding it. For example, if a study uses a critical realist approach to answer questions about the mechanisms or contextual factors that affect outcomes of an education program, then the protocols need to allow for questions related to both the mechanisms and the contextual factors theoretically assumed to affect the outcomes. In addition, the methods should include questions or observations that allow for unknown mechanisms or contextual factors to be revealed.

In **emergent designs**—when data collection and analysis procedures are designed to be flexible enough to adapt to new ideas, concepts, or findings that arise while conducting the research—such flexibility is to be included in the protocol. This means that the protocols, such as the interview questions, need to be designed to allow for revisions, such as including new questions related to the emerging themes. For example, life histories and qualitative longitudinal studies might want to ask how the participant has changed regarding the phenomenon under study, and, when doing so, be flexible enough to follow the answer given. For example, the Young Lives qualitative longitudinal study (Crivello and Wilson 2016) starts each round by asking children about major changes in their families in the years between interviews ("Can you tell me about major changes that have taken place in the home in the last three years?") and follows with how the past years have been for the child (e.g., happy or sad).

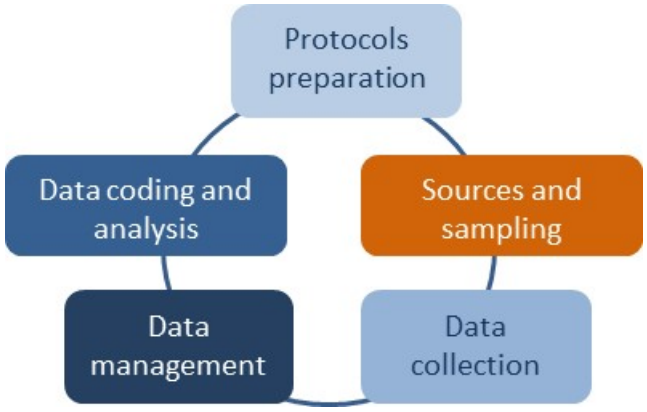
Protocols should be piloted on a similar group of participants to refine how questions are asked and observations made. When working with an international team (i.e., a research project that includes people representing multiple national and language groups), the protocols will need to be developed in one language and translated to another. A good practice in these cases is to translate

the protocols from the original language into the language of data collection and back. If for example, a term does not exist or has a different meaning in the language of data collection, comparison of the original and "back-translated" versions will highlight points to address.

One example of a highly structured protocol aiming at a high consistency of information themes across different field teams is the one used for the World Bank's qualitative assessment on gender across countries (Turk, et al. 2010). The protocol, which was implemented in 10 countries, provides guidance to field teams on the study's main concepts and rationale and the sampling selection, as well as details on how to translate and adapt the data collection tools, how to implement the data collection tools, and the protocols for each tool (questions for interviews and focus groups). It also covers how to document data and report on completed fieldwork. It is important to note that the way one conducts a focus group discussion or chooses sites, for instance, reflects the purpose of the study and how key concepts are defined, which point to epistemological assumptions. In this example, "inequitable gender power relations and social norms" (p. 4) were assumed to be important concepts and inform how data should be collected (e.g., through the types of case studies the protocol specified). In designing a protocol such as this one, researchers should carefully explain their study's conceptualization to inform decisions by field teams. They should also decide how to manage the tension between gathering comparable data about known or theorized phenomena and attention to contextually specific phenomena which may challenge or counter assumptions.

5.2. Sources and sampling

Figure 9: Processes for qualitative data gathering and analysis - sources and sampling



Sampling is the process of identifying participants or sources of data. Most often sampling is at the participant level, but it could also be at the case/site level, depending on the methodology. Qualitative research operates from a different principle in relation to sampling than quantitative data. Some common features of qualitative sampling include:

- Qualitative sampling is generally *purposive*, meaning that participants are selected because they are likely to generate useful data for the project, with a focus on the quality of the data, which is more important than the total sample size.
- Sampling can be an iterative process in that researchers may seek more data to answer the research questions and reach *saturation* (see Box 4), as well as to confirm or disconfirm ideas

and topics that arise from the data as it is being gathered.

- The total number of participants or cases does not indicate whether the data are representative. Qualitative research does not aim for empirical generalizability but can produce *theoretical generalizability*, which means theories developed for the phenomenon and situation investigated can be applied to other contexts or similar issues.
- Sampling may be informed by a *principle of comparability* if the research design and study questions are seeking explanations across groups or sites.[26]

Irrespective of the strategy chosen for sampling (these are detailed in Table 4), the sampling strategy, as with every other aspect of qualitative research, should be related to and adequate for the study purpose and design. Sampling approaches are not necessarily used discretely, meaning that more than one type can be used in a study, particularly if qualitative approaches are used in combination with quantitative methods and sampling.

Box 4: A note on data saturation

A frequently asked question among those commissioning or using the results of qualitative research is, *"How many [interviews, observations, etc.] are good/needed/sufficient/adequate?"* In the case of qualitative research, the answer to this question has to do with the notion of **saturation**. Saturation occurs when enough data is collected to determine key themes and provide sufficient explanation of the phenomenon being investigated, or when new data provides no new information.

Sample sizes are partly drawn based on an expected saturation point (see the section on sampling for more details). But sample sizes might also vary depending on the purpose of the study and its theoretical assumptions. As with other aspects of qualitative research, flexibility is required, as saturation is best assessed during or after completing the fieldwork process.

Saunders, et al. (2018) review the notion of saturation and identify four models summarized in the table below:

Model	What is it	When does it apply
Theoretical saturation	Related to grounded theory methodology, refers to no new information for the creation of theoretical categories	Sampling
Inductive thematic saturation	No new information for new codes or themes	Analysis
A priori thematic	Data covers identified codes or themes	Sampling

[26] See Patton 2005; Teddlie and Yu 2007.

saturation		
Data saturation	New data repeats what is already in existing data	Data collection

Source: Saunders, et al (2018).

Based on their table, three types of saturation are relevant when deciding sample sizes. *A priori thematic saturation* is the closest to defining a fixed set of data (a sample) before fieldwork. *Theoretical saturation* is where an initial idea of a sample is refined using the discovery process as data are analyzed (Are new things mentioned that suggest new categories? Are these categories sufficiently informed?). And *data saturation* is based on what happens when data is being collected—for example, when new interviews are not providing new insights or information compared to the ones already conducted.

