

# Mixed Methods in Health Professions Education Scholarship

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## The Challenge

Answering educational questions in a scholarly way requires a diverse set of conceptual and methodological resources and strategies. Mixed methods approaches can yield robust findings.<sup>1</sup> For example, the Clinical Learning Environment Review (CLER) National Report of Findings, published in May 2016, used mixed methods “to improve accuracy of the findings.”<sup>2</sup> Effectively utilizing a mixed methods approach requires unique knowledge and skills.

## What Is Known

A mixed methods approach is often misconceived as any study using both qualitative data (eg, interviews, focus groups, responses to open-ended questions) and quantitative data (eg, survey statistics such as satisfaction ratings, performance ratings, examination scores). However, a mixed methods approach requires careful thought regarding the problem or question, assumptions about what constitutes evidence, types of data that best inform the problem or question, analytic techniques needed, and resources available.

Mixed methods approaches focus on obtaining contextualized understanding of a phenomenon such as the learning environment explored by the CLER program. This understanding is obtained by taking multiple perspectives and cultural influences into account, with the approach guided by a conceptual or theoretical framework.<sup>1</sup> To obtain these perspectives, researchers use qualitative approaches to explore meaning and processes associated with a phenomenon and quantitative approaches to assess the magnitude and frequency of a phenomenon. (See the online supplemental material for how the CLER report's mixed methods approach addresses these elements.)

## Thinking of Using Mixed Methods? Some Considerations . . .

When considering a mixed methods approach, such as a study to follow up on CLER findings at your institution, think through the elements found in the TABLE.<sup>1,3,4</sup>

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*Editor's Note: The online version of this article contains additional resources for further reading and a table showing how the Clinical Learning Environment Review report's mixed methods approach addressed Creswell's elements.*

## Rip Out Action Items

1. For your next journal club, select a mixed methods study and assess how it addresses the essential elements.
2. Have a perplexing education question? Exploring how you would study it using a mixed methods approach may enrich your understanding. Begin with a discussion of the format and sequencing of data collection and how your study would mix qualitative and quantitative elements.

## How You Can Start TODAY

1. Study recommended mixed methods readings in and beyond health professions education.
2. When you read an article reporting the use of mixed methods, critically review it. Consider the elements described in the TABLE, noting the description of study purpose, conceptual framework, study design, methodological choices (eg, types of data, sequence, analytic process), and how findings are presented. The phrase *mixed methods* is often misapplied. For example, a report describing findings from an evaluation form with Likert scale-type responses and open-ended comments is not a mixed methods approach, unless assumptions and decisions described in the TABLE are included.
3. Identify individuals, evaluators, and researchers who have expertise in mixed methods approaches and ask for their guidance.

## What You Can Do LONG TERM

When you are considering a project that may be suited to mixed methods, ask yourself the following questions:

1. Does the project purpose align with 1 of the common purposes for using a mixed methods approach?
2. Does your question, problem, and/or theoretical orientation lend itself to mixed methods? Will the combination of qualitative and quantitative data strengthen the credibility, validity, trustworthiness, and representativeness of your findings?
3. Do you have the resources, skills, and capacity required to conduct a mixed methods project?

**TABLE**  
Design Elements and Considerations for Mixed Methods Research Studies

Study Elements	Common Features of Study Elements in Mixed Methods Studies	Example: Clinical Learning Environment Follow-Up Study	Explanation
<i>Purpose:</i> What is the purpose of my study?	<ul style="list-style-type: none"> <li>▪ Hypothesis or instrument development and testing</li> <li>▪ Contextualization: understanding specific contexts; replication or transferability across contexts</li> <li>▪ Triangulation/crystallization: comparison, validation, enrichment, or diversification of findings</li> <li>▪ Developing a more comprehensive understanding of a problem</li> </ul>	To determine if the clinical learning environment differs between surgically/procedurally oriented programs and primary care/nonprocedural residency programs	<ul style="list-style-type: none"> <li>▪ Mixed methods quantitative data may indicate differences among environments</li> <li>▪ Qualitative data allows probing of these differences</li> </ul>
<i>Design:</i> What is the structure and timing of data collection and analysis?	<p>Consider purpose, extent, timing, and emphasis in “mixing” of qualitative/quantitative study strands</p> <ul style="list-style-type: none"> <li>▪ Exploratory sequential: qualitative data collected first to inform quantitative</li> <li>▪ Explanatory sequential: quantitative data collected first to guide qualitative</li> <li>▪ Concurrent/embedded: qualitative and quantitative data collected at same time or in close proximity; data analyzed independently or together</li> </ul>	Chose explanatory sequential design	Supports understanding of subtle differences contributing to clinical learning environment scores
<i>Data collection:</i> What types of data are needed? How will data be collected?	<ul style="list-style-type: none"> <li>▪ Choose from the array of data types and data collection strategies               <ul style="list-style-type: none"> <li>○ Qualitative: interview transcripts, field notes from ethnographic observations</li> <li>○ Quantitative: test scores, survey ratings</li> </ul> </li> <li>▪ Define how selected data types and strategies will be integrated</li> </ul>	<ul style="list-style-type: none"> <li>▪ Residents take learning environment survey</li> <li>▪ Investigators conduct follow-up interviews with purposive sample of residents from programs that have high and low survey scores</li> </ul>	Quantitative identifies groups to target as a starting point for qualitative to explore factors contributing to the differences
<i>Data analysis and findings:</i> How will the data be analyzed? What inferences are drawn?	<ul style="list-style-type: none"> <li>▪ Timing/method of analyses involves different assumptions and strategies to ensure rigor; considerations include:               <ul style="list-style-type: none"> <li>○ Emphasis or prioritization of qualitative/quantitative: equal status or not?</li> <li>○ Merging combines qualitative and quantitative analyses; merged data analyzed further</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Quantitative results will guide:               <ul style="list-style-type: none"> <li>○ Qualitative questions</li> <li>○ Whom to include</li> </ul> </li> <li>▪ Qualitative analysis will use a constructivist approach</li> </ul>	Qualitative findings add insight to aid interpretation of quantitative scores

## Resources

1. Creswell JW, Plano Clark VL. *Designing and Conducting Mixed Methods Research*. 2nd ed. Thousand Oaks, CA: Sage Publications; 2011.
2. Koh NJ, Wagner R, Weiss KB, et al. The methodology for the CLER national report of findings 2016. *J Grad Med Educ*. 2016;8(2 suppl 1):15–19.
3. Leech NL, Onwuegbuzie AJ. A typology of mixed methods research designs. *Qual Quant*. 2009;43(2):265–275.
4. Bryman A. Integrating quantitative and qualitative research: how is it done? *Qual Res*. 2006;6(1):97–113.

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