

RESEARCH METHODS IN PSYCHIATRY

Reconcilable Differences: The Marriage of Qualitative and Quantitative Methods

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Qualitative research consists of methods that allow for a more in-depth understanding of phenomena and encompasses techniques such as focus groups, in-depth interviews, and participant observation. The guidelines that pertain to sampling and analysis are different from those which govern quantitative techniques, but they can be applied just as rigorously to ensure the validity of the results. This article introduces these methods and criteria and illustrates how qualitative and quantitative methods can be combined in order to improve what is learned from each.

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In the previous articles in this series, we've focused on various aspects of research, as the term is now commonly used in psychiatry. That is, when most psychiatrists say "research" (if they say it at all), they generally mean some form of quantitative study, involving a large number of subjects, perhaps with random assignment to different groups, using objective outcome measures, and analyzed with inferential statistics. Indeed, the earlier articles (and most of the forthcoming ones) address these different components of quantitative methodology. This article is unique in 2 ways: it focuses on qualitative research techniques, and it is authored

by 2 people (one of whom actually knows what she's talking about). What we hope to do is introduce you to qualitative research and explore how it can be integrated with more traditional, quantitative methods so that studies benefit from the strengths of each approach.

In reality, a qualitative approach to gathering data is not new to psychiatry or to other branches of medicine, but is actually closer to its roots. After all, Freud's theories were derived from what we would now call in-depth interviews and life histories; Adolph Meyer used and taught a detailed life history approach; and many of our current diagnoses were derived from careful, systematic studies of a small number of cases (1). The tradition survives in the superb case descriptions of neurological patients by Oliver Sacks (2). As we will see, though, there are important differences between interviews carried out within a qualitative research tradition and those done for clinical purposes, although the latter may lead to researchable questions. In this article, we will discuss 1) what qualitative methods are, 2) how they differ from "clinical practice," 3) why qualitative methods are useful, and 4) how they can complement quantitative approaches. Be forewarned (or reassured), though, that we will not delve too deeply into the differences among the various theoretical traditions in which qualitative methods are often embedded, nor will we go into much detail about the technical aspects of data analysis. For those who want to explore these topics in

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greater depth, we would recommend the work of Denzin (3) and Boydell (4) and their colleagues.

Qualitative Research Methods

Philosophy

Before we introduce the unique data collection, study design, and quality control techniques associated with qualitative research, some of the underlying assumptions that distinguish this type of research need to be understood. Various names are given to the basic paradigm, with the term “naturalistic” often used by its practitioners in opposition to the traditional “rationalist” position (the latter is sometimes labelled as “positivist,” which is meant to be a derogatory term when used by “postmodernists”). Guba and Lincoln (5) discuss the beliefs about the nature of reality and ways of knowing that differentiate these 2 paradigms. They stress that what is at issue is not the nature of self-evident truth, but rather the fit between the philosophy of science and the phenomenon that is under study. They do not advocate abandoning experimental methods when dealing with genetic and biological processes, but do argue that social and behavioural phenomena are best understood within a different framework.

The nature of reality within the naturalistic framework is less tangible and predictable than the rationalistic version. Rather than seeing human behaviour as a conglomerate of independent variables and processes that can be taken apart, examined, and then eventually reassembled to get the total picture, emphasis is placed upon multiple, interacting realities that can only be studied as a whole. The focus is on subjectivity, that is, meaning and interpretation as constructions that exist in the minds of people. Echoing the early Gestalt psychologists, the assumption is that the sum of human experience is greater than and different from its parts. Inquiry is more like filming an ever-changing and unending story, rather than cutting out and putting together a jigsaw puzzle. Each filming should increase understanding, but there is no one correct version, and more questions may be raised than answered.

Moreover, the relationship between the inquirer (a term that is used in preference to “researcher”) and the respondent is viewed differently within the naturalistic paradigm. Rather than trying to maintain a discrete distance between the observer and the observed, mutual interaction is seen as both inevitable and as a valuable source of knowledge. Just as film makers focus and shoot in response to both the action on the set and their own interests and sensitivities, so scientists are viewed as adaptable and responsive “instruments” who guide and shape the discovery process. The desired outcome of research for the rationalist is a set of context-free generalizations based on similarities among units. The naturalist is more interested in developing an adequate and complete picture—what is called a “thick description” of the situation under study. Differences in time and context are as important as similarities.