Some attempts to systematize saturation points across qualitative research (such as Guest, et al. 2006, Hagaman and Wutich 2016, and Namey, et al. 2016) have come up with a proposed rule for thinking of sampling. They suggest a minimum of four to six interviews and a maximum of 12-20 and between three and six focus groups. These proposed sample sizes are not for the whole study but for the identified relevant categories of subjects within the study. This means, if a study aims at capturing the differences in experiences between young women and young men in an urban and a rural school, the number of interviews will need to cover each of all four groups.

Table 4: Types of sampling in qualitative studies

Type of sampling[27]	Purpose	Example
Criterion	Identifying and selecting cases based on a set of pre-determined criteria; this could include selecting cases that are homogenous.	E.g., New teachers who are first time teaching in rural schools.
Maximum variation	Documenting diverse variations to identify common patterns that cut across variations.	E.g., Rural teachers across income levels or locations, both old and new to rural schools, both new and old to teaching

[27] See Palinkas, et al. 2015 for more types and details on qualitative sampling

Type of sampling[27]	Purpose	Example
Theory-driven	Selecting participants based on the theory of change and seeking confirmatory and disconfirmatory evidence; this may include a form of maximum variation to select participants with a wide variety of experiences to help inform the development of a theory.	E.g., Newly graduated teachers that are originally from rural areas and go to teach there are better at incentivizing students than teachers of non-rural origin.
Iterative, snowballing, and emergent	Selecting participants based on emergent theory or findings, also facilitating the identification of hard-to-find cases.	E.g., Teachers that were rural teachers in their early career and stopped teaching. Starting from a reference from a given school.
Extreme, unique, deviant, or outlier case	Selecting participants to explain unique or outlier cases in the phenomenon being studied. Learning from highly unusual manifestations of the phenomenon in question or adding detail to the average findings from quantitative-based research.	E.g., Long-term rural teachers that have good results that deviate from others' performance.
Stratified or cluster	Selecting participants for comparability among sites/cases or linked to a mixed-methods study, which may have a representative sample and participants are selected within that sample.	E.g., As a first step, cluster rural schools by performance in standardized tests, then look at rates of new teachers and select schools/teachers based on such indicators.
Intensity	Providing rich information form a few select cases that manifest the phenomenon intensely but not extreme cases.	E.g., The five new teachers that arrived at a rural school in a batch-allocation of rural teachers.

The most frequently used sampling strategies are criterion, maximum variation, and theory-driven. As noted in the table, *criterion* sampling identifies participants based on criteria set to answer the purpose of the research questions. This form of sampling may overlap with theory-driven sampling if the criteria relate to specific theoretical constructs being explored, such as a criterion of teachers engaging with tutoring as a construct related to teacher absenteeism. More generally, criteria to consider for case, site, or participant selection include being relevant to the research question, accessible, and able to test tentative and contrasting explanations (Rubin and Rubin 2012).

Maximum variation sampling is based on heterogeneity, with the goal of capturing different experiences or perspectives on a given phenomenon. This sampling strategy involves selecting key

demographic or other variables likely to have an impact on participants' view of the topic or issue under investigation. Based on these variables, a sampling "grid" is created, which will guide the sampling, with participants selected to reflect various combinations of variables. Following on the above example, we might think that years of experience, frequency of engagement in tutoring, and level of absenteeism in the school might give us the maximum variation we require, hence there would be nine groups of teachers to be interviewed, covering the different combinations of these categories.

Theory-driven sampling involves selecting cases, individuals, or documents based on their ability to address the theoretical concepts under study. The number of participants (or cases, etc.) is selected using an iterative process until the data have reached theoretical saturation. If there is considerable heterogeneity in the participants, or in the data, then a larger sample may be required. For example, if the theory indicates that caste and age matter in explaining learning outcomes in primary school, then a theory-driven sample will require participants who represent the relevant caste and age groups. Similarly, if the data do not reveal patterns related to the phenomenon being explained, additional participants will be sought to seek confirmatory or disconfirmatory evidence. Moreover, if findings are to be compared across groups or sites, a *stratified or cluster* sampling may be needed to produce sufficient evidence from each group or site.

Iterative, emergent, and snowballing approaches are common in ethnographic studies and life histories. In these approaches, certain themes or participants become important in answering emerging questions and findings. This means, for the case of *iterative* sampling, for example, that researchers sample cases for data collection following information that emerges from the initial data of each case sampled. *Emergent* sampling is also a good tool for exploratory research. Using emergent sampling, the researcher decides on the sample as the fieldwork proceeds, as more knowledge of the problem is gained (e.g., when using documents, as more documents are revised, potentially a decision is to move from large policy documents to their operational manuals, as it appears that those documents contain more detailed information), or when an opportunity arises (e.g., if a new authority decides to re-draft the manuals that the research has collected).

Snowball sampling, as its name indicates, goes from one sampled individual or group to the next one, picking up cases as it goes along with the assistance of participants. This approach may also be familiar to quantitative researchers. In practice, each informant provides the contact information of other informants, who then provide the contact information of additional ones. Snowball sampling is useful when the research aims to sample difficult-to-find cases (e.g., school dropout children in a context where non-attendance is punishable), cases that are difficult to access without a reference (e.g., high-income groups), or cases that relate to sensitive, private, or stigmatized situations (e.g., abuse victims).

Identifying *extreme, unique, or outlier* cases or participants is another type of qualitative sampling, especially in case studies or life histories, where the purpose of the study may be to understand certain positive or negative outcomes among particular cases or to understand unique phenomenon among individuals. Bajaj (2009) offers an example of sampling unique cases. In this study, siblings comprised the sample with one sibling participating in a unique school with a transformative curricular approach and the other sibling attending a regular government school.

No matter the sampling strategy, qualitative (and mixed methods) studies should include disconfirming cases or data. For example, if the research study aims to understand the processes

and mechanisms that resulted in high learning outcomes, the sample should also include cases where the learning outcomes were low in order to be able to examine if the processes and mechanisms are indeed different for high and low learning outcomes.

Attrition can be a challenge across these sampling strategies, and mitigation plans should be put in place (see Box 5).

