National Survey on STEM Education

Special Edition for Educational Leadership Network

Made available by PCS Edventures – STEM Education Experts

http://edventures.com

April 2010

Survey and Analysis by Interactive Educational Systems Design, Inc.
New York, NY
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In Collaboration with Daylene Long, K-12 STEM Education Expert
RESEARCH REPORT

National Survey on STEM Education

Special Summary Edition for Educational Leadership Network

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About this Study
IESD, Inc.a leading education-market research company, in collaboration with K-12 STEM market expert, Daylene Long, created the 2010 National Survey on STEM Education research report. The report delves into the current state of STEM education in K-12 schools, as well as the issues and funding opportunities for making STEM a broader part of the educational landscape. The study delivers science education priorities for 2010-2011. This national survey of more than 300 district education leaders on STEM Education details the areas most likely to receive STEM funding for the next school year and contains a 46-page analysis of findings. The full report is available for sale in the online store at www.sellingtoschools.com.

About PCS Edventures
PCS Edventures, headquartered in Boise, ID, has been a leader in STEM education for over 20 years. PCS delivers high-quality professional development that helps teachers understand and implement STEM education. PCS also develops hands-on learning labs that inspire K-12 students’ imagination, innovation, and creativity. PCS helps make learning core subjects and 21st century skills easier, more engaging, and more effective at all levels. PCS spans the globe with presence in all 50 United States and 13 countries worldwide. Discover STEM at PCS: Go to http://edventures.com.
INTRODUCTION

This report, prepared as a special offer for the Educational Leadership Network, includes two sections of a study by Interactive Educational Systems Design (IESD), Inc. The report summarizes the findings from an online survey of educational leaders conducted during March 2010. The focus of this survey of K-12 district and school STEM leaders and educators was the following:

- Implementation of STEM education currently and in the near future
- The most important challenges facing STEM education
- Funding priorities
- Spending on STEM
- Technology products and services for STEM
- Projections of teacher professional development activity for 2010-2011

A total of 322 educators responded to the survey, with ±300 educators answering most survey questions.1

Based on the first two survey questions, results for subsequent questions were cross-tabulated and analyzed by respondents’ roles in science or STEM education, and by the education levels for which they are responsible. Noteworthy findings based on these cross-tabulations are reported in the Findings in Detail section but not in the Executive Summary section.

The margins of error at the 95% confidence level are as follows:

<table>
<thead>
<tr>
<th>Approximately Sample Size</th>
<th>Margin of Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete sample of approximately 300 respondents</td>
<td>Less than 6%</td>
</tr>
<tr>
<td>Subsamples of approximately 100 respondents</td>
<td>Less than 10%</td>
</tr>
<tr>
<td>Subsamples of approximately 60 respondents</td>
<td>Less than 13%</td>
</tr>
</tbody>
</table>

Note: Results based on a small sample of 60 respondents should be considered with caution.

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1 Exceptions were one question that was intended for respondents from schools and districts that had not implemented integrated STEM programs or courses, and one open-response question asking for recommendations of technology-based STEM products. There were fewer respondents for each of these questions.
SUMMARY OF KEY FINDINGS

Below are five key findings from the March 2010 online survey of K-12 district and school leaders and educators—as reported in April 2010 by Technology and Learning, a publisher of news and best practices for K-12 education. A total of 322 educators responded to the survey, with ±300 educators responding to most survey questions.

Key Findings

1. Professional development (PD) is a funding priority for most STEM leaders and is perceived currently to be insufficient.

2. A majority of respondents projected an increase in technology-delivered STEM PD and a decrease in face-to-face STEM PD.

3. STEM leaders wanted technology tools that would support hands-on science.

4. Most STEM leaders thought that simulation software should be used in conjunction with hands-on activities rather than instead of such activities.

5. A majority of STEM educators thought it was somewhat or very unlikely that eBook readers would be widely adopted in the next five years.

Implementation of STEM Education Currently and in the Near Future

- The respondents were about evenly divided between those whose schools or districts had one or more programs that integrate core concepts of STEM, and those whose schools or districts did not have an integrated STEM program.
Respondents’ Roles in Science/STEM Education

32.0% of the respondents identified themselves as school level science or STEM department chairs or coordinators. Another 18.9% characterized themselves as district level science or STEM supervisors.

The remainder identified themselves as other, including classrooms teachers (about half of the others), state and regional education specialists or consultants, and school principals.