Critics of the ongoing and often contentious academic debates feel that the philosophical differences between these 2 types of science have been exaggerated and overemphasized (6). Still, recognizing that basic concepts like objectivity and subjectivity are viewed somewhat differently between these ideological camps should help those new to the territory make sense of the unusual features of the terrain. It should be noted that lumping all of the various qualitative theoretical traditions into one philosophical pot is a little like talking about psychiatry as if there were only one school of thought. In reality, there are numerous types of qualitative research traditions, ranging from phenomenology, with its focus upon the lived experience of individuals, to grounded theory, which searches to identify the core processes within a particular social scene (7). Among these distinctive traditions and theories, there are various research methods, which we will describe, although we will not be going into greater detail regarding the ways the theories dictate the methods.

Data Collection Techniques

Quantitative research encompasses a wide spectrum of techniques, ranging from *in vitro* examination of nerve endings through brain imaging to community surveys of prevalence and randomized, controlled clinical trials of new drugs and other types of therapy. Each of these procedures was developed to address questions that the others could not. In an analogous way, there are a multitude of qualitative techniques available to the researcher. None is useful in all situations, but collectively the techniques are capable of addressing a wide range of problems. Ethnography, made famous by social and cultural anthropologists, is probably the most well-known qualitative method. Immersing oneself in the daily life of a culture over an extended period of time, developing relationships with key community members, and taking extensive field notes were techniques originally developed for the investigation of foreign societies. Now they are also used to explore such exotic locales and cultures as pool halls and operating theatres. Life narratives, case studies, and archival analyses are other tools in the qualitative realm. In this section we will briefly describe group and individual interviews and participant observation: qualitative methods of data collection that are closer to clinical practice and thus more feasible and accessible for psychiatric researchers.

Focus groups. The focus group is becoming an increasingly popular research technique used to discover such universal truths as which brand of toothpaste we prefer or which politician we least dislike. Despite these disreputable associations, focus groups actually are a very valuable tool in qualitative research (8). A focus group session is a discussion in which a small number of people (somewhere in the neighbourhood of 6 to 10) talk about a topic proposed by the moderator or facilitator. This is one major way in which a focus group differs from a therapy group: it is the researcher who sets the agenda, rather than the participants, and he or she tries to keep the group focused on that topic, sometimes

using a series of probes to assure coverage of key concepts. Beyond this, though, the session is fairly open; the members may make comments on what they feel or believe or on what someone else has said, and they may ask questions of other members.

Group interviews have some advantages over a series of individual ones. Obviously, they are more efficient, allowing the researcher to hear from multiple perspectives in one session. They may also provide the safety and comfort associated with being among others who have shared similar experiences, a critical issue if particularly sensitive or stigmatizing subjects are being discussed, such as sexual or physical abuse, the use of illicit drugs, or abortions. The free-flowing interaction within the group often stimulates new ideas and allows participants to reflect differently than they might if it were only their own experiences that were being described. Questions, feedback, and challenges from peers can stimulate a much broader and richer exploration of a subject than a one-on-one interaction between a single participant and a researcher.

In some situations, it is best to have a relatively homogeneous group of people who have shared common experiences or who reflect similar points of view. This is particularly true if the topic under discussion involves acts that are censured or proscribed (such as child or spousal abuse), that are potentially embarrassing (such as having been arrested), or that only some people experience (such as childbirth). In other cases (sibling rivalry, for example), a more heterogeneous composition, such as brothers and sisters of different birth orders, could result in a richer understanding of the topic. Problems of group dynamics that can plague therapy groups can also occur in focus groups: one member may attempt to dominate and steer the conversation, other members may be chary about voicing contrary views because of peer pressure, and the group may get off topic. It takes considerable skill to decide on the appropriate composition of a focus group and to manage the group dynamics so that the process is productive. A team of 2 researchers is ideal—one to run the group and the other to take detailed notes—and if the meeting is not being taped, mandatory. Otherwise, observation and recording will be completely inadequate.