Box 5: Challenges of attrition

Qualitative sampling is not immune to attrition, non-response, or take-up or participation problems. Participants can decline participation, decide to interrupt or not complete data collection or participate in one round of data collection and not the next. This is particularly common in longitudinal qualitative studies that take place over the long term, where participants might move, change contact information, or decide to not participate in consecutive rounds of data collection. If attrition is a concern, studies should consider initial over-sampling, meaning they should identify a larger set of participants to compensate for future losses.

People drop out of studies for all sorts of reasons, including respondent fatigue, migration, etc. Strategies to deal with attrition include:

- In a multi-round study, track research participants between rounds to ensure attrition rates are kept low.

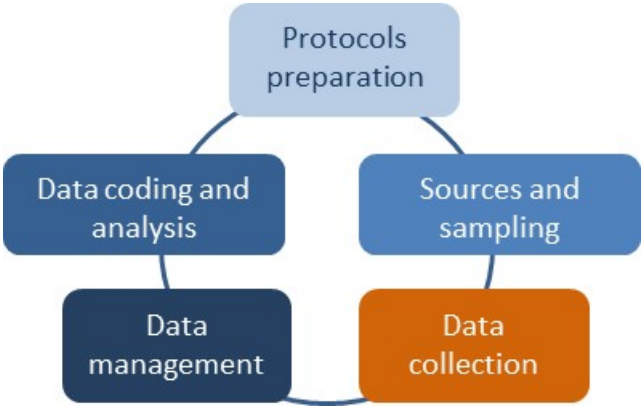
- In longitudinal research, there is always a risk that the data gathering methods (e.g., interviews) get progressively longer, as researchers will want to ask about change since the previous visit, as well as potential new questions. Piloting research instruments can help to keep the research encounter as brief as possible.

- Forms of "community" reciprocity, in which research teams return to communities and individuals with summaries of their research findings, can help to keep participants engaged in a study.

- Researchers should be prepared to answer questions from participants about the likelihood of change/improvement in people's lives as a result of the research, as well as requests for compensation.

5.3. Data collection

Figure 10: Processes for qualitative data gathering and analysis – data collection



Data collection requires both a clear protocol and identification of those who will provide data and an organized data collection effort and a well-trained team (if the data is not to be collected by the primary researcher).

Managing primary data collection for qualitative research, similar to other forms of data collection, requires a clear **set of procedures and related documents** (protocols for data collection), including for sampling, note-taking, and managing potential questions or issues that arise (e.g., regarding the use of the data, potential payments for answering, etc.). The other three main elements of quality data collection are **trained personnel** (previous experience is desirable but does not obviate the need for training on the materials and protocols of the specific research), as qualitative studies might require more expertise to carry out the data collection, particularly with less-structured protocols; an **adequate time-frame**, including time to identify participants and collect data with them (depending on the research purpose and thus the participants involved, considerable time might be needed to identify or contact research participants); and **sufficient funding** to cover for all fieldwork-related costs (including transport and lodging of the research team when needed).

Who gathers the data is a critical question to consider when designing and carrying out qualitative fieldwork. As noted above, when discussing participatory methods, data collectors could involve the participants themselves, who may gather photos for a photovoice method or create a popular theatre script, as guided by the field questions and/or a researcher or facilitator. For video observations, participants involved in the study or a trained data collector may take videos. In many observations, as in interviewing, the interviewer is the "tool" as is the protocol used, hence who accesses the participants, develops rapport, and elicits meaningful information is not a trivial choice.

The ideal scenario is that those involved in gathering data are also involved in designing the study, but this is not always the case. Whether the data collection team is involved in the study design or not, field team training is critical. Ideally, the team identified already has experience and knowledge of qualitative approaches. Even if they do, to ensure quality data collection, all members of the team should receive training that includes an introduction to qualitative approaches; the overall study purpose, design, and qualitative methodology and approach; and a thorough review of the instruments, including considerable practice applying the methods with mentoring, debriefing, and support by their peers and the researchers that designed the study.[28]

It is important that the field research team has a clear, shared understanding of the study's purpose and line of questioning, so they do not miss opportunities to pursue relevant themes. This understanding also ensures the field research team does not ask questions that may be irrelevant or highly sensitive. For example, if the research is to explore how parents see early childhood learning and assess their children's progress, the team should be aware of the possible relationship between parents' views on talking to a child that cannot yet speak and parents' behavior as well as how they perceive the relationship between nutrition and development if these are important to the

[28] For more details, see the RECOUP manual on qualitative research skills workshop, which focuses on training researchers in these different methods (Hassler, et al. 2008)

theoretical framing of the study. Sensitivity to issues around comparing children, asking about specific milestones, or asking parents with low literacy about their reading habits is necessary, whatever the framing. In addition, if the data collection is taking place in a place where qualitative data collection is less accepted or prompts questions from the community or authorities, a clear and good explanation of what is being done, why, and its value are important.

Training of researchers is vital here—in listening skills, context-adequacy, understanding what constitutes a good question, and understanding how researchers' own normative assumptions and experiences may influence responses to questions, as well as the researchers' presentation (including dress, body language, terms of address, and the sharing of personal information).

The field team needs to discuss and be aware of their *reflexivity* (or awareness of how, as a researcher, one can affect both the research processes and outcomes, given that the researcher can and is influenced by the topic of the research and the participants' answers). They must also be aware of their *positionality* (how the researcher positions her/himself in relation to the researched (e.g., as a friend) and how the research participants position the researcher) and how it can affect interviewer-interviewee interactions and thus influence the nature and quality of the data produced. These concerns extend to all field team members—including translators, note takers, and research assistants—as their presence in the knowledge/data production process can introduce bias.[29] The aim of any research encounter is to quickly set up mutual respect, trust, and rapport. Interviewers can, for example, use sympathetic techniques by sitting at eye level, sitting neither too close nor too far apart (respecting local norms), letting people hear their voices on the recording if they wish, looking and sounding interested, listening carefully, gently reflecting back by repeating points interviewees have made to affirm them, and checking verbally and through observing body language whether people are comfortable to continue talking (Alderson and Morrow 2011). Finally, training needs to cover practical issues, from seeking permission to record and taking notes, to determining an appropriate time and duration, location, and other elements of the data collection process.

