



Mini Review

Qualitative Research and its significance in Medical Education – A Review

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Abstract

A qualitative study examines the nature of phenomena and can be used to answer why something is observed (or not observed), assess complex multi-component interventions, and focus on intervention improvement. Qualitative research is designed to explore the human elements of a given topic, while specific qualitative methods examine how individuals see and experience the world. In Qualitative Research Methods in Education, scholars from around the world meet to discuss qualitative research methods in education, their history, current use, adaptations for specific knowledge domains and situations, and the problems they face. This review is focused on the overview, methods of data collection in qualitative research, writing a research question in qualitative research and its significance in medical education.

Keywords: Qualitative research, data collection, Qualitative Tools,

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OVERVIEW TO QUALITATIVE RESEARCH

A qualitative study examines the nature of phenomena and can be implemented when an effect is observed (or not observed), evaluate interventions which could range from simple and complex, single component or multicomponent, aimed at intervention improvement. Data collection methods include document studies, participant observations, semi-structured interviews, and focus groups. Using qualitative data management software, field notes and audio recordings are transcribed into protocols and transcripts for analysis [1]. A qualitative approach involves assessing complex multi-component interventions or systems (of change), rather than focusing on accreditation, we should focus on improving interventions rather than accrediting them [2]

Quantitative research is expressed in numbers and graphs. It is used to test or confirm theories and assumptions. This type of research can be used to establish generalizable facts about a topic. Common quantitative methods include experiments, observations recorded as numbers, and surveys with closed-ended questions. Quantitative research is at risk for research biases including information bias, omitted variable bias, sampling bias, or selection bias. Qualitative research is expressed in words. It is used to understand concepts, thoughts, or experiences. This type of research enables you to gather in-depth insights on topics that are not well understood. Common qualitative methods include interviews with open-ended questions, observations described in words, and literature reviews that explore concepts and theories. Qualitative research is also at risk for certain research biases including the Hawthorne effect, observer bias, recall bias, and social desirability bias [3]

For both qualitative and quantitative research, the researcher's assumptions shape the direction of the study and thereby influence the results that can be obtained. Both qualitative and quantitative research are based on a logical and repeatable process. Determination for either research method is driven by the problem, gap, purpose, and research questions. Both also include the ability to collect primary and/or secondary data. Cite characters nominating Qualitative Research as one of an ideal Research method in medical Science. Qualitative research is designed to explore the human elements of a given topic, while specific qualitative methods examine how individuals see and experience the world. Qualitative approaches are typically used to explore new phenomena and to capture individuals' thoughts, feelings, or interpretations of meaning and process. Such methods are central to research conducted in education, nursing, sociology, anthropology, information studies, and other disciplines in the humanities, social sciences, and health sciences. Qualitative research projects are informed by a wide range of methodologies and theoretical frameworks [4]

Methods of data collection in Qualitative research [5]:

- i. Interviews: Asking open-ended questions verbally to respondents.
- ii. Focus groups: Discussion among a group of people about a topic to gather opinions that can be used for further research.
- iii. Ethnography: Participating in a community or organization for an extended period of time to closely observe culture and behaviour.
- iv. Literature review: Survey of published works by other authors.
- v. Open-ended surveys and questionnaires.
- vi. Observation.
- vii. Case studies.

viii. Textual or visual analysis (e.g. from books or videos).

Tools for qualitative research [6]:

i. Knowledge of context. Helps in assessing homogeneity of causal processes. Ragin's QCA and critical juncture/path dependency frameworks. Qualitative Comparative Analysis and these other frameworks point to additional variables that explain and potentially overcome causal heterogeneity. Within-case analysis. Evaluates causal processes within cases. Scope restrictions. Specify appropriate domains of comparison. Typologies. Serve to identify multiple domains of causal homogeneity.

ii. Within-case analysis, process tracing. Help identify reciprocal causation. These tools, especially when focused on a sequence of causal steps, serve to test for reciprocal causation as part of the theory.

iii. Reconceptualization. Addresses conceptual stretching through mutual fine-tuning of concepts and case selection.

iv. Addressing causal homogeneity and conditional independence. Help in dealing with problems of overextension.

v. No-variance designs. Facilitate close examination of causal mechanisms and yield descriptive insight into novel political phenomena.

vi. Matching cases on independent variables. Serves the same purpose as statistical control.

vii. Selecting sharply contrasting cases. May permit stronger tests of hypotheses through focus on diverse contexts. High variability specifically on rival explanations may yield more leverage in test of theory.