In-depth Interviews. As implied by the name, the advantage of long, one-on-one interviews is the intensive and intimate opportunity to hear in detail from one individual. Rather than the breadth of multiple, interacting perspectives gained through a focus group, a more complete picture of the subjective experience and context for a particular person is obtained in individual interviews. The style can range from the informal and unstructured interaction that typifies an ethnographic field interview to a more formal and semistructured “long interview” that purposively covers a set of preselected subtopics (9). When using more structured approaches, one has to be on guard against slipping into doing a quantitative, interviewer-administered questionnaire “in cognito.”

For example, if you find yourself asking a series of closed-ended questions that can easily be answered with “yes” or “no” or a few fixed categories, then you have lapsed back into the quantitative mode. The essential components of in-depth interviews are open-ended questions and a flexible process, so that the interviewees can tell their story in their own words, and unanticipated leads can be followed. Quality data collection is dependent on sensitive and unobtrusive listening that elicits private thoughts and feelings in a nonjudgemental manner. In-depth interviews can take many hours and may involve a series of meetings or sessions in order to adequately cover the topic under discussion. What you should end up with are not only the verbatim recorded words of the respondent(s) but also the field notes of interviewer’s impressions, which supplement the transcript.

Participant Observation. Participant observation involves the researcher observing the phenomenon under study in the naturalistic situation and in “real time.” The balance between participation and observation is variable, ranging from actively taking part in the group that is being observed; through being defined as a member of the group, but not being a participant in all of its activities; to being seen as an observer who is not part of the group. As with most research decisions, trade-offs are involved. The more the researcher is seen as an active member, the more the group members will trust him or her and be open about their thoughts and feelings. There are some circumstances in which it is obvious that the researcher must remain an outsider, however, such as in observing groups of forensic patients or ballet students.

In all cases, though, the involvement with the group is intensive, extends over a period of time, and is marked by communication and interaction, rather than passive reception of knowledge. The purposes of this extended involvement are manifold. A primary one is that the researcher will be able to understand the way the group members think and interpret their world, rather than just being an observer of their behaviour. Further, as the researcher becomes less of a novelty and is seen more as a member, his or her presence will not distort the dynamics of the group or the behaviour of the individuals; that is, the problem of *reactivity* should be lessened, increasing the validity of the observations.

Research Design

Sampling strategies also take a different form in qualitative studies. Two of the hallmarks of quantitative research are *random sampling* and *predetermination of sample size* (10). Subjects are chosen at random for a number of reasons: to meet the assumptions of statistical tests, to avoid bias, and to allow valid generalizations to the population from which the sample was drawn. The sample size is calculated beforehand in order for the statistics to have enough power to detect whether differences between groups or changes over time are “real” or are simply reflections of the vagaries of sampling. The logic behind sample selection in qualitative research is quite different. For the most part, qualitative research relies

on *purposive sampling*, in which respondents are selected precisely because the investigator can learn the most from them. They may have information that others do not have, they may represent the full range or most extreme examples of the phenomenon, they may be the most articulate spokespersons, or they may have a unique perspective (11).

Snowball Sampling. One of the hardest tasks in purposive sampling is finding and making contact with the subjects, whether they be community leaders, patients, or, as in one of our studies (12), people who felt they suffered ill effects from an environmental accident. It is likely, however, that one member of a group knows others in the same situation and so could suggest names and even make the initial contact, smoothing the way for the researcher. In this way, the first person may identify 3 other people, each of whom may know 3 or 4 other people, so that the sample “snowballs” in size. One consequence of this sampling strategy, intended or not, is that the researcher may end up with a relatively homogeneous group of people, all of whom have shared similar experiences.

Key Informants. Key informants are people who, because of their position or experience, have a greater knowledge of what is being investigated than the average person. Their authority can derive from an “inside” perspective or from an external appointment. In the community, for example, they may be religious or political leaders or be seen as the “elder spokespersons.” For example, a student of PG, Tina Pranger, is using qualitative methods to study consumer involvement in mental health service planning and delivery. In addition to holding in-depth interviews with consumers (her primary sources), she is conducting key informant interviews with administrators and careproviders within the 4 organizations under study. These individuals can give an overview of the organizational context and have a perspective that is different from that of the consumers. They also provide an entry into the settings and can serve as “go-betweens,” introducing the researcher to the participants and “legitimizing” the research.