(See Table 1 in the Appendix.)

Education Levels for Which Respondents Were Responsible

Respondents were asked to identify the education level(s) for which they were responsible, and were directed to indicate more than one level as applicable.

- 56.5% were responsible for the senior high level.
- 46.3% were responsible for the middle/junior high level.
- 34.5% were responsible for the elementary level.
Figure 2. For which education level(s) are you responsible? (Please select all that apply.)

- Other (please specify)
- Senior high level
- Middle/junior high level
- Elementary level

(See Table 2 in the Appendix.)

Implementation of STEM Education

- About half of the respondents (49.1%) indicated that their schools or districts had one or more programs that integrate core concepts of STEM.
- The other half (50.9%) were from schools or districts that did not have such a STEM program.

Figure 3. Does your school or district have one or more programs which integrate core concepts of STEM?

[Chart showing distribution of responses with a majority in 'Yes' and a minority in 'No']
Analysis by Role in K-12 Education
A noteworthy difference in response patterns for district science/STEM supervisors v. school-level science/STEM department chairs/coordinators was found. While 67.2% of district science/STEM supervisors that their districts had one or more programs that integrate core concepts of STEM, only 32.8% of school-level science/STEM department chairs/coordinators indicated that they had such a program. This dramatic difference warrants further exploration in follow-up research.

Likelihood of Integrating STEM in the Next 1-3 Years
Respondents from schools or districts that did not have a STEM program were asked how likely their school or district was to integrate core concepts of STEM in the next one to three years.

- A majority (58.6%) reported that their schools or districts were somewhat likely (46.3%) or very likely (12.3%) to do so.
Most Important Challenges Facing STEM Education

When respondents were asked to select up to three of the most important challenges facing STEM education in the U.S., a majority identified the following:

- Funding in K-12 specifically designated for STEM is insufficient (64.2%).
- Professional development for STEM teachers is insufficient (59.7%).
- STEM education in K-8 is lacking or inadequate (55.0%).

More than one third of the respondents (38.4%) indicated that the number of qualified STEM education teachers is too low.

Figure 5. In your opinion, what are the most important challenges facing STEM education in the U.S.? (Please select up to 3 most important challenges.)

(See Table 5a in the Appendix.)

Analysis by Education Levels for Which Respondents Were Responsible

Noteworthy differences in response patterns were found based on the education levels for which the respondents were responsible.

- Respondents responsible for the elementary level were more likely to identify professional development for STEM teachers is insufficient as one their most important challenges (elementary level: 67.6%, middle/junior high level: 59.2%, senior high level: 58.6%)
- In general, the higher the education level for which the respondent was responsible, the higher the percentage of respondents identifying number of qualified STEM education teachers is too low as one their most important challenges (elementary level: 30.6%, middle/junior high level: 35.4%, senior high level: 41.4%).
• Respondents responsible for the *elementary and middle/junior high levels* were more likely to identify *STEM education in K-8 is lacking or inadequate* as one their most important challenges (*elementary level*: 63.9%, *middle/junior high level*: 63.9%, *senior high level*: 49.2%)

(See Table 5b in the Appendix.)

**Projections of Teacher Professional Development (PD) Activity for 2010-2011**

**PD for Science Education**

Respondents were asked whether the activity level for *science education* PD is likely to change or stay the same when comparing 2010-2011 to 2009-2010.

A majority of respondents projected that the following types of Internet-based PD would increase:

- *Webinars* (58.5% indicating these will *increase somewhat*; 10.7% indicating they will *increase significantly*)
- *Video-based training via the web* (57.8% indicating these will *increase somewhat*; 8.0% indicating they will *increase significantly*)

A majority of respondents projected that the following types of face-to-face PD would decrease:

- *Onsite vendor workshops* (42.2% indicating these will *decrease significantly*; 32.9% indicating they will *decrease somewhat*)
- *Conferences* (40.5% indicating these will *decrease significantly*; 27.0% indicating they will *decrease somewhat*)

Respondents were about evenly divided in their projections about *district-led workshops*. 49.5% indicated that these would *increase somewhat or significantly*, and 50.5% felt that these would *decrease somewhat or significantly*.

(See Table 14 in the Appendix.)

**PD for STEM Education**

Respondents were asked whether the activity level for *STEM education* PD is likely to change or stay the same when comparing 2010-2011 to 2009-2010. Overall, results were similar to those for *science education*.

