AM Last Page: Understanding Qualitative and Quantitative Research Paradigms in Academic Medicine

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Qualitative research is becoming more prominent in academic medicine and health care fields, and an increasing number of publications using qualitative methods are featured in prominent journals1–3; thus, recognizing the different available approaches can benefit researchers of all types. While a debate may wage between proponents of qualitative versus quantitative research, both sets of methods—and often a blend of the two—offer important insights into the problems the academic medicine community faces.4–6

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<th>Qualitative paradigm</th>
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<td>Nature of the research question</td>
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<td>How many, how often, what level, and what direction of relationships between defined variables in settings that can be decontextualized: Examples: What is the relationship between student grades and graduation rates? What type and amount of monetary incentive or financial reward affects a medical student’s specialty choice?</td>
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**Inductive by researchers (e.g., normative or transcribed text analyzed thematically for patterns)**

- Case study: An in-depth study of a particular case, which can be descriptive, exploratory, or explanatory
- Ethnography: Research intended to provide descriptions of systems, processes, or phenomena within their specific context; stems from anthropology
- Grounded theory: A theory developed based on the examination of data (rather than applying a predetermined theory)
- Historiography: Research directed at the study of a past event, issue, or problem that uses information from the past
- Phenomenology: The study of individuals’ perspectives on particular phenomena
- Action research: A reflective and team-based approach led by those involved in solving a particular problem
- Mixed methods: A combination of quantitative and qualitative approaches including triangulation design, embedded design, explanatory design, and exploratory design

**Data sources**

Ordinal or cardinal data from surveys, financial reporting, census reports, test scores, demographics, and/or observations

**Analytic techniques**

- Descriptive statistics
- Regression
- Regression discontinuity
- Hierarchical linear modeling

**Assessment of rigor**

- Internal validity (e.g., through study design and procedures)
- External validity (e.g., through criterion measurement)
- Reliability (e.g., through test–retest, internal consistency)

**Strengths**

- Delineates relationships among variables
- Provides generalizable research findings when the data are based on sufficiently sized random samples
- Provides generalizable results when research has been replicated in different populations/subpopulations
- Is useful for large populations

**Weaknesses**

- Narrow variables might not be valid
- Knowledge produced might be too general for direct application to specific contexts or individuals
- Phenomena may be missed if analysis focuses on hypothesis testing rather than hypothesis generation

**Types of designs**

- Experimental: The researcher manipulates all variables including the assignment to treatment and control groups in order to discern causality
- Quasi-experimental: Research using an experimental variable with groups not formed through random assignment or selection
- Surveys: Measurement procedures that involve asking questions of respondents
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**References**