The role of research questions in the design of Qualitative Tools? [7]

Qualitative research questions focus on in-depth reasoning and quality of results. The qualitative research questions consider the “why and how” aspects of decision-making and don't require any statistical tools in the analytical process, as done in the other statistical analysis. The qualitative analysis doesn't require large random samples, it focuses on small and well-focused data sets, and the research methodology classifies data into patterns to conclude results. Data can be in many forms, such as text, images, sounds, etc. The most crucial requirement for successful qualitative research is an in-depth understanding of the target subject. However, the success of a qualitative survey stems from the qualitative research questions. Below, we discuss how to write a qualitative research question at length. We also explore the various types of qualitative survey questions and the characteristics of good qualitative research questions.

Methods to Write Qualitative Research Questions are as follows: 1. Keep the Questions as per the Qualitative Research Approach-Qualitative research focuses on describing and answering questions about contexts and participants, and serves the following three general purposes: Examine the perspectives of participants towards events, practices, and beliefs; Explore complex research areas and understand specific phenomena and groups; A viable and alternative approach to survey questions that are not quantitative in nature, 2. Focus on Quality, Not Numbers: As qualitative market research and surveys don't focus on numbers, the question can have one or two sub-questions. There are no hypotheses or objectives, and the sub questions are written such that they narrow the focus of your qualitative research. If you insist on having more than 2 sub questions, keep the number as low as possible, with 5 to 7 being the highest number of sub questions., Key considerations for writing research questions for qualitative research are as follows: Relate the central question to the inquiry strategy; Begin with focus question words – “How” or “What“, Keep the research focused on a single concept or phenomena; Avoid using words such as “impact” or “effect” and directional

phrases; Try to evolve during the research and be open-ended without referencing the literature, • Specify the research site and participants,

Sample Script: (How or What) is the (“story of” research; “meaning of” phenomenon; “theory that explains”; “culture sharing pattern”; or “issue in the case of” your research) of (main research topic) for (participants) at (research site). 3. Keep the Questions as per the Type of Research, There are two types of qualitative questionnaires or research – for example one is focusing on the teachers’ experience(skill) and other focus on the knowledge part. The questions should be appropriate for the study. 4. Create Qualitative Statements with Well-Defined Objectives: Ensure that your qualitative statements have a well-defined objective that you can easily communicate to the target audiences. Keep these statements in a single sentence form and make clear the purpose of conducting qualitative research right from the start. This will definitely enhance the results, as respondents understand their contribution towards your research and mark qualitative responses. It is important to outline the main topic of your research that can help respondents understand what they are getting into. Finally, choose qualitative terms that demonstrate quality and the entire sentiment behind your research purpose. Some common examples of qualitative terms are – understanding, describing, exploring, etc. 5. Adding Sub questions: If your main qualitative research question is tough to understand or has a complex structure, you must create sub-questions. Doing so would help your respondents understand the overall research objective in mind, and your research can be executed in a better manner.

The methods of data analysis in qualitative research:

There are 15 Methods of Data Analysis in Qualitative Research described by Donald Ratcliff [8], 1. Typology - a way of classifying things based on patterns, themes, or other factors , groups of data. 2. Taxonomy: Numerous levels of concepts are included in a sophisticated typology. 3. Constant Comparison/Grounded Theory: Review field notes or other documents. Analyze events and behaviour for indicators of categories - name and code them. Identify differences and similarities between codes, 4. Analytic Induction, a very good one: Analyze the event and formulate a hypothetical statement. 5. Matrix Analysis/Logical Analysis: Demonstrating generalized causation through logical reasoning, process, etc. To represent these visually, use flow charts, diagrams, etc. 6. Quasi-statistics - count the number of times something is mentioned in field notes as being very important for estimate of frequency. 7. Event Analysis and Microanalysis: The focus is on finding specific boundaries and factors that indicate boundaries or events. 8. Metaphorical Analysis - usually used in later stages of analysis: Consider different metaphors and evaluate how well they fit the observed phenomena. Listen for spontaneous metaphors and ask participants for metaphors. "Member check" is best for checking the validity of a metaphor with participants. 9. Domain Analysis - analysis of language within a cultural context: Identify cultural patterns within the social situation. Provide participants with information about the social situation. 10. Hermeneutical Analysis (hermeneutics = making sense of a written text): Finding the meaning of the text for people in a specific situation rather than searching for an objective meaning. Videotape - probably needs to be secondary level of analysis. Get with another person who is using another method and analyze their field notes. 11. Discourse analysis (linguistic analysis of ongoing flow of communication), Usually use tapes so they can be played and replayed. Several people discussing, not, individual person specifically. Find patterns of questions, who dominates time and how, other patterns of interaction. 12. Semiotics (science of signs and symbols, such as body language). 13. Content Analysis - not very good with video and only qualitative in development of categories - primarily quantitative and also considered a specific form of typological analysis). 14. Phenomenology/Heuristic Analysis (phenomenological emphasis - how individuals, experience the world) Emphasizes idiosyncratic meaning to individuals, not shared constructions as much. 15. Narrative Analysis (study the individual's speech). Always compare ideas about self. Tend to avoid revealing negatives about

self. Might study autobiographies and compare them.