A majority of respondents projected that the following types of Internet-based PD would *increase*:

- *Webinars* (58.5% indicating these will *increase somewhat*; 10.7% indicating they will *increase significantly*)
- *Video-based training via the web* (55.7% indicating these will *increase somewhat*; 8.0% indicating they will *increase significantly*)

A majority of respondents projected that the following types of face-to-face PD would *decrease*:

- *Onsite vendor workshops* (40.1% indicating these will *decrease significantly*; 32.2% indicating they will *decrease somewhat*)
- *Conferences* (40.5% indicating these will *decrease significantly*; 26.3% indicating they will *decrease somewhat*)
Respondents were about evenly divided in their projections about district-led workshops. 47.8% indicated that these would increase somewhat or significantly, and 52.2% felt that these would decrease somewhat or significantly.

(See Table 15a in the Appendix.)

Analysis by role in K-12 education. District science/STEM supervisors tended to be more optimistic in their projections about district-led workshops compared to school-level science/STEM department chairs/coordinators.

- 67.2% of district science/STEM supervisors projected these would increase somewhat or significantly, compared to 44.8% of school-level science/STEM department chairs/coordinators.
- 32.8% of district science/STEM supervisors projected that spending will decrease somewhat or significantly, compared to 55.2% of school-level science/STEM department chairs/coordinators.

(See Table 15b in the Appendix.)

Analysis by education levels for which respondents were responsible. Noteworthy differences in response patterns were found based on the education levels for which the respondents were responsible.

- The lower the education level for which the respondent was responsible, the higher the percentage of respondents projecting that webinars are likely to increase somewhat or significantly (elementary level: 75.0%, middle/junior high level: 70.6%, senior high level: 64.7%).
- The lower the education level for which the respondent was responsible, the higher the percentage of respondents projecting that video-based training via the web is likely to increase somewhat or significantly (elementary level: 71.9%, middle/junior high level: 69.1%, senior high level: 59.9%).
- The lower the education level for which the respondent was responsible, the higher the percentage of respondents projecting that district-led workshops are likely to increase somewhat or significantly (elementary level: 58.3%, middle/junior high level: 53.7%, senior high level: 43.7%).

(See Table 15c in the Appendix.)
## Appendix: Data Tables

### Table 1. Respondents’ Roles in Science/STEM Education

**What is your role in science or STEM education? (Please check all that apply.)**

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>District level science or STEM supervisor</td>
<td>18.9%</td>
<td>61</td>
</tr>
<tr>
<td>School level science or STEM department chair or coordinator</td>
<td>32.0%</td>
<td>103</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>52.8%</td>
<td>170</td>
</tr>
</tbody>
</table>

*answered question 322
skipped question 0*

Other (please specify)