The time needed for quality data gathering and the demands on participants' time also need to be considered in the process of gathering data. For example, there are no precise guidelines on how long an interview or an observation should take—it depends how the method used produces the data to answer the research questions, what is culturally appropriate for engaging in a conversation or observation, as well as the time a person can dedicate to the process.[30] An assessment of the quality of the data being provided is important. For instance, participants may become tired or distracted given the time of day or their obligations. A final time-related element useful to include in the training and guidance documents is how to write good field notes, including when to write them and what should be included in these notes and other means of debriefing.[31]

Logistical arrangements should take into account the level of volatility in the context (e.g., related to climate fluctuations, security, or conflict situations) (see Campbell 2017, Berman, et al. 2016),

[29] For more information see Bujra (2006) and Naveed, et al. (2017).

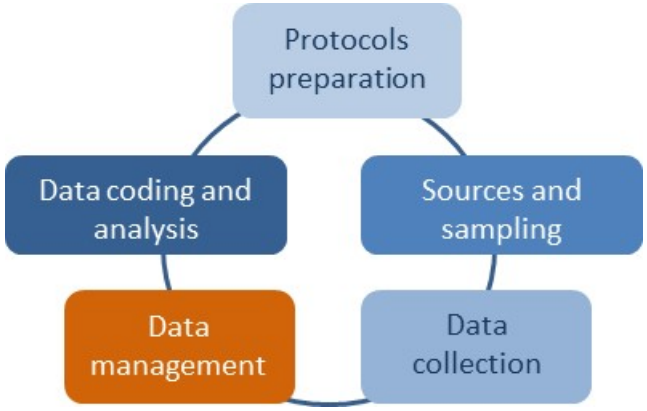
[30] As a general rule, interviews—individuals or group—should not be planned to last more than one to two hours, and that information needs to be provided beforehand to the participants.

[31] See Emerson, Fretz, and Shaw (2011) for guidance on writing field notes.

and training should include these issues. Practical matters such as safe transport and supplies, including electricity for computers in areas with intermittent energy supply, are also important to consider. In-depth ethnographic research, for example, may require longer-term periods of fieldwork or even permanence in a selected community, making contingency planning important. Further, for educational research taking place in schools, researchers need to be aware of holidays and festivals in the school calendar, as well as exam periods, when teachers and pupils are under pressure, among other considerations.

5.4. Data management and transcription

Figure 11: Processes for qualitative data gathering and analysis – data management



Qualitative studies can produce large amounts of data and, as such, it is important to plan for its use (both for immediate and later analysis). Data, depending on the method used, can include recordings or notes of interviews or conversations, notes and images from observations, a large set of documents or notes based on documents, videos, etc., as well as the field notes from the research team. As such, an adequate data management plan is required, from the point the data is collected through its handling, storage, and transformation (e.g., from recording to transcript).

Researchers should keep a thorough data log that includes all types of data and related information, such as the date and location where data were collected, format of the data, duration, researcher responsible, note taker, original language, and critical identifiers from the respondent, among other pieces of information. This allows for data tracing and organization. Ideally, this data log preparation should be done before any data transcription or coding. For studies that involve multiple waves of data (ethnographic, longitudinal) or multiple sources, the organization of data files by time and group is critical for finding data later. As with quantitative surveys, the originals need to be properly stored and organized such that they can be accessed as needed. Plans for their future destruction or safe storage are also required.

Transcribing recorded data—audio or video—and organizing field notes and documents or observations should be done in accordance with clearly organized protocols and under supervision. A similar process is needed when transcripts or information are to be translated, for example, by

having more than one translator go over the same recording or document and having the field team read through translations to discuss consistent word usage. The research team will need to make conscious decisions about the stage at which translation will occur. Given qualitative research's emphasis on capturing perspectives authentically, there are advantages to analyzing data in the language of the participants. However, much depends on the language capacity of the researchers using the data and on storage, access, and reporting requirements. All of these processes are important considerations for translating data, as translation in qualitative data is itself an interpretive act, closer to analysis than mere data handling.[32] Time estimates and budgets should be adequately considered for transcription and analysis. A one-hour interview can take two to four hours to transcribe (depending on the transcription conventions that the study uses). Video observations or group interviews (classroom recordings) can take longer because they involve transcribing what multiple people say *and* do.

In terms of data storage, all data should be stored in a way that protects those involved in the research in accordance with ethical protocols. Often, data are stored anonymously and in a manner that restricts access to the research team (encrypted and/or password protected), and back-up files should be included.[33]

There is increasing interest in sharing and publishing data for review and use by others. While there are ethical considerations in doing so with qualitative research, how data are shared and published should be considered by the research as well as those commissioning the research, and awareness of the potential impossibility of making the data public is important.[34] While most qualitative data is not suitable for public access because of ethical concerns around anonymity, there are some efforts to share data in an ethical way (see one example in Box 6).

[32] See, for example, Lapadat 2000; Temple and Young 2004; Rubenstein- Ávila 2013.

[33] Storage systems, from Dropbox, Box, or other cloud-based systems have become more common recently, as well as centralized data storage severs.

[34] See the ROER4D website for information on data sharing and open data practices: http://roer4d.org/3575

Box 6: The Data Management Plan (DMP) Checklist of the Qualitative Data Repository

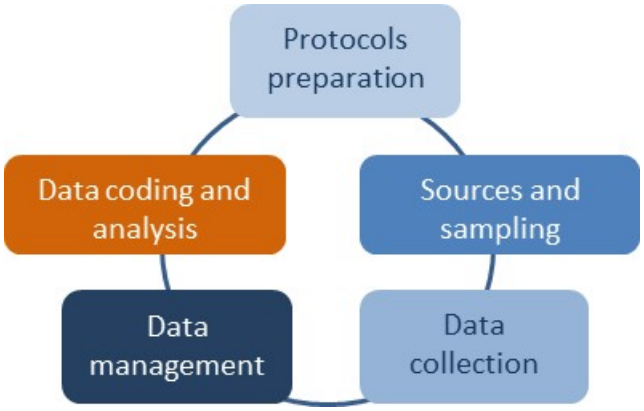
The checklist aims for a clear and detailed reporting of procedures to be followed throughout the research process with regards to the data, some of the issues (not exhaustive list) include:

- Personnel that will work on the project and have data access: What specific responsibilities and levels of access to the data (if applicable) will each individual or organization have?
- Formats in which the data will be collected and used: Examples: WAV audio files (e.g., of recorded interviews); scans (e.g., of archival documents) in PDF format; photographed images as JPEG files; typed transcripts of focus group conversations in .docx format; paper-based handwritten notes;
- Data organization: Qualitative data example: paper copies of archival documents will be filed alphabetically in a standard archival box.
- Processing and transformation of data: For example, auto-coding in qualitative data analysis software.
- Handling of the pre-processed data sources (original versions) to guarantee security: All files will be encrypted.
- Storage and preservation of data after project completion: e.g., after anonymization, the original data sources will be discarded/erased, and the processed data sources will be archived at repository X.
- Plans for data sharing: e.g., Data will be deposited with access restrictions with a data repository.
- Conditions for access and re-use: feasibility, metadata, anonymity, partial or full sharing.

