

In Search of STEM: A Proposal for a Seamless Information System

Despite the urgency to improve STEM education, starting in elementary school, in order to strengthen and nurture Massachusetts' STEM workforce, there is no single site where one can access information about all the programs, projects, products, initiatives, collaborations and services in STEM education and leadership in the Commonwealth and the nation¹. There are many data warehouses, inventories and lists², all of which are disconnected and disparate.

Furthermore, to date, \$10.5 million has been appropriated in MA, and \$4.2 million has been spent or allocated to STEM talent initiative programs.³ Current initiatives have been funded without a strategic state plan, although version one of a state plan was revealed on September 28, 2010⁴.

While action is needed now, we should not duplicate efforts. We must use existing institutional assets and align what is already occurring across the state⁵ before attempting to (re)invent practices already in existence, and to fill in the gaps.

We propose to develop an interactive, searchable and juried/peer reviewed "underwriters' lab/clearinghouse"⁶, "one stop app store" and knowledge exchange to coordinate all the resources that are available to support PK-16 teachers and students to achieve the state's STEM educational goals as indicated in the MA STEM plan. Inclusion in the portal will be determined based on a set of criteria/rubrics selected by representatives of all the stakeholders. The proposed system will contextualizes the content. Users will not have to search around to find out how the resources can be used, how they link to standards, etc.

¹ As recently as July 2009, Converge Magazine (<http://www.convergemag.com/>) made that statement in an unsuccessful attempt to create one.

² <http://nsdl.org/collection/stem-education/>

³ Another \$1 million was allocated to CITI (Commonwealth Information Technology Initiative) for similar purposes. Furthermore in FY07 and FY08 \$2 million was allocated to aid mathematics and science teachers who are on waiver to become certified and \$2 million is allocated to teacher content training in mathematics and science. The Commonwealth received \$13.2M over five years for the development of pre-AP and AP mathematics and science teachers. Just recently MA received \$6M from Race to the Top for STEM education (targeted).

⁴ <http://www.mass.gov/governor/stem>

⁵ Starting with coordinating programs of the Department of Early Education and Care, Department of Education, and Board of Higher Education.

⁶ Either cite my website (<http://www.ikzadvisors.com>) or the Governor's (<http://www.mass.gov>)

There are several models on which we can build, for example, Kayanta,⁷ thus exemplifying our position that unnecessary duplication is the enemy of progress. Focused progress in STEM is urgently needed right now.

A next step is to secure support and funding. With this proposal we request..... from.....for getting the information from the various providers, categorization (what should be included and how to use the information), design (front and back end technology) and evaluation (criteria for inclusion), hosting and maintenance (accuracy, currency, securing updates and updating the system). We intend to bring the information directly to educators in the schools through a regular push email and to remind other stakeholders on a regular basis.

We will build upon existing inventories/warehouses and organize the new portal so users can know what to do with the information. We will engage a person to maintain the portal's currency and accuracy, and to prompt interaction from users.

We welcome partner organizations such as educational and business professional organizations, the MA educational departments and foundations as well as other interested parties to support this initiative and would mount a Futures Search Conference⁸ to develop an action plan to propel the search system forward.

We will try this prototype in MA with local and national resources and then, if successful, roll it out to other states with the capacity to tailor state by state. And the possibility of applying the system to other disciplines such as the arts.

⁷ <http://www.kayanta.com>

⁸ <http://www.futuresearch.net/>