Reflecting on Our Roots- Equity and excellence Misnaming a Report ?

- by Shirley Malcom

Reflecting On Our Roots is a series of essays outlining some of the historical context of the field of broadening participation. The essays were originally published in the NSF INCLUDES Open Forum group on Trellis, and are now located in the new Open Forum on Broadening Participation microsite. Shirley Malcom is the Senior Advisor and Director of SEA Change at the American Association for the Advancement of Science and co-PI on NSF grant 1748345 which supports the NSF Open Forum on Broadening Participation in STEM.

In the early 1980's when the research behind the report, *Equity and Excellence: Compatible Goals*, was conducted in support of the work of the National Science Board Commission on Pre-College Education in Mathematics, Science and Technology, it seemed important that the title reinforce the idea that intervention programs to increase equity were not at variance with efforts to support excellence in STEM education. It is time to revisit the central ideas that underlie the implicit assumptions in that title.

Role of Interventions

Many institutions and organizations had initiated programs and projects throughout the previous decades of the Civil Rights Movements to try and make up for poor or missing school-based STEM education. Absent the power to alter what and how such education was provided by school systems, that is, no influence over that system, projects worked to make up for the deficits and deficiencies. They also often focused more on what was not in place rather than identifying and building from assets that the students brought from their homes and communities.

For the most part, these early efforts were not informed by research or evaluation findings, but more by the “intuition” of those who may have successfully navigated the pathways. But the stronger projects (as evidenced by indicators such as longevity, ability to attract resources and, much later, by student outcomes) worked over time to build a knowledge base. These projects seemed to have certain features in common (Link to report: ed257884.tif.pdf pg. 12) including active learning; doing and making; role models; focus on rigorous, quality content; and well-prepared content providers.

Interventions and systems- the populations that were omitted

In many ways interventions pointed the way to researchers and evaluators, suggesting where to dig to find key elements of student success. Certain institutions, at a systems level, also seemed to have figured out what made learning environments succeed or fail rather than trying to "bullet proof” the students.

Science and technology centers and higher education institutions, often colleges and universities serving students from under participating groups, were among the entities that organized efforts to bring more STEM to these students.

So organizations and institutions where there was congruence of mission and where more influence could be exerted took up the mantle of putting programming in place. Women’s colleges and Historically Black Colleges and Universities had long played leadership roles in increasing STEM participation among women and minoritized scholars, having made outsized contributions as baccalaureate origins institutions of these populations that were less represented within the pool of scientists, especially at the doctoral level (https://ncses.nsf.gov/pubs/nsf21321/data-tables Tables 7-7 through 7-15). https://www.science.org/doi/10.1126/science.948740.

Today, at least, there is quite a bit of overlap between origins institutions for men and women. Of the top 20 origins institutions 15 appear on the list for both men and women; the differences between the lists likely relate more to men's higher levels of participation in engineering.

The origins institutions for Blacks still heavily favor HBCUs, out of proportion to the numbers of all Black S&E students they enroll and graduate. And the numbers for women still do not reflect their 50+% presence within higher education. Latinx students' origins institutions tilt towards Hispanic serving institutions

At the heart of this dynamic is a question: Can a program be truly excellent if it is NOT equitable and inclusive? For example, what does a program's failure to recruit, retain and graduate members of groups underrepresented in science and engineering say about program vision, quality and impact?

Compatibility or interdependence

In the 1980's it was probably important to stress that efforts to increase equity in STEM were not compromising excellence. But with growing research on the contributions of DEI to excellence (Scott E. Page *Diversity and Complexity* (2010). how do we challenge current naming traditions to focus on interdependency?