1. Chemistry and Physical Science Teacher
2. professor - inservice
3. State level assessment coordinator
4. STEM consultant
5. Professional developer
6. State Science Instructional Specialist
7. Curriculum and PD for a state-wide initiative
8. University Director of STEM professional development for K-12 teachers
9. VT DOE Elementary math & science assessment coordinator
10. Principal
11. Regional Administrator
12. ISD Consultant
13. Science & Math Teacher
14. Professor
15. Principal - STEM focus school
16. science teacher
17. K-HE Math/Science Center for Mand S Education director
18. Assistant Principal, state organization leader, national organization leader
19. School of Education field supervisor for alternative certification program
20. Science educator
21. STEM Leader
22. Science Teacher
23. District STEM Coordinator
24. University Professional Development Specialist
25. High school level consultant for district STEM modules
26. chemistry professor, teacher educator, chem ed researcher
27. Math Science Center Director
28. State DOE employee and active NSTA member
29. curriculum development
30. RTI Specialist
31. STEM teacher
32. STEM Teacher
33. Distance Learning/Challenger Learning Center
34. Health Occupations I & II Teacher
35. Science teacher specialist
36. science consultant for local county
37. STEM Research Participant (Treatment Teacher)
38. STEM Teacher
39. Professional development provider
40. Science strategist
41. Retired science teacher. National consultant for publisher
42. science teacher
43. science STEMS teacher NSTA presenter
44. biology teacher
45. Science Administrator K-8
46. science teacher
47. Superintendent
48. classroom teacher
49. professional leader and teacher
50. STEM teacher
51. General Science/Chemistry teacher
52. High School Science Teacher
53. District level instructional technology coach
54. County Level Science Coordinator
55. grade 2 general education classroom teacher
56. Science teacher
57. STEM Module Writer-Classroom Teacher
58. STEM Teacher
59. Science Specialist - teacher support
60. STEM teacher
61. Building a Presence Point of Contact
62. K-2 Inquiry science teacher leader
63. science teacher
64. STEM Teacher
65. science teacher
66. college educator
67. Write 5th grade STEM Modules for a private company.
68. state level
69. Curriculum Coordinator
70. State Level Science Consultant
71. STEM PD Provider and Teacher
72. CaMSP Project Director-Math
73. Program Specialist on NSF grant - Southwest Center for Microsystems Education
74. Program Manager
76. ISD Consultant for K-12 Science
77. Teacher teaching STEM in classroom; have written STEM curriculum for district.
78. Teacher
79. Science Teacher
80. Science Teacher
81. STEM Teacher
82. STEM teacher
83. SDE level
84. I provide professional development for a State wide Science grant
85. Secondary mathematics teachers
86. STEM Teacher
87. science teacher
88. NSF Grant PI, provide Prof. Dev. for Educators on Microsystems/STEM
89. Alternative and Correctional Science Educator
90. STEM PD Provider and Teacher
91. 6th grade science teacher
92. teacher
93. STEM teacher
94. Teacher
95. Science liason-middle school
96. Middle School Engineering Teacher
97. work at a science center
98. Teacher, not department chair
99. Bilingual Resource Teacher using Science to build up English Acquisition
100. Science Education Researcher
101. Science educator
102. science teacher
103. Instructional coach
104. Educator
105. Principal of a STEM school
106. administrator
107. Teacher of Gifted Students
108. fourth grade teacher
109. Teacher-social studies
110. Teacher
111. science teacher educator (university professor)
112. Department of Education
113. K-12 Science Program Manager (for AR)
114. State level science coordinator
115. State Level Science/STEM supervisor
116. Director of Secondary Education
117. 6th grade science teacher
118. Teacher
119. state level Science supervisor
120. state level professional development leader
121. State Level Professional Development Supervisor
122. community outreach
123. State Coordinator for NSTA Science Matters
124. Direct non-profit organization providing professional development for K-12 teachers
125. science teacher
126. Teacher trainer
127. statewide MSP instructional coach
128. science (physics) educator
129. STEM teacher
130. science teacher
131. High School Physics Teacher
132. teacher at STEM school
133. STEM Teacher
134. teacher
135. Teacher and workshop leader
136. IB Physics Teacher
137. HS physics instructor and curriculum committee member
138. Teacher
139. physics/chemistry teacher
140. Science teacher (chemistry)
141. Science and Engineering teacher
142. education curator/outreach program: AZ Dept. Mines Mineral Resources
143. Teacher, Physics
144. Science teacher
145. STEM Teacher
146. Physics/Robotics Teacher
147. teacher
148. high school chemistry/physics teacher
149. Science Teacher
150. teacher
151. STEM education professor and professional developer
152. Physics, physical science, & math teacher
153. Science and STEM teacher
154. Principal of a STEM school
155. Science educator
156. Teacher
157. science teacher
158. STEM teacher
159. teacher
160. Principal of a STEM school
161. associate professor and vice chair of biology
162. STEM teacher
163. Informal Outreach Coordinator
164. Professional development for K-12 science teachers
165. informal and out of school support programs
166. Professional Development Provider (STEM)
167. county coordinator
168. Science Specialist for State Wide Grant Program
169. Michigan Math/Science Center Director
170. teacher - physics/engineering
Table 2. Education Levels for Which Respondents Were Responsible

For which education level(s) are you responsible? (Please select all that apply.)

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary level</td>
<td>34.5%</td>
<td>111</td>
</tr>
<tr>
<td>Middle/junior high level</td>
<td>46.3%</td>
<td>149</td>
</tr>
<tr>
<td>Senior high level</td>
<td>56.5%</td>
<td>182</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>12.4%</td>
<td>40</td>
</tr>
</tbody>
</table>

answered question 322
skipped question 0

Table 3a. Implementation of STEM Education

Some schools and districts have implemented programs and courses focused on STEM education—an integrated way of pursuing Science, Technology, Engineering and Math. Does your school or district have one or more programs which integrate core concepts of STEM?

