

Why GAO Did This Study

Science, technology, engineering, and mathematics (STEM) education programs help to enhance the nation's global competitiveness. Many federal agencies have been involved in administering these programs. Concerns have been raised about the overall effectiveness and efficiency of STEM education programs.

GAO examined (1) the number of federal agencies and programs that provided funding for STEM education programs in fiscal year 2010; (2) the extent to which STEM education programs have similar objectives, serve similar target groups, and provide similar types of services, and, if necessary, what opportunities exist to increase coordination; and (3) the extent to which STEM education programs measured effectiveness. To answer these questions, GAO reviewed relevant federal laws, regulations, and plans; surveyed federal STEM education programs; analyzed programs' STEM evaluations; and interviewed relevant federal officials. An electronic supplement—[GAO-12-110SP](#)—provides survey results.

What GAO Recommends

GAO recommends that as OSTP leads the governmentwide STEM education strategic planning effort, it should work with agencies to better align their activities with a governmentwide strategy, develop a plan for sustained coordination, identify programs for potential consolidation or elimination, and assist agencies in determining how to better evaluate their programs. OSTP provided technical comments that we incorporated as appropriate. OMB had no concerns with the report.

View [GAO-12-108](#) or key components. To view the e-supplement online, click [GAO-12-110SP](#). For more information, contact George A. Scott at (202) 512-7215 or scottg@gao.gov.

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS EDUCATION

Strategic Planning Needed to Better Manage Overlapping Programs across Multiple Agencies

What GAO Found

In fiscal year 2010, 13 federal agencies invested over \$3 billion in 209 programs designed to increase knowledge of STEM fields and attainment of STEM degrees. The number of programs within agencies ranged from 3 to 46, with the Departments of Health and Human Services and Energy and the National Science Foundation administering more than half of these programs. Almost a third of the programs had obligations of \$1 million or less, while some had obligations of over \$100 million. Beyond programs specifically focused on STEM education, agencies funded other broad efforts that contributed to enhancing STEM education.

Eighty-three percent of the programs GAO identified overlapped to some degree with at least 1 other program in that they offered similar services to similar target groups in similar STEM fields to achieve similar objectives. Many programs have a broad scope—serving multiple target groups with multiple services. However, even when programs overlap, the services they provide and the populations they serve may differ in meaningful ways and would therefore not necessarily be duplicative. Nonetheless, the programs are similar enough that they need to be well coordinated and guided by a robust strategic plan. Currently, though, less than half of the programs GAO surveyed indicated that they coordinated with other agencies that administer similar STEM education programs. Current efforts to inventory federal STEM education activities and develop a 5-year strategic plan present an opportunity to enhance coordination, align governmentwide efforts, and improve efficiency of limited resources by identifying opportunities for program consolidation and reducing administrative costs.

Agencies' limited use of performance measures and evaluations may hamper their ability to assess the effectiveness of their individual programs as well as the overall STEM education effort. Specifically, program officials varied in their ability to provide reliable output measures—for example, the number of students, teachers, or institutions directly served by their program. Further, most agencies did not use outcomes measures in a way that is clearly reflected in their performance planning documents. This may hinder decision makers' ability to assess how agencies' STEM education efforts contribute to agencywide performance goals and the overall federal STEM effort. In addition, a majority of programs did not conduct comprehensive evaluations since 2005 to assess effectiveness, and the evaluations GAO reviewed did not always align with program objectives. Finally, GAO found that completed STEM education evaluation results had not always been disseminated in a fashion that facilitated knowledge sharing between both practitioners and researchers.