Source: www.qdr.org. Center for Qualitative and Multi-Method Inquiry, Maxwell School, Syracuse University

5.5. Data coding and analysis

Figure 12: Processes for qualitative data gathering and analysis – data coding and analysis



Data coding, the first step in data analysis, must also be clearly planned and outlined. Qualitative data can produce a lot of data, which can be complicated to manipulate and analyze. Teams and studies can benefit from focusing on a clear, limited number of questions or themes to start the analysis.

The analysis of qualitative data requires time, as it is an iterative process of coding, note making (known as *memoing*, meaning notes linking data to concepts, constructs, and theories), analyzing, and reviewing the data. There are many different approaches to qualitative data analysis—following the diverse methodologies discussed above—but there are also some common features. Miles, Huberman, and Saldana (2014) offer some common features to the many different types and steps of analysis; the ideas below are adapted from their list.

The analysis process should **follow the purpose of the study** and the research questions. For instance, if the purpose is to identify new contextual factors that are not accounted for in existing literature, then the purpose is exploratory and aims to identify these factors.

Analysis often **begins during the data gathering phase**, when researchers are already considering the data and how they answer the research questions. This initial analysis can take the form of memos for each type of data gathered or overall research notes for the project.

Analysis usually includes **coding the data**. The purpose of coding is to **reduce large amounts of data** (sometimes hundreds of pages of words from interviews or text, or images) to more meaningful parts that are conceptually/theoretically important. Coding involves **looking for patterns** among small amounts of data and associating data with common themes or concepts and looking for variations. The codes can emerge from the data (inductive) or they can come from the conceptual framework that informs the study (deductive). Usually, qualitative coding is a combination of both emergent and *a priori* defined codes[35]. (See Box 7 for an example).

Coding is only a **first-order analysis** or an initial step in the process. The second step in analysis requires making sense of the coding through identifying patterns or differences (or disconfirming cases); making comparisons within or between individuals, groups, or cases; and testing alternative hypotheses. These steps in analysis often involve relating the data to the conceptual framework and the relevant literature to extend, negate, or propose new conceptual ideas.

While traditionally coding was done manually, a number of computer-aided data analysis packages exist (approximately 25, the most common being ATLAS-ti, NVIVO, MaxQDA, and Transana).[36] These are software packages that help researchers organize and extract qualitative data. The important point to note is that they do not automatically analyze the data for the researcher. The researcher/research team must decide how to code the data, what lines of analysis/themes to follow, and so on. Computer-aided packages are particularly useful with large research studies or large teams to organize the data. Analysis software is important for storing coding and analysis so that

[35] See Saldana (2014) for more on developing codes, a codebook, and coding practices, including inter-coder reliability, for data.

[36] All of these programs have online tutorials and guides for users. Some packages are useful for smaller studies; others are better for mixed-methods and large datasets (Nvivo, MaxQDA); Transana is useful for analysis of digital media, particularly videos.

the researchers or others wishing to analyze the data or refer back to it at later points in time.

Coding the data, however, does not mean the analysis is complete. Second-order analysis (or third or more) is done to explain patterns, comparisons, relationships, and disconfirming evidence among the themes to answer the research questions. These steps of coding and analyzing data vary based on the methodological and related analysis approach taken.

When working across national contexts and languages, practical steps of data coding or organization in relation to themes and topics can be defined. There is no prescribed best format or gold standard; instead, several options can be considered. Local research teams can conduct the analysis, with training provided to ensure all study members understand the overall study purposes, questions, and frameworks to analyze the data accordingly. Local and international teams work collaboratively to analyze data—working through multilingual researchers as well as translators to discuss interpretations, meanings, and analysis. Or a stepped approach can be taken, whereby local teams go over the data first, followed by the international team.

Secondary analysis of data where the data are collected and transcribed/translated and then analyzed by another team is the most challenging as the analysis is often removed from the cultural and linguistic context. To minimize the loss of contextual richness, country teams can produce in-depth data gathering reports (Crivello, et al. 2013 and Turk, et al. 2010). Data can be reviewed after each round of data generation or after the first set of interviews or observations.

Box 7: Systematic analysis of qualitative data: Young Lives

The analysis of qualitative data, and in this case longitudinal data, is a multi-stage process. Rather than focusing solely on either cross-sectional findings or differences between two points in time, such analysis aims to illuminate the trajectories or pathways individual children are following and to understand how different factors interact to shape them.

Most Young Lives qualitative data take the form of text, although they also include pictures, diagrams, and photographs. The majority of the text comprises transcripts of interviews, though it also includes reports on group activities and texts such as diaries produced by the children themselves. Each text file is transcribed and recorded in a common, collectively agreed format, which allows it to be identified by date, research method, and participants.

The principal method for organizing these data to facilitate systematic longitudinal analysis is coding and categorizing text sections according to a mutually agreed framework. Once the framework for each round is finalized, each section of the text is coded according to its content using the qualitative data analysis software Atlas.ti. Once coded, the whole dataset can be searched according to different codes and intersections of code, facilitating systematic analysis. The first stage of analysis in each round tends to be descriptive, summarizing the data and highlighting emerging themes, patterns, and connections, while subsequent stages reflect the specific focus and research questions developed by each country team.

The principal divisions in this framework, known as “super-families,” follow the core themes of the longitudinal qualitative research component, which are services, transitions and changes, and child well-being. Each superfamily is subdivided into “families,” topics that are derived

from the main category. In the case of the transitions and changes super-family, for example, the family categories are expectations, relationships, educational transitions, and other transitions.

