



Education Development Center, Inc.

DATE: DECEMBER 12, 2008

TO: EDUCATION POLICY TRANSITION TEAM

FROM: JUDITH OPERT SANDLER, SENIOR ADVISOR, OFFICE OF THE PRESIDENT

RE: STEM EDUCATION

The purpose of this memo is to summarize some specific considerations for improving STEM education that the United States can realize in today's economic and political context. We cannot ensure that our educational system will meet the challenges of providing 21st century education to all of our students unless we make improved STEM education a national priority. To meet this urgency we should:

- Fund the America Competes Act. Reintroduce the Obama/Honda Bill and get it on a fast track to passage, because it offers immediate solutions to urgent needs and complements the America Competes Act. Amend the Act to have stronger support and incentives for K–12 teaching and learning. Argue that improved STEM education offers a sustainable economic stimulus plan for investment in a competitive workforce.
- Hold NSF to its stated mission of “providing the leadership and vision,” and advance it as the pre-eminent STEM educational agency by requiring it to strengthen dissemination and public awareness. NSF must harness and broadcast what is known about rigorous STEM instruction, high-quality assessment, and effective teacher development strategies. Similar directives should apply to all other federal agencies that include STEM education in their missions. As a matter of policy, we need to first disseminate what is known, identify needs, and then create funding channels for new R and D. Per the Obama/Honda bill, establish a repository with a dissemination arm.
- Create a STEM ED Council within OSTP as recommended in the America Competes Act and Honda/Obama bill; broaden membership on the NSB to include K–12 STEM expertise; and establish a STEM Ed office in the U.S. Department of Education that has oversight and leadership for P-20 STEM programs. The Council should identify national problems and set priorities for program funding and defining research across all federal agencies.
- Make STEM teaching and learning a priority in the U.S. Department of Education and Institute of Educational Sciences programs. The funding priorities should be focused on capacity-building programs that can be scaled up quickly. This is particularly important for science, technology and engineering, which have received little attention and support in ED. Programs that fall under areas such as Academic Improvement; School Improvement; Career and Technology Education; and Teacher and Principal Quality programs must include STEM priorities. Dedicate funding in Title II for STEM teacher and administrator professional development.



- Continue Math and Science Partnerships Programs in both NSF and ED, but require they complement each other so they are more comprehensive and systemic, and have capacity for scale up and sustainability. Establish a P–20 Board that oversees both. These programs should address such needs as P–16 alignment, preparing elementary STEM specialists, mentoring models for new teachers, teacher performance assessment, and models for including LEAs in geographic areas not in proximity to IHEs.
- Establish and recruit a National STEM Teacher Corps. Model the program after the National Teacher Corps, established as part of the Higher Education Act of 1965 to provide teachers specifically trained to work in high poverty areas. In this model, prospective teachers are recruited from STEM disciplines and enrolled in participating graduate programs and mentored by master teachers. Include elementary STEM specialists in the program. This preceded the Teach for America program and differs in the emphasis on preparation.
- Create the Teacher Service Scholarships for alternative teachers as well as the Teacher Residency Programs outlined in the Obama-Biden Plan. Enlist states and IHEs that are willing to commit to a national innovation.
- Build stronger federal and state partnerships. Recruit states that have progressive STEM agendas with model approaches ready for implementation and with strong support at the Governor’s and Commissioner’s offices and strong support from higher education and industry partners. Align priorities of state STEM agendas with Regional Educational Labs and Comprehensive Centers. Enlist existing national state associations, partnerships, and networks to develop state leadership models to reach out to struggling states.
- Include science as part of AYP if schools are held to AYP regulations for math and reading. Ensure that science is a core subject. At the same time, step up funding for improved science assessments.
- Ensure STEM content is a central focus of 21st century skills. Partner with business and industry leaders to define 21st century skills in each STEM area.
- Promote a STEM agenda, addressing all four disciplines. We must jointly address and advance the needs of science, technology, engineering, and mathematics, but we also need to address each discipline’s unique policy and program implications.
- Engage parents as advocates for better STEM education. Partner with public media and the Ad Council to launch a campaign to educate and encourage parents on the importance of STEM in their children’s education. The campaign could link parents to resources advocating in their children’s schools and supporting STEM interests at home.
- Encourage President Obama to emphasize the importance of STEM education in his radio talks and national addresses.

Finally, we need to harness the spirit and energy of the Obama campaign to engage the experts and the public alike to advance the STEM agenda.