

Chapter 10

Driving STEM Through Engaged Scholarship and Civic Responsibility: Determining the Constructs for a Model

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ABSTRACT

Pew Research Center revealed a scarcity of U.S. science, technology, engineering, and math (STEM) students with advanced degrees at U. S. higher education institutions. Engaged Scholarship opens broad new outlooks in the understanding of STEM professionals, and in how these individual identities and life experiences act as strengths in tackling engaged work. Exposure to STEM engaged scholarship and civic responsibility continues to break boundaries and restraints understood through four key questions. This research works through who can perform STEM? How can these ‘who’ individuals perform STEM? What results can scientist, technologist, engineers, mathematician, and non-academes teamed together realize? How can academia, government, business, and community bridge the digital divide to ensure a continued flow of STEM ready professionals who are academically prepared and civic minded? This chapter provided qualitative data, explored answers to the four (4) questions, and offered a roadmap to proactivity to recover America’s strength in STEM education.

INTRODUCTION

The purpose of this qualitative data and exploratory text is to provide a model that braces the United States’ efforts to ensure a STEM (Science, Technology, Engineering, Mathematics) ready workforce, through educating students to become the most-talented who are academically and civically ready to deliver research and community solutions. Before moving forward, this researcher introduced the understanding of engaged scholarship. In a pioneering report delivered in 1990, Ernest Boyer introduced the concept of engaged scholarship (Boyer, 1990; Boyer, 1996; Loyola University Chicago, 2016). Through

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his research and publications, Boyer offered that scholarship has to pass beyond the walls of institutions of learning. Scholarship must touch the masses to help solve social, ethical and community concerns.

Today, academia and engaged scholarship and civic responsibility understanding has evolved to conferences such as the Engagement Scholarship Consortium (2017). Such conferences dedicate to quality and distinction in scholarship and engagement locally and internationally. Emerging Engagement Scholars, Outreach and Engagement Practitioners, and Academy of Community Engagement Scholarship are among the types of workshops, networks, and scholarships offered through engaged scholarship conferences (Engagement Scholarship Consortium, 2017). The International Association for Research on Service-Learning & Community Engagement (IARSLCE) (2017), another engaged scholarship organization spotlights study and exploration on service-learning and enabled information discussion and interchange between scholars, practitioners, funders, and students interested in study on engaged scholarship. This association, in effect since 2005 (IARSLCE, 2017), spun from the Annual International K-H Service-Learning Research Conference which received seed money from W. K. Kellogg Foundation. The initial engaged scholarship conferences, under the title, Annual International K-H Service-Learning Research Conference, was held in Berkeley, CA in 2001 (IARSLCE, 2017). Yet another example of an engaged scholarship conference is Pathways to Achieving Civic Engagement Conference (Campus Compact N. C., n.d.) which offers to university/college administrators, faculty, staff in addition to neighborhood and community member helpful and beneficial information and skills for usage in their engaged scholarship and civic responsibility endeavors. This daylong conference provides plenary and breakout sessions. Through sharing of research findings, Pathways to Achieving Civic Engagement Conference apprise of and advance research and practice of neighborhood and community engagement and civic responsibility. This work is completed through the following: efficient and successful curriculum or co-curricular models; innovative program design and collaboration models; institutional capacity building; embedding of the belief, norm or social role within a group, society or membership; established and verified community/institutional impacts; and productive and positive community engagement practices (Campus Compact, n. d.). Workshops and activities make available exploration, resources and best practice models for all facets of civic engagement work. Through these engaged scholarship conferences, civic responsibility emerges. This responsibility encompasses deeds and levels of assertiveness associated with social participation, that can include but is not limited to involvement in government, higher education, church, volunteers and memberships of voluntary associations.

Let us review the definition of engaged scholarship. Engaged scholarship is learning that propels action from academic resources of institutions of higher learning to organize and engage in resolving significant civic concerns, thus providing support for the good of mankind (University of Miami, n.d.). Penn State (2015) provides that engaged scholarship is academic experiences out of the walls of a classroom that is supplemental to classroom education. Another view of engaged scholarship through the lens of Loyola University Chicago is that engaged scholarship is experiential learning that fosters civic-engaged scholarship (Loyola University Chicago, 2016). After the rise of engaged scholarship, the Kellogg Commission offered seven (7) principles that outlined an institution that was swath in engaged scholarship. These criteria are as follows: responsiveness, respect for partners, academic neutrality, accessibility, integration, coordination, and resource partnership (Fitzgerald, Bruns, Sonka, Furco, & Swanson, 2010, p. 12). Not only are institutions of higher learning involved in engaged learning, government, commercial businesses, and non-profits are involved, too. No matter the view, within the expansive grouping of engaged scholarship lies within academic service knowledge and civic reach.

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