All country teams use the same framework of super-families and families, but a third level of the framework, comprising detailed sets of codes within each family, is unique to each country. In Peru, for example, the educational transitions family was further sub-divided into communications and exchange between teachers, communications and exchange between teachers and parents, school organizational arrangements, school material resources, teacher training, adaptation, attitudes, expectations, support, children's readiness for school, children's feelings, importance of preschool, and difficulties (Crivello, Morrow, and Wilson 2013).

Analysis can be approached either by theme or by individual:

- A 'horizontal' reading of the data is undertaken through the themes and sub-themes identified in the coding framework, enabling the identification of trends, similarities, and differences between and within the research sites.
- A 'vertical' reading of the data entails starting with selected individual children and gathering all the available information about them in order to construct a detailed, composite image of their lives, and to triangulate data collected at different times.

Making such horizontal and vertical readings was relatively straightforward with a single round of data but has become successively more complex as subsequent rounds of data have been collected. Research teams agree on strategies for summarizing longitudinal data. Tables and matrices constructed to track changes in the lives of case study children over time are an important tool for condensing data, guiding researchers to extract coded material from previous rounds. Case histories are constructed by examining all interviews with one child over successive data collection rounds, dividing the data into different domains such as education, work or risk, and creating a narrative or storyline for each domain.

Source: Young Lives 2017a, 2017b.

Section 6: Ethics related to qualitative research

Ethics in research refers to the moral principles guiding research, from its inception to completion and publication of the results and beyond. Research ethics guidance ensures that the principles of justice, respect, and harm prevention are upheld. The past 25 years have seen an expansion of research governance globally, and now research ethics approval systems and frameworks exist, to a degree, in all parts of the world. Qualitative research is often assumed to raise greater ethics concerns than survey-based research because of the co-production/face-to-face nature of the research and the interaction/relational nature of the research process. But this perception is very misleading—survey enumerators also co-construct data in gathering survey data. Although ethics approval systems may seem burdensome, it is helpful to note the positive benefits of the systems, notably that they challenge researchers to be clear about the aims and purposes of their research and what participants are expected to do.[37] One way to think positively about ethics in social research is to bear in mind that ethical research involves **5Rs—relationships, respect, relevance, responsibility, and reciprocity** (adapted from Markiewicz 2012)[38].

Ethical guidelines for educational research such as BERA (2011) and AERA (2011) can guide research processes for studies in other countries. In addition, countries and institutions may have their own research guidelines and processes, and these should be followed.

Ethics questions in research can be usefully discussed under a series of 10 topics (adapted from Alderson and Morrow 2011). These can be framed as questions to address during the lifetime of a research study, such as, is the research worth doing? Can the investigators explain the research clearly enough so that anyone invited to participate can give informed consent?

The 10 topics are set out below: the first six topics involve the planning stages; topics seven and eight involve the data-collection stage; and the final two involve the writing, reporting, and follow-up stages.

6.1 The purpose and methods of the research

Are the research questions worth asking, and why? In whose interests are the questions being asked? Do the methods fit the aims of the research? If children are involved, what "standpoint" are researchers taking when they study children? How are children's competencies respected?

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[37] Researchers are increasingly giving attention to the ethics of educational research involving children in low- and middle-income settings—see Holliday 2013, Honan, et al. 2012, Jadue Roa 2017, Obaidu Hamid 2010, Pillay 2014, Robinson-Pant and Singhal 2013, Sikes 2013, and Sinha 2017. See also Mikesell, et al. 2013 and Friedman Ross, et al. 2010 for useful overviews of ethics considerations in relation to participatory approaches and community-engaged research.

[38] Markiewicz's article develops a number of principles for evaluators to follow in evaluating programs. These include: "having respect for the importance of historical, socioeconomic and psychological context; commitment to ensuring relevance in methodologies and approaches used; reciprocity in considering the benefits for participating Indigenous communities; and responsibility in undertaking effective communication and consultation".

6.2 Assessing harms and benefits

What contributions are people asked to make to the study? What are the risks or costs, such as the use of their time, embarrassment, and intrusion? What are the benefits of taking part in the research, such as satisfaction, increased knowledge, and time to talk to an attentive listener? (The principle of beneficence means that research participants should benefit from the findings of a study.[39]) If children are involved, what contributions are they asked to make to the research? Will they be tested, observed, or recorded? Are there risks if the research is not carried out? Does the research address sensitive questions about teacher performance/testing teachers, absenteeism, use of corporal punishment? Does the research use surveillance methods, such as using observations from video/CCTV?

6.3 Privacy and confidentiality

What are the limits to privacy? Are people able to opt in to the research? Is it coercive to send reminders? Where will the research be conducted, in a quiet, private place? How realistic is it to achieve privacy in many settings, especially in research directly with children? Will names be changed in reports of the research to protect people's identity? How will data be protected, i.e. will research records, notes, films, digital material be secured and de-identified, and in what way? Will researchers check back with participants about the use of long quotes, etc.? Will research records be destroyed at the end of the study?[40]

Research in educational settings/schools inevitably involves children, so thought needs to be given to how children are involved. Is it really necessary to include children? If yes, can children opt in to the research? Can they opt out of the research?[41] In undertaking research in schools, children's voluntariness is questionable and must be handled with care. Thought also needs to be given to how to handle privacy in the classroom.

Ethics questions arise in relation to breaching confidentiality in case of **child protection** concerns. If researchers think that a child is at risk of harm or in danger, and they feel they must report a child's confidences, do they try to discuss this first with the child? Is a referral system in place to support vulnerable children, and in the absence of any formal support systems, have researchers considered what to do? What do researchers do, for example, when they observe corporal punishment in a school? Further, in some countries, researchers are required to have a police check

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[39] For example, if a study informs a new curriculum, the researchers should ensure that the new curriculum makes its way back to the schools that participated in the research.

[40] In relation to data protection, new regulations came into effect in 2018 relating to the processing of personal data and the free movement of data between countries under the General Data Protection Regulation (GDPR). Governments globally are adjusting legislation accordingly. Researchers are advised to check national legislation and seek clarification from with local data protection officers about the implications of this, and research with children in particular, noting the special provisions relating to children's data.

