Math Alliance Research Study

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Evaluation vs. Educational Research

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At first glance, the fields of evaluation and educational research seem similar and, in some important ways, they are alike. Both evaluation and research rely on the collection of evidence to answer questions about a particular group or program. Both also require expertise in study design and methods. However, their intended uses are very different and will be elaborated on in this brief. For the purposes of clarification, the particular case of the evaluation of versus research on bachelor-level science, techonology, engineering and math (STEM) intervention programs will be discussed, although research and evaluations can take place in many other program contexts, as well as on policies.

Evaluation

The field of evaluation seeks to determine the merit of programs or policies (see Scriven, nd). Prior to the evaluation taking place, the criteria used to measure the effectiveness or worth of a program are negotiated between the stakeholders requesting the evaluation and the evaluators. These criteria are usually rooted in the values and objectives of the program being evaluated, as well as applicable disciplinary standards.

The focus of an evaluation also depends on the information stakeholders wish to learn about their program. Evaluations can have a formative purpose, aimed at improving the processes during the course of the program, or a summative purpose, which attempts to measure the success of the program in achieving its objectives after the conclusion of the program. Formative and summative evaluations are not mutually exclusive--many evaluations address both areas. Program administrators frequently use the results of an evaluation to make adjustments to how a program is run, how funds are distributed, and whether the program is worth continuing in its present form. Evaluations are increasingly required of programs that receive external funding. Given that many evaluations are used for internal purposes, it is uncommon to publish evaluation results (Weiss, 1998).

For STEM intervention programs at colleges and universities, evaluations have been found to be helpful in justifying the value of the program to multiple audiences, and to inform changes within the program to better meet the program goals. An example of a strategic approach to conducting high-quality evaluations is for STEM intervention program to form partnerships with on-campus graduate departments that offer advanced degrees in evaluation (George-Jackson & Rincon, 2012).

Research

Educational research, on the other hand, is used to generate new knowledge about a set of circumstances, group of people, or materials. Sound research avoids using data to pronounce judgments about the quality of a program or policy. Research focuses on what can be learned from the unique elements in the program and the impacts these have. This distinction from evaluation relates to the difference in how research questions are determined. Researchers typically ask questions formed from theory or knowledge gaps in the field (Isaac & Michael, 1995), while evaluation questions are formed from and within the context of a program (Weiss, 1998). Because of how research questions are formed, studies do not target the work for a specific audience. As a result, the findings of a study might not be used if the research community does not find the work valuable.

Recent research on STEM intervention programs

has looked at the factors that impact the educational attainment of underrepresented populations in STEM. For example, research on the Meyerhoff Scholars Program at the University of Maryland at Baltimore County has identified academic and social integration, financial aid, knowledge building through research experiences and summer bridge programs, and support through mentoring and services to be important factors in keeping talented minorities in science trajectories in school (Maton, Hrabowski III, & Schmitt, 2000). Government funded opportunities for minorities in advanced academic tracks include the Louis Stokes Alliance for Minority Participation Program (LSAMP), the MARC Undergraduate Student Training in Academic Research Areas (MARC), and the Alliance for Graduate Education and the Professoriate (AGEP). One recent research project on the results of a MARC opportunity suggests that student cohorts require a common academic purpose to be successful and that underrepresented minority women struggle more than men to form mentoring relationships with their advisor (Frehill, Lain, Jacquez, Ketcham, & luces, 2007). Gilmer (2007) found that a LSAMP funded program using a STEM focused summer bridge program, scholarship incentives for good grades, and special STEM opportunities for minority students, created a residential school environment that successfully supported minority students in STEM trajectories.

Concluding Remarks

As the discussion above highlights, the distinction between evaluation and research is one of intent rather than process. While both employ the same skill sets, evaluations are usually internal and used to inform program stakeholders, while research contributes to the knowledge base of people outside of the program.

Further Resources on Evaluation versus Research

Reflecting on the Past and Future of Evaluation
Evaluating a Mentoring Program

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