Limitations/Barrier of Qualitative research [9] are as follows:

- a. Possible small sample sizes
- b. Potential bias in answers
- c. Self-selection bias
- d. Potentially poor questions from researchers
- e. Lack of scientific rigour with poor justification of the methods adopted
- f. Lack of transparency in the analytical procedures
- g. Findings being merely a collection of personal opinions subject to researcher bias
- h. Unreliability due to uncontrolled factors that affect the data
- i. Subjectivity due to the researcher's primary role in analyzing and interpreting data
- j. Time-consuming process
- k. A particular problem could go unnoticed
- l. Limited interpretations of researchers

In *Qualitative Research Methods in Education*, scholars from around the world meet to discuss qualitative research methods in education, their history, current use, adaptations for specific knowledge domains and situations, and the problems they face. The significance as follows: i) Adaptation to natural settings, such as a classroom or laboratory is possible, ii) It is important for students and teachers alike to have the opportunity to explore their motivations, reasoning, decisions, and other inner thoughts, iii) In each setting, it would be helpful to describe the interactions between context and participants, iv) The purpose of qualitative research is to generate hypotheses. The focus of qualitative research is on thoughts, concepts, or experiences. Often, the data collected is narrative in nature and focuses on uncovering insights that lead to testable hypotheses. When a study is in its exploratory stages, educators use qualitative research to uncover patterns or new perspectives and v) It deals with educational problems, regarding students and teachers as well. Within the classroom setting and within the school environment, there are various issues and concerns that are experienced by the teachers and the students. These may be concerned with the teaching-learning methods [10], instructional strategies, infrastructure, understanding academic concepts, performance evaluation techniques and so forth.

Institutions are interrelated through three structures: Signification, domination, and legitimation [11]. Signification (S) refers to structures of meaning or symbols based on representations that come from stocks of knowledge of actors and that are used in their communications; Domination (D) refers to structures of control and power that allows others to bend to one's will using two types of resources: authoritative, which refers to the influence of some actors on others, and allocative, which refers to the control of physical aspects such as equipment or goods. Giddens talks of political institution when authoritative resources are used and economic institution when allocative resources are used. Finally, Legitimation (L) refers to structures conferring rights and obligations. These rights and obligations remind actors of what to do and the consequences of their doing so. Sanctions help to maintain and respect these formal codes. Therefore, the normative dimension refers to the rights and obligations that allow actors to justify their actions. These modalities are ranked S-D-L in symbolic institutions (orders/modes of discourse); D-S-L in political and economic institutions, and L-D-S in

legal institutions. According to Giddens [12], structures of signification always have to be grasped in connection with domination and legitimation; the three modalities are interrelated in practice.

With different stakeholders is a strategy that many such institutions need to follow simply for sustenance. Stakeholder collaborations and partnership differ from one institution to the other. Empirical studies have shown that partnership and collaborations are a winning approach for institutions operating from a state of relative strength. Moreover, Mamdani [13] argues that collaboration and partnerships can provide a much-needed boost in academic and co-curricular offerings for institutions but can weaken certain areas especially when the state becomes the main stakeholder. Educational institutions find themselves in a wide range of financial conditions and one reaction to this is to partner and collaborate with institutions that would be a strategic fit for the future. Stakeholders can sometimes provide effective management, decision making and planning strategy for the institution.

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CONCLUSION:

With different stakeholders is a strategy that many such institutions need to follow simply for sustenance. Stakeholder collaborations and partnership differ from one institution to the other. Empirical studies have shown that partnership and collaborations are a winning approach for institutions operating from a state of relative strength. It is evident that collaboration and partnerships can provide a much-needed boost in academic and co-curricular offerings for institutions but can weaken certain areas especially when the state becomes the main stakeholder. Educational institutions find themselves in a wide range of financial conditions and one reaction to this is to partner and collaborate with institutions that would be a strategic fit for the future. Stakeholders can sometimes provide effective management, decision making and planning strategy for the institution.

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Conflicts of interest

There are no conflicts of interest

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