[41] It is important to differentiate between consent and assent. Consent may only be given by individuals who have reached the legal age of consent. Assent is the agreement of someone not able to give legal consent to participate in the research but deemed old enough to understand the proposed research in general. Work with children or adults not capable of giving consent requires the consent of the parent or legal guardian and in most cases the assent of the subject.

before undertaking research in schools.

6.4 Selection and participation

Why have the individuals concerned been selected to take part in the research? Are the research findings intended to be representative or typical of a certain group of people? Who is left out of/excluded from the research? In research with children, have some children been excluded because they have speech or learning difficulties, for example? Can such exclusion be justified? Are the research findings then representative of certain groups of children?

6.5 Financial considerations relating to time, compensation

Does funding allow for time and resources to collect and analyze data respectfully and accurately? Should participants be compensated for their time? Should this be a reward upon the completion of the data-gathering process to avoid "incentivization"? What constitutes a fair return for help and services? How does this differ by context? In relation to research with children and young people, consideration needs to be given to how to compensate children and young people for their time.[42]

6.6 Reviewing the research—institutional review boards and research ethics committees

Research ethics committees are now commonplace in high-income countries, especially in UK and USA universities, and are increasingly available in low and middle-income countries, and there are often mechanisms in place for in-country ethics review. These committees differ widely, and the onus is on researchers to check—regularly—what is required in each context.[43] Often, there will be research ethics committees available to review public health-related research (health defined in the broadest sense), and educational researchers may feel their study falls outside the bio-medical model. Yet approval is still needed. Advisory groups/boards and national steering committees that monitor and guide the research process can be very helpful here—and in some cases, seeking ethics approval in study countries may result in greater uptake or "buy-in" from stakeholders, as well allow for constructive feedback on the research design/process.

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[42] Payment—and, indeed, any form of "research reciprocity"—can lead to misunderstandings and difficulties within communities, especially if some people/children are included in research and others are not, and especially in poverty settings (see Morrow 2009, 2013).

[43] E.g., national guidelines in Ethiopia enable waivers of informed consent if the research project "carries no more than minimal risk, if the research… is to be conducted or approved by federal or regional government and is designed to study, evaluate, or otherwise explore public benefit or service programs…." On the other hand, in Vietnam, increased concerns about over-testing of children in the formal education system have meant that it may be difficult to obtain approval to undertake research with children that involves them taking further tests.

There are further questions about review to be considered, including the following: have participants helped to plan the research or been invited to comment on it? Is the design unhelpful to participants in any way, e.g., are they asked to talk about matters that might embarrass them? Are children being asked to answer questions they cannot know the answer to—not because they are incompetent but because they have not been taught or because the questions/tests are irrelevant or completely meaningless to them? How do researchers manage situations in which some children in a particular class cannot read or write, so cannot complete a test or questionnaire? Are questions deceptive? Can the research design be improved? Are there ways of dealing with complaints? Are local understandings of, for example, informed consent, taken into consideration?

6.7 Information

It is vital to inform people involved in research, and researchers usually use a combination of written and oral/spoken information in order to do this. An information leaflet helps ensure that accurate, standardized information is given. It is important that researchers spend time orally explaining the research and check people's understanding, as well as answer any questions.

If research is taking place in a school, are adults (teachers, parents/caregivers) and children provided with details about the purpose and nature of the research? Do the researchers explain the study and encourage children/parents to ask questions? If parents and children are not informed, how is this justified?

Researchers working in educational settings should ensure that children know and understand that participation in a research study is separate from their usual lessons, and that refusal to participate/withdrawal from participation will not affect their participation in any standard educational activities, nor their grade or class position. Further, care should be taken not to disrupt children's schooling or other regular activities such as extra-curricular activities and part-time employment.

In any context, parents/caregivers and others in the community and children themselves should be informed about the research at the very least, even if the requirement for "informed consent" has been waived by a research ethics committee. People are highly likely to see researchers in the community and wonder what they are doing there, and any concerns can be allayed by careful explanation.[44]

6.8 Consent

Consent—in other words, saying yes or agreeing to participate—is the central element of research ethics. While most guidance on consent derives from medical research and treatment, the values of respect, trust, clear information, and good communication apply to consent to any kind of research. Covert and/or deceptive research is seen as unethical.

As noted above, consent needs to be informed and freely given. People should be given time to decide, they should be able to ask questions and talk to other people before they decide, and they

[44] See also Shamin and Qureshi 2013.

should be able to refuse or drop out at any time without giving a reason. People also need to be reassured that if they decline, it will not be held against them, and the services they receive will not be affected in any way. Consent may be spoken or written on a consent form. Researchers may audio-record oral consent.

Most research guidance now insists that children and young people give informed consent to participate in research. This, then, begs the question of the age at which children can be deemed competent to give informed consent, and this varies between countries.[45] In general, researchers are advised to seek the consent of both parents and children to participate in research, unless researchers can show that the risks are small enough to rely on children's consent alone. Researchers in schools need to seek a range of permissions—from education ministries to regional and district education offices, headteachers, and teachers—and may find it difficult to insist on requesting parents' and children's consent when they depend on the goodwill of staff at the school.

As already noted, guidance is that ethical research involves informing and respecting everyone involved. There are creative ways of informing parents/caregivers and communities about research, for example by researchers holding meetings at the school to explain their research and answer concerns. Children's refusal to participate must be respected.

6.9 Dissemination and implementation of findings

Do research reports show a balance and range of evidence? Qualitative research is sometimes criticized for "cherry-picking" quotations that illustrate the findings researchers want to highlight, so it is important to use and discuss the full range of evidence to show balance. Will participants (including children) be invited to comment on the preliminary analysis of findings, to check the researchers' interpretation? Will participants be sent short reports of findings? Not least, this is a useful way of saying "thank you," and it is particularly important in longitudinal research in which a long-term relationship between participants and research teams necessarily develops. Finally, how can the research be made relevant and usable to country/local communities and participants?

6.10 Impact of the research on wider groups

What collective effect can research findings have on attitudes and policies toward particular groups, and how might the conclusions of one study affect wider groups of similar participants? What ethical questions are raised by news reporting of research findings that may be sensationalized? In relation to teachers, see the blog: http://www.younglives.org.uk/node/8329.