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>49.1%</td>
<td>158</td>
</tr>
<tr>
<td>No</td>
<td>50.9%</td>
<td>164</td>
</tr>
</tbody>
</table>

answered question 322
skipped question 0

Table 3b. Implementation of STEM Education: Analysis by Role in K-12 Education

Some schools and districts have implemented programs and courses focused on STEM education—an integrated way of pursuing Science, Technology, Engineering and Math. Does your school or district have one or more programs which integrate core concepts of STEM?

What is your role in science or STEM education? (Please check all that apply.)

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>District level science or STEM supervisor</th>
<th>School level science or STEM department chair or coordinator</th>
<th>Other (please specify)</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>41</td>
<td>39</td>
<td>81</td>
<td>49.1%</td>
<td>158</td>
</tr>
<tr>
<td>No</td>
<td>20</td>
<td>64</td>
<td>89</td>
<td>50.9%</td>
<td>164</td>
</tr>
</tbody>
</table>

answered question 322
skipped question 0
Table 4a. Likelihood of Integrating STEM in the Next 1-3 Years

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very likely</td>
<td>12.3%</td>
<td>20</td>
</tr>
<tr>
<td>Somewhat likely</td>
<td>46.3%</td>
<td>75</td>
</tr>
<tr>
<td>Somewhat unlikely</td>
<td>29.0%</td>
<td>47</td>
</tr>
<tr>
<td>Very unlikely</td>
<td>12.3%</td>
<td>20</td>
</tr>
</tbody>
</table>

answered question 162
skipped question 160

Table 4b. Likelihood of Integrating STEM in the Next 1-3 Years: Analysis by Education Levels for Which Respondents Were Responsible

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>For which education level(s) are you responsible? (Please select all that apply.)</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Elementary level</td>
<td>Middle/junior high level</td>
<td>Senior high level</td>
</tr>
<tr>
<td>Very likely</td>
<td>6</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Somewhat likely</td>
<td>27</td>
<td>37</td>
<td>42</td>
</tr>
<tr>
<td>Somewhat unlikely</td>
<td>8</td>
<td>17</td>
<td>30</td>
</tr>
<tr>
<td>Very unlikely</td>
<td>3</td>
<td>8</td>
<td>11</td>
</tr>
</tbody>
</table>

answered question 162
skipped question 160
Table 5a. Most Important Challenges Facing STEM Education

In your opinion, what are the most important challenges facing STEM education in the U.S.? (Please select up to 3 most important challenges.)

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional development for STEM teachers is insufficient.</td>
<td>59.7%</td>
<td>190</td>
</tr>
<tr>
<td>Number of students who pursue STEM careers after graduation is too low.</td>
<td>29.9%</td>
<td>95</td>
</tr>
<tr>
<td>Funding in K-12 specifically designated for STEM education is insufficient.</td>
<td>64.2%</td>
<td>204</td>
</tr>
<tr>
<td>Number of qualified STEM education teachers is too low.</td>
<td>38.4%</td>
<td>122</td>
</tr>
<tr>
<td>National set of core common standards for science is needed.</td>
<td>26.1%</td>
<td>83</td>
</tr>
<tr>
<td>STEM education in K-8 is lacking or inadequate.</td>
<td>55.0%</td>
<td>175</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>11.9%</td>
<td>38</td>
</tr>
</tbody>
</table>

