



Background and Purpose

Undergraduate research opportunities have been discussed as a high impact practice for student engagement and retention, as well as a promising pipeline to graduate studies. Outcomes produced from undergraduate student engagement in research activities are associated with gains in writing, cognitive, and personal skills, enhanced self-concept, and academic achievement (ASHE Higher Education Report, 2007; Estep, Velasco, Culbertson, & Conner, 2016). Research experiences allow students to engage in deep learning, helping them learn to link ideas and identify patterns using evidence and logic by examining arguments; ultimately developing their own ideas about a particular problem through reflection (Entwistle, 2006). Research demonstrates that this high impact practice enhances a student's link to the campus, faculty, and peers, which in turn supports their persistence (Kuh, 2008; Kuh 2013). Yet engaging minority undergraduate students in research activities has been a challenge in higher education. In many instances minority students are post-traditional students with a profile that is far removed from the traditional student that graduates from high school, immediately enters college, is financed by parents, and complete their degree in four years. Post-traditional students now represent over 80% of the student population and many of these are Latinos, veterans, and African Americans (Santiago, 2015; Soares, 2013). Institutions will have to develop variations in research experiences that provide a good fit for this population of students. They should not be discounted simply because they do not fit the profile of the traditional student who participates in research. The National Center for Education Statistics reports that the average Pell Grant recipient is 26 years of age, 25% of students are parents, almost 40% of undergraduate students are enrolled part-time, and the National Postsecondary Student Aid Study asserts that 82% of undergraduate students reported that they must work. This presents challenges and opportunities for those interested in integrating undergraduates in research.

Facts about Minority Post-Traditional Students

- Commuter Students
- Age 18 and older
- Some are parents
- May be married
- Some are immigrants
- Take more than 4 Years to complete college

- Are wage earners in their homes
- Seek alternative options for learning – online, weekend, evening, or blended courses

- First generation students
- Are from underrepresented populations
- Choose a college based on cost, location and accessibility

Methods

This literature review summarizes studies on undergraduate minority student research experiences from 2012 to 2016. Fifteen articles met the inclusion criteria which included empirical research on the research experiences of minority students across institutions of higher education. Databases included EBSCO, ProQuest, ERIC, World cat, ResearchGate, and GoogleScholar, among others. Articles were organized on an excel spreadsheet to help validate inclusion criteria and to index information about each article for review. Articles were analyzed to link common findings and ideas were extracted from them.

Literature Review Matrix

Author/s
Article Title
Journal /IF
Volume, Number
Year
Theoretical Framework 1
Theoretical Frame 2
Type of Study
Program
State and Country
Method
Sample Size (total):
Faculty/Supervisor
Academic Counselors/Other
Demographics
Gender
Age Range:
US Citizen
Resident
Undocumented
Student Visa/International
Measures
Data Analyses
Limitations
Results/Findings

Characteristics of Successful Research Mentoring Behaviors

- Establish Common Ground
- Personal Connection
- High Levels of Structure
- Options of Research Activities
- Clear Expectations
- Reciprocity/Interdependence
- Frequent Communication and Interaction
- Supportive Relationship
- Mutual Respect
- Shared Values
- Mutual Benefit

bolstered student self-confidence in their academic and problem solving abilities which transferred to resilience. Finally, the structure of the research activity which focused on quality experiences were less faculty centered and more student focused. These were highly structured and not always traditional research mentorships; these allowed students to participate in entire research processes (from hypothesis to findings) and facilitated the academic and professional development of undergraduate minority students.



Conclusions

Mentoring minority students in research is beneficial to the student and the institution. These first hand learning experiences are practical ways of developing professionals across disciplines. With the changes in student profile moving toward the post-traditional student, undergraduate research experiences can respond to these changes by proactively developing realistic, attainable research experiences that focus around relationship, self-efficacy, and that are highly structured. Institutions can find creative ways to embed research across the curriculum by redesigning existing courses to promote research knowledge in stages across courses, institute projects such as mini-grants to fund undergraduate research initiatives for faculty and students, develop variations of research experiences that are sensitive to the schedules and demands of today's post-traditional student. These types of promising practices have the potential to engage students that may not otherwise have the opportunity to engage in research experiences.

References Available Upon Request

Findings

Common themes identified specific characteristics of research experiences that supported minority undergraduate students throughout different types of research activities. From the more traditional faculty led research mentorship to research activities that stemmed from curricular frameworks which were embedded across courses, there were clear behaviors, structures, and supports which created rich experiences for minority students. These were grouped into overarching themes that created meaning for minority students: *relationships, self-efficacy, and structure of the research process*. *Relationships* developed through research experiences helped minority students establish personal links, support systems, and provide access to resources that did not know existed on campus. *Self-efficacy* developed through the deep learning that occurred