Most ethics guidance focuses on the data collection stage, but there are ethical questions raised by the likely effects of published reports, both on people who participated in the research (who may feel let down or angry when they see how the data they have produced has been used to draw conclusions) or on wider groups as policies, practices, and public opinion may be influenced by the conclusions drawn from research findings. This is particularly the case for children and young

[45] E.g., in US the concepts of "assent" and "mature minor" are used in relation to informed consent, but these are difficult to translate and confusing for researchers in practice.

people who lack the power, status, and resources to challenge research findings about them—but also for low-status teachers and others who work in schools around the world.

Section 7: Identifying reliability and validity in qualitative research

The reliability and validity of any research are crucial aspects of its quality.[46] While these concepts have distinct meanings in a quantitative context, where reliability concerns the collection and processing of data and validity the truthfulness of the conclusion drawn from the data, in a qualitative context such a distinction may not be appropriate. Instead, a number of techniques may be used to ensure both reliability and validity of qualitative research.[47] These techniques (adapted from Hadi and Closs 2016) include:

- *Reflexivity and positionality*: Quality research openly and transparently presents and discusses assumptions and biases and how they affect the data gathering and analysis process. By keeping field notes or journals of how the researcher's role and assumptions may have influenced the data gathering and analysis and then discussing examples of this, the researcher aims to illustrate the credibility of the analysis.
- *Triangulation:* This involves checking inferences from data across different sources and methods. Triangulation should not be used to check the accuracy or "truth" of one source of data against another but rather the overall inferences and where biases might emerge.
- *Prolonged engagement*: Prolonged engagement in the context and with the participants enables trust and relationships to form, which are helpful in obtaining dependable and credible data.
- *Thick description*: Thick description addresses the principles of openness and transparency. Researchers provide adequate details of the study setting, participants, data collection processes, and data to allow the reader to understand the claims made.
- *Audit trail*: Like thick description, the audit trails provide adequate details about the study data collection processes, decisions, and analysis. The reader can judge the strength of the evidence based on these details as well as the adequate use of data.
- *Peer debriefing*: This involves sharing emerging hypotheses, analysis, and findings with other researchers to seek feedback and alternative perspectives on the analysis.
- *Member checking:* Like peer debriefing, but here participants review the data and findings from the study as a way to help ensure greater dependability and credibility.

Many of these checks can be assessed in the writing and presentation of qualitative data analysis. A high-quality report, as noted earlier clearly articulates the qualitative design, data gathering processes, and analysis processes, as well as the approach used in the research design.

Conducting sound and rigorous qualitative research that can have an impact on the education sector means being clear on the purpose of the study. It is the study's purpose that guides the myriad choices that face researchers, and which we have addressed in this note. These choices start in the

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[46] See Appendix 1 for a full checklist of considerations relevant to assessing research quality.

[47] Some qualitative researchers (Lincoln and Guba 1985, p. 290) argue for abandoning the concepts of reliability and validity for qualitative research, and instead use "trustworthiness." The approach here retains reliability and validity as dimensions of both qualitative and quantitative research, consistent with Building Evidence in Education (BE2) (2015). Assessing the strength of evidence in the education sector.

design phase, in which researchers must reflect on and describe their context and their ontological and epistemological assumptions to appropriately frame their study. These assumptions shape research questions and methodologies, which in turn influence the choice of methods, sampling strategies, and analysis approaches. A strength of qualitative research is that studies can adapt to changes in unpredictable or evolving situations that affect education, such as the life of a child, a curriculum reform, or a policy change in ways that generate important insights. Rigorous qualitative research, as illustrated in the many examples cited throughout the note, can affect (and has affected) decision-making within education. There is a clear need and demand for extending the base of qualitative evidence in education. This note, and related open-access videos, aim to help funders, researchers, and users of qualitative research assess how such studies are ethically and methodologically rigorous so that they can contribute to and impact educational policy and practice.

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Appendix 1: Checklist to assess quality in qualitative research

Conceptual framing

____ The study has a clear overall approach that situates it within a research paradigm (interpretive/constructionist; critical; deconstructionist).

____ The goals for the qualitative study are clearly articulated, and these goals align with the research paradigm (e.g., if the goal is to understand participants' perceptions of a program, it is aligned with an interpretive/constructionist perspective and related methodologies).

____ The researchers have identified a question (or a set of questions) that can best be answered through qualitative research, and the ethics of asking (or not asking) the questions are considered.

Robustness of methodology

____ The researchers have selected a methodology that aligns with the overall paradigm and purpose and have provided justification as to why this methodology is well-suited to answer the research questions.

____ If the qualitative study is being used as part of a mixed-methods study, its goals and approach are considered and aligned with the other components of the mixed-methods study.

____ The researchers have considered how the methodology (and data) can be used to inform policy and practice.

Culturally appropriate tools and analysis

____ The selection of methods to collect data are aligned with the overall purpose and methodology, and cost, cultural appropriateness, and relevancy are discussed.

____ Protocols for interviewing, observations, or participatory and arts-based methods are developed with consideration of the different respondent groups and the ethical guidelines of the countries involved in the research project.

____ The project team should have contingency plans for alternative methods and participants if they face challenges in the field in carrying out their planned data collection.

____ Time and budget are adequately considered for collecting data using the appropriate methods. In addition, the ethics of paying (or not paying) participants should be considered.

Credibility

____ The process for sampling has been identified and aligns with the overall purpose and methodology. Considerations of consent, confidentiality, and participation have been given to including children/youth participants, illiterate participants, or others who may be considered vulnerable populations.

____ There is a clear plan for piloting the protocols for data collection, including considerations of translation, if necessary, and revising protocols if used over multiple waves of data collection.

____ The researchers/team have considered who will collect data using different methods,

including a plan to train local researchers and translators in the processes for doing qualitative research.

Reliability

____ The project has a plan for data translation (if required), analysis, and storage, including a clear statement about who will have access to data and who will analyze it. The project should clearly state data ownership and uses and plans to share the data with participants.

Openness and transparency; cogency

____ A data analysis plan has been created that aligns with the overall methodology and purpose of the research and the research team is adequately trained to analyze the data. Considerations for ensuring the quality of the analysis, and time and cost are clear in the data analysis plan.

____ There is a clear plan for sharing the research findings with participants and other stakeholders (national, international), and considerations are given to how the research can affect practice and policy in a timely manner.

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