answered question: 318
skipped question: 4

Other (please specify)
1. it isn't tested
2. focus on standardized testing for AYP
3. You are attempting to merge historically separate subjects and we have tried and failed at cross-curricula many, many times.
4. lack of available content that is engaging
5. "STEM" is getting buzzy and lacks a common definition nationwide
6. Curriculum is geared toward college prep--what about the other 66%?
7. Current NYS core curricula too broad for integrating multiple disciplines
8. Logistics of schedules, facilities, and separate standards that prevent try integration of the STEM fields
9. Low priority of STEM compared to reading/language arts
10. Lack of proper funding due to the current economy.
11. Defining what is STEM education
12. Clear guidance of what STEM should look like in a classroom and what are the expectations. No documents clearly indicate of how to integrate the philosophy
13. Lack of up to date technology tools K-12
14. All of our curriculums for math, science and tech are different and not linked
15. Students and parents are not encouraged to pursue STEM careers
16. Lack of appropriate, engaging materials that also meet standards
17. No clear goals, technology as fad versus integral part of curriculum
18. Time for STEM (especially science/tech/engineering) education is being cut.
19. Population, in general, doesn't understand the need for strong STEM foundation
20. not specifically in NY state standards, other than the separate entities with some implied blending
21. political turf wars within education between science, math, technology for control of STEM programs and $$
22. Funding to update and maintain technology
23. The required High Stakes Assessments fail to align with or do not support true STEM programs
24. Facilities and scheduling of school day limit real-life applications
25. integration training needed
26. Infrastructure of current schools is not sufficient to support true cross curricular STEM initiatives...STEM programs or STEM curricula is as far as it will fit with the current "silo" infrastructure
27. STEM education should start in primary grades.
28. School leadership in area of STEM
29. focus on facts, procedures, and test-scores instead of helping students fall in love with a discipline area
30. High school science teachers being willing to integrate STEM courses. They protect the "pure" science courses.
31. STEM is not a priority for districts
32. to big a push in technology, at the cost of science
33. Teacher training is lacking in quality.
34. Disagreement among "stakeholders" on desired outcomes and how to get there.
35. limited time for teaching foundation STEM skills
36. Higher education & STEM subjects in the South East are not valued by the general population here in Chattanooga TN
37. there are no societal motivations for students to take the STEM courses
38. Science, Math and Technology teachers teach in different wings of the building. Since each subject is taught, they think they are doing STEM. They don't understand the concept of integrating the fields into a coherent whole.
### Table 5b. Most Important Challenges Facing STEM Education:
Analysis by Education Levels for Which Respondents Were Responsible

In your opinion, what are the most important challenges facing STEM education in the U.S.? (Please select up to 3 most important challenges.)

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>For which education level(s) are you responsible? (Please select all that apply.)</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional development for STEM teachers is insufficient.</td>
<td>Elementary level: 73</td>
<td>Middle/junior high level: 87</td>
<td>Senior high level: 106</td>
</tr>
<tr>
<td>Number of students who pursue STEM careers after graduation is too low.</td>
<td>Elementary level: 29</td>
<td>Middle/junior high level: 46</td>
<td>Senior high level: 61</td>
</tr>
<tr>
<td>Funding in K-12 specifically designated for STEM education is insufficient</td>
<td>Elementary level: 71</td>
<td>Middle/junior high level: 90</td>
<td>Senior high level: 121</td>
</tr>
<tr>
<td>Number of qualified STEM education teachers is too low.</td>
<td>Elementary level: 33</td>
<td>Middle/junior high level: 52</td>
<td>Senior high level: 75</td>
</tr>
<tr>
<td>National set of core common standards for science is needed.</td>
<td>Elementary level: 29</td>
<td>Middle/junior high level: 40</td>
<td>Senior high level: 49</td>
</tr>
<tr>
<td>STEM education in K-8 is lacking or inadequate.</td>
<td>Elementary level: 69</td>
<td>Middle/junior high level: 94</td>
<td>Senior high level: 89</td>
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Answered question: 318
Skipped question: 4

### Table 14. Projections of Teacher Professional Development Activity for 2010-2011—PD for Science Education

Focusing on teacher professional development for SCIENCE education please indicate whether the activity level for PD is likely to change or stay the same when comparing next school year -- 2010-2011 -- to this school year -- 2009-2010.

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<th>Decrease somewhat</th>
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Answered question: 289
Skipped question: 33

### Table 15a. Projections of Teacher Professional Development Activity for 2010-2011—PD for STEM Education

Focusing on teacher professional development for STEM education please indicate whether the activity level for PD is likely to change or stay the same when comparing next school year -- 2010-2011 -- to this school year -- 2009-2010.

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- answered question 289
- skipped question 33
Table 15b. Projections of Teacher Professional Development Activity for 2010-2011—PD for STEM Education: Analysis by Role in K-12 Education

Focusing on teacher professional development for STEM education please indicate whether the activity level for PD is likely to change or stay the same when comparing next school year -- 2010-2011 – to this school year -- 2009-2010.

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answered question 289
skipped question 33

Research Report:
National Survey on STEM Education (IESD, April 2010) 19
Table 15c. Projections of Teacher Professional Development Activity for 2010-2011—PD for STEM Education: Analysis by Education Levels for Which Respondents Were Responsible

Focusing on teacher professional development for STEM education please indicate whether the activity level for PD is likely to change or stay the same when comparing next school year -- 2010-2011 -- to this school year -- 2009-2010.

<table>
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answered question 289
skipped question 33