Advancing the Academic Enterprise Through Research

Conceptually, science encompasses knowledge development and application using systematic processes of inquiry to improve the human condition.

The systematic pursuit of empirical truths through research is invariably changing and evolving with the exponential increases in technology. These technological advances allow for greater synthesis and integration of information that promotes a better understanding of how things work in our world. As scientific discovery continues to accelerate, we must persist in questioning not just what we know but also what we don't know.

Within our TCU learning community, we pride ourselves as teacher-scholars and involve students in research and creative activities that help promote lifelong learning. Faculty research and scholarship enlightens teaching, keeps academic disciplines up to date and cultivates state-of-the-art learning. Research-active faculty bring enthusiastic, systematic inquiry into their classrooms, engage and inspire students, and pique interest in discovery-based processes.

Moreover, inquisitive students invigorate faculty with their ideas and eagerness to learn. I once overheard a faculty member discussing research ideas suggested by students that could generate interesting directions for subsequent research. Indeed, opportunities for a student-faculty connection around research topics are endless.

Evidence is accumulating about the benefits of student learning from active participation in research processes[1]. Engaging students in research is analogous to Bruner's[2] discovery learning or active participation in inquiry-based problem-solving. Additionally, in that active-learning methods have been shown to improve student performance and reduce failure, the National Academy of Sciences recommended active learning as the preferred teaching practice over traditional lecturing in STEM courses[3].

Undoubtedly, there is a compelling link between research, teaching and learning. Considering that about 25 percent of TCU students plan to attend graduate or professional school, our faculty are compelled to bring their research into classrooms. Early exposure to and involvement in research helps instill a desire for autonomous and continuous learning. Many TCU faculty members already actively involve students in research and provide inquiry-based active-learning opportunities, but as with most important things in life, we always have room for improvement in our pedagogical practices.

Researchers in TCU's Institute of Behavioral Research are constantly looking for new, better and more state-of-the art methods to improve rigor and reproducibility in research. The institute investigations primarily focus on improving the human condition by changing behaviors through the development of effective therapeutic interventions. We are targeting areas of significant public concern, and in recent years have concentrated our research on improving addiction treatments for criminal justice populations and adolescents, as well as reducing the spread of HIV and related infections by evaluating risk reduction and treatment-adherence interventions. Indeed, we can have the greatest advances in health care, but if behavioral adherence to treatment protocols cannot be optimized, these advances will have limited applications and fewer positive effects on illnesses and health.

Acknowledging TCU's religious heritage and the value we place on research and intellectual inquiry, let me leave you with a captivating quote:

Science investigates; religion interprets. Science gives man knowledge which is power; religion gives man wisdom which is control. Science deals mainly with facts; religion deals mainly with values. The two are not rivals.
– The Rev. Martin Luther King Jr. (Sermon, Dexter Avenue Baptist Church, Montgomery, Alabama, Sunday, Aug. 30, 1959)

Patrick Flynn
Saul B. Sells Chair of Psychology
Professor of Psychology
Director of the Institute of Behavioral Research at TCU

1. Healey, M. (2005). Linking Research and Teaching to Benefit Student Learning. *Journal of Geography in Higher Education,* 29(2), 183-201.
2. Bruner, J. (1961). The act of discovery. *Harvard Educational Review,* 31(1), 21-32.
3. Freeman, S. et al. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*, 111(23), 8410-8415.