Extreme Cases. Assume that we are interested in studying the factors that predispose some people to physically abuse their children. If we were to select parents randomly, we would likely find only a small proportion who are abusers. By contrast, we could deliberately choose people who have been convicted of abuse and whose histories can thereby bring these factors to light more sharply, especially if they are contrasted with people who, by one criterion or another, are regarded as excellent parents. As another example, if we were looking at the effectiveness of a psychosocial rehabilitation program, we may learn more in less time by interviewing in depth a few people who did very well and a few who did very poorly, rather than by looking at a larger number of people, most of whose progress was average.

Sample Size. When is enough, enough? In quantitative research, we determine sample size a priori based on the magnitude of the effect we are hoping to detect. A very

different criterion is used in qualitative studies: we continue to enrol new people until we are not learning anything new from the next few subjects. In the jargon of the field, we *sample to informational redundancy* or *sample to saturation*. This doesn't mean that numbers aren't important. In qualitative research, just as in quantitative studies, you can have sample sizes that are too small or too large to achieve the desired aims. If our interest is in the range of people's experiences (for example, the different paths to homelessness), then obviously we'll need a relatively large number of subjects, and a single case study would be insufficient. Conversely, large sample sizes could prevent us from fully understanding how people experienced some event (for example, what led to the first psychiatric admission), since there wouldn't be enough time to allow in-depth, detailed analyses (11). What is deemed to be an adequate sample size in qualitative studies is usually smaller than what we see in quantitative research, and it is not unusual for 15 to 20 subjects to be sufficient to meet our aims.

Assuring Data Quality

As is apparent from the discussion so far, the main research “tools” used in qualitative research are the investigators themselves—their impressions, feelings, and interpretations of what they see and hear. Because of this subjective nature of the data, quantitative researchers are apt to dismiss them as unreliable (the data, that is, if not the researchers themselves) and unverifiable. Indeed, the allegations that Margaret Mead saw what she wanted to see and that the tales of guiltless premarital sex were “just so” stories made up by the Samoans unfortunately reinforced this image (13). The reality is quite different. Although the techniques used by qualitative researchers to ensure the reliability and validity of their findings are different from those used by quantitative investigators, they do in fact exist, and they are as rigorous (14).

A primary method to enhance the quality of the data is called *triangulation*, a technique that is familiar to coastal sailors and enthusiasts of World War II spy movies. You remember the scene: the OSS or SOE agent is sitting in an attic somewhere in Germany, hunched over his transmitter, while outside the Gestapo are riding around in a truck with a circular antenna on top. They pick up the direction of the radio, and draw a line on a map. Then they drive to another site, locate the radio again, and draw another line. The spot the lines intersect is where our unsuspecting hero is holed up. In qualitative research, the phenomenon being investigated is found not from different radio locations, but by using different techniques, observers, times, and places.

For example, in our studies of the psychosocial impact of environmental hazards (12), we used a number of qualitative techniques: focus groups, key informants, and in-depth interviews. Next, the transcripts from these interviews were coded for themes by 2 researchers, working independently. Last, our confidence in our conclusions was increased when the same themes emerged in different locales, which were faced with a

variety of situations perceived as hazardous, such as land-fill sites, solid-waste incinerators, and industrial accidents. As we'll discuss later, triangulation can also be achieved by combining qualitative and quantitative methods.

Comparison with Clinical Practice

There are clear similarities between psychiatric clinical practice and these qualitative research data collection methods. With appropriate training (15), the interviewing skills of an expert clinician can be used to great advantage in this type of research where the "use of self as an instrument" is intrinsic. The differences lie in the purpose and the conduct of the research interviews—which are initiated by the researcher, not the client—in that they seek to understand rather than to solve problems or to provide assistance. Interpretation and advice are not offered, and the expert on the subject under discussion is the interviewee, not the interviewer.

There are also major differences in how the data are recorded, analyzed, and reported following a group or individual interview: an aspect of qualitative research that is often underestimated by those who are not familiar with the careful and systematic process of repeated examination and coding that is involved. Irrespective of the actual data collection method used, the interview is almost always tape recorded and transcribed verbatim, and this record is supplemented by "field notes," which provide a context for the interview, as well as the researcher's comments about other aspects of the interaction that may not be apparent from simply reading the transcript. The transcript is then carefully scrutinized and coded for themes (a process that is now made easier by software programs specifically designed for that purpose) in an iterative process of sifting and categorizing to arrive at summary descriptions and conclusions. There is also continual attention to "quality control" in the research process (16), such as having 2 or more coders work independently and documenting decisions made at each step of the coding process so others can follow the inductive line of reasoning and be able to discriminate between good and bad scholarship.

