Introduction:

- What is state STEM education policy?
- Why are we interested in understanding state STEM education policy initiatives?
- What was our approach to this project?

Data overview

Recommendations

Challenges

Discussion
What is state STEM education policy?

- STEM education includes physical and natural sciences, technology, engineering, and mathematics.

- State STEM education policy is any type of governmental activity on the state level that influences the regulation or advancement of STEM education.
At the state level, governors and state education policymakers have two major concerns:

1. The percent growth of STEM degrees being awarded in the U.S. is lower than the international growth in STEM degrees being awarded (Thomasian, 2011)

2. The number of STEM degree seeking individuals will not meet the growing number of STEM jobs (Thomasian, 2011)

Figure: Percent Growth in Degrees Awarded, 1998-2006 (Thomasian, 2011)
How are states fostering STEM education through public policy?

Questions we asked ourselves:

- Who are the target audiences for these policies?
- Where are these policies coming from?
- Who are the leading actors?
- Do these policies focus on particular groups of students?
- Should we look at a specific time period?
How are states fostering STEM education through public policy?

Our approach was to collect specific STEM education initiatives.

A STEM education initiative is any state (including public-private) program or policy that aims to advance STEM education.
State STEM Education Policy Infrastructure

- **Type**
  - State
  - Public-Private Partnership

- **Target**
  - Students
  - Teachers
  - Professionals and Research
  - System Reform
  - Awareness

- **Origin**
  - Executive Order
  - Legislation
  - Agency Action
  - Federal Government
  - Other

- **Focus**
  - K-12
  - K-20
  - Higher Education

- **STEM Initiative**
Example: Georgia

- **Type**: State
- **Target**: Awareness
- **Origin**: Agency Action (State Department of Education)
- **Focus**: K-12

Dr. Gilda Lyon, State STEM Coordinator
How many initiatives did we collect?

Total: 403 STEM education initiatives
Who is leading the initiatives?

Public-Private: 160
State: 243
What is the primary policy target/audience?

- Awareness: 114 initiatives
- Professionals and Research: 11 initiatives
- Students: 80 initiatives
- System Reform: 141 initiatives
- Teachers: 57 initiatives
What is the origin of the STEM initiative?

<table>
<thead>
<tr>
<th>Policy Origin</th>
<th>Number of Initiatives</th>
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<tbody>
<tr>
<td>Agency action</td>
<td>213</td>
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<tr>
<td>Executive Order</td>
<td>11</td>
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<tr>
<td>Federal</td>
<td>33</td>
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<td>Legislation</td>
<td>55</td>
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<tr>
<td>Other</td>
<td>91</td>
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</table>
Which agency administers the initiative?

- Board of Education: 12
- Department of Economic Development: 8
- Department of Education: 234
- Department of Higher Education: 5
- Other: 18
Data Demo
Recommendations for Future Projects

1. Compare state investments in STEM education initiatives
2. Examine and compare private and non-profit initiatives with state and public-private initiatives
3. Scrutinize initiatives for grade-level specific targets, e.g. “elementary”, “middle”, “high school”.
4. Compare STEM policy initiative data to other STEM education indicators (i.e., STEM degrees awarded, math and science test scores, STEM workforce)
Challenges of the Data

1. No set of accepted definitions (e.g. initiative vs. program)
2. Much of state funding originates at the federal level – how should it be counted?
3. Many state universities have their own STEM initiatives – should they be counted?
4. Information gathered from web-based research. Did not validate findings with phone or personal interview.
5. Intern work period was 10 weeks so there is much left to do.
Discussion

1. The majority of STEM policy is focused on system reform and awareness (35% and 28% respectively). Why? Are policies concerning these targets the best approach?

2. Do states (such as New Hampshire) that have a low number of initiatives have other methods of promoting STEM education? Are the initiatives perhaps on a local level not covered by our research?

3. Only 14% of the initiatives originate through legislation. Should legislators be playing a larger role in furthering STEM education?
References


• All other photography is courtesy of www.google.com
Thank you!

For more information and feedback

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