WORKSHOP: Questions to Insights: Crafting High-Impact Questionnaires for Engineering Education Research

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She holds a Ph.D. and M.Ed. in Educational Studies from Ohio University, USA, where her research examined factors influencing international student persistence. At KLE Tech, she has designed and taught courses including *Research Methodology*, *Research and Publication Ethics*, *Engineering Exploration*, and *Design Thinking for Social Innovation*.Dr. Patil's work focuses on evidence-based improvement in teaching-learning, student engagement, and assessment in PBL environments, contributing to advancing engineering pedagogy and faculty scholarship in higher education

Engineering education is increasingly driven by data-informed decisions to improve teaching, learning, and institutional practices. Whether exploring student engagement, evaluating teaching effectiveness, assessing learning outcomes, or investigating attitudes toward pedagogical innovations, **questionnaires** remain one of the most accessible and scalable tools for gathering evidence.

This workshop is designed to bridge this gap. It will provide participants with both the theoretical foundations and practical tools needed to construct valid, reliable, and context-appropriate questionnaires that can enhance the rigor and impact of their research.

Through interactive sessions and hands-on activities, participants will explore the principles of instrument design, learn how to align questionnaires with research questions, practice identifying and avoiding common errors, and gain confidence in developing their own instruments tailored to various research approaches. The workshop will also highlight the importance of **pilot testing and validation** techniques to ensure that the data collected is both meaningful and actionable.

By focusing specifically on the context of engineering education, this workshop offers a targeted learning opportunity for educators and researchers who seek to design questionnaires that are not only methodologically sound but also pedagogically relevant and responsive to the needs of learners and institutions.