Combining Qualitative and Quantitative Methods

The question of whether qualitative and quantitative methods can, or should, be combined has been the subject of heated debate. The purists in both the quantitative and qualitative camps who argue against such a union stress that the 2 paradigms are based on completely different philosophical assumptions and values (17). To them, the thought of combining methods is tantamount to miscegenation, akin to a marriage of Lucien Bouchard and Shiela Copps: people who communicate in different languages and to achieve different aims and thus doomed to continual fighting if forced to live together. Those who argue for a combination see the methods as different tools, suited for different tasks but potentially both necessary in order to do a good job. The latter viewpoint has recently gained in popularity, particularly in the more

pragmatic fields of program evaluation and policy research (6), where triangulation has become trendy and much has been written about its value (although much less has been said about how to actually accomplish it). Even some people who espouse combining both techniques in one study don't see it as an equal marriage, however, believing that qualitative methods are appropriate only as an initial, hypothesis-generating stage and that a quantitative study must later be used to confirm or refute these hypotheses. What we hope to accomplish in this section is to show how the 2 techniques can be equal partners in the marriage, with each helping the other at every step of the research endeavour: the qualitative study used prior to designing a quantitative one; the 2 techniques run simultaneously so that each can inform the other as the study progresses; and, where the qualitative study is done afterwards, the quantitative investigation used to help explain the findings.

Quality before Quantity

The aim of many studies is to gain a better understanding in an area where there has already been much research done. The new project may involve modifying an existing therapy or applying it to a somewhat different group of subjects. We generally know beforehand what the important outcomes of a study will be and how we should measure them. When we're venturing into a new area, though, we often do not have these landmarks; we may not know what the key dependent, or even the independent, variables may be. Qualitative techniques can very profitably be used in such situations to demarcate areas of potential importance. For example, a former student of DS, Tuanchai Inthusoma, used qualitative techniques for this purpose in a study in Thailand. One aim of the World Health Organization's Expanded Program for Immunization is to achieve an 80% immunization rate in children. However, among children in Thailand's Klong Toey slums, where the investigator works, the immunization rate for measles is far below this target. Some "trialists" were eager for her to do a randomized, controlled trial to determine if various interventions could increase compliance, such as by educating mothers about the possible dangers of measles or how to recognize it. It quickly became clear, though, that it would be a waste of time and effort to do such a study before there was a better understanding of people's perceptions of what measles meant to them and what barriers prevented them from having their children immunized.

Inthusoma used a combination of focus groups with mothers from the slum area and in-depth interviews with both mothers and community leaders in her investigation. A number of factors quickly became apparent. First, any educational program designed to increase the mothers' ability to recognize measles or to see it as dangerous would be superfluous, as their knowledge was not deficient in either area. Second, the women relied on traditional Thai remedies—mainly different forms of cereals—to treat measles. Third, there was a belief that all children have measles as a

normal part of growing up, as well as a prevailing feeling that normal patterns should not be interfered with. Thus, the problem was not ignorance of the need to treat measles *per se*, but rather a different belief system regarding what the proper treatment was and its purpose (they used cereals to ameliorate symptoms, rather than to attempt prevention). The interviews also revealed that the mothers' main source of information about etiology, treatment, and prognosis came from their mothers and mothers-in-law, not the formal health system. Consequently, the educational intervention had to be tailored to take these beliefs into account and the message targeted as much to the generation of grandparents as to the biological parents. Had she not known of this ahead of time, Inthusoma may have given a nonhelpful message to the wrong people. The use of qualitative methods to check assumptions and refine research questions is valuable across and within cultures.

Another sequential use of qualitative followed by quantitative methods is during the development of measurement scales. Focus groups and in-depth interviewing of key informants can identify the domains that should be covered and can provide feedback about the appropriateness, face, and content validity of the individual questions. This approach is becoming very common in the burgeoning field of quality of life (QOL) measures. As one example, another student of DS, Gabriel Ronen, is developing a QOL scale for children with epilepsy to be answered by the kids themselves, rather than the more usual (but probably less accurate) method of asking the parents about the children (18). He ran a series of focus groups with epileptic children and elicited a number of factors about which parents were unaware, such as the feeling of many kids that they had to shield their parents from knowing the full impact of the epilepsy since they felt that the grown-ups would overreact. Another example is in the measurement of satisfaction with psychiatric care. Colleagues of PG, who have tested innovative methods of obtaining client satisfaction (19), used focus groups to generate the attributes of care important from the client's perspective as a first step in the development of a scale. They found, as have others using similar methods (20,21), that interpersonal relationships with staff are of utmost importance and are not adequately represented in most standardized scales.

Quality and Quantity Together

Qualitative methods can be used in the same study with quantitative methods in order to extend and complement findings. PG is one of a team of investigators conducting a study in Toronto of mental illness and pathways into homelessness. A classical epidemiological design that includes a large number of subjects representative of the population of homeless is required in order to assess the distribution of mental illness and the factors that are associated with homelessness within subgroups. Questions of *how many* and *how much* can be answered with such an approach, but the question of *how* requires a different method. In-depth interviews with

a smaller subset of the larger sample, supplemented by collateral interviews with significant others (family, providers, friends) will describe in much greater detail and complexity the process by which individuals start using shelters or living in the street. The combination of a survey and long interviews allows for revisiting familiar categories concerning diagnosis and social factors on a broad scale while exploring new territory about process and context in a more intensive fashion. Both types of information together will provide a better basis for planning strategies for prevention.

Quantity before Quality

Finally, the interpretation and communication of quantitative findings can draw upon qualitative methods for valuable insights and helpful illustrations. In our work with environmental contaminants (12), we found that there was a high degree of distress in communities that were potential sites for solid-waste storage facilities (the new euphemism for garbage dumps), but in communities that already housed such facilities or after the dump was operating, the level of stress was much lower and well within normal limits. The questions that arose after the quantitative study tried to pinpoint the cause of this phenomenon: Do the most distressed people move out of the neighbourhood? Do people adapt to a threatening situation? Was their initial assessment of the situation overly pessimistic? Do they change their evaluation of risk? Since the study is still underway, we do not yet have definitive answers, although it seems as if all of these factors are present to varying degrees. This is a situation where the quantitative study yielded hard data, but their meaning was unclear, so a qualitative study after the fact was necessary.

Practical Issues

In order to conduct studies that combine both methods, it is necessary to have access to a wide range of expertise and skills. This often means using a team approach and asking qualitative and quantitative experts to collaborate, a recipe for disaster (or at a minimum, confusion and dissension) unless the researchers from both traditions have a high degree of mutual respect and openness to learning. The ability to abandon technical jargon and speak plain English, a rare commodity within both methodological camps, is also critical when communicating across boundaries. Careful consideration must be given to design and operational issues. How and when will the 2 types of data be linked? In a fully integrated study, the team will meet and discuss assumptions and findings through all phases so that the results of each can inform the other. If triangulation is the aim, conclusions will be formed in a more separate fashion and then compared to assess the degree to which the multiple sources confirm or contradict each other. The latter is always a possibility, and it should not be assumed that quantitative findings always have greater authority. Erroneous assumptions, invalid measures, insufficient power, and other limitations may result in the quantitative findings being less valid than the qualitative ones (22). The reporting of results also requires forethought.

Journals tend to prefer one type of method over another, and page limits and style requirements are not always conducive to reports that include both types of methods. Despite these potential problems and demanding decisions, there are many rewards to be gained from combined studies, and efforts to reconcile methodological differences can lead to creative and synergistic research.

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Résumé

La recherche qualitative comprend des méthodes nous permettant de mieux comprendre les phénomènes et diverses techniques comme les groupes de réflexion, les interviews en profondeur et l'observation des participants. Les lignes directrices concernant l'échantillonnage et l'analyse diffèrent de celles qui gouvernent les techniques quantitatives, mais on peut les appliquer aussi rigoureusement pour garantir la validité des résultats. Cet article présente ces méthodes et ces critères, et montre comment combiner les méthodes qualitatives et quantitatives afin d'améliorer ce qu'on en retire.