National Survey on STEM Education

Special Edition for Educational Leadership Network

Made available by PCS Edventures – STEM Education Experts

http://edventures.com

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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:

Approximately Sample Size	Margin of Error
Complete sample of approximately 300 respondents	Less than 6%
Subsamples of approximately 100 respondents	Less than 10%
Subsamples of approximately 60 respondents *Note: Results based on a small sample of 60 respondents should be considered with caution.*	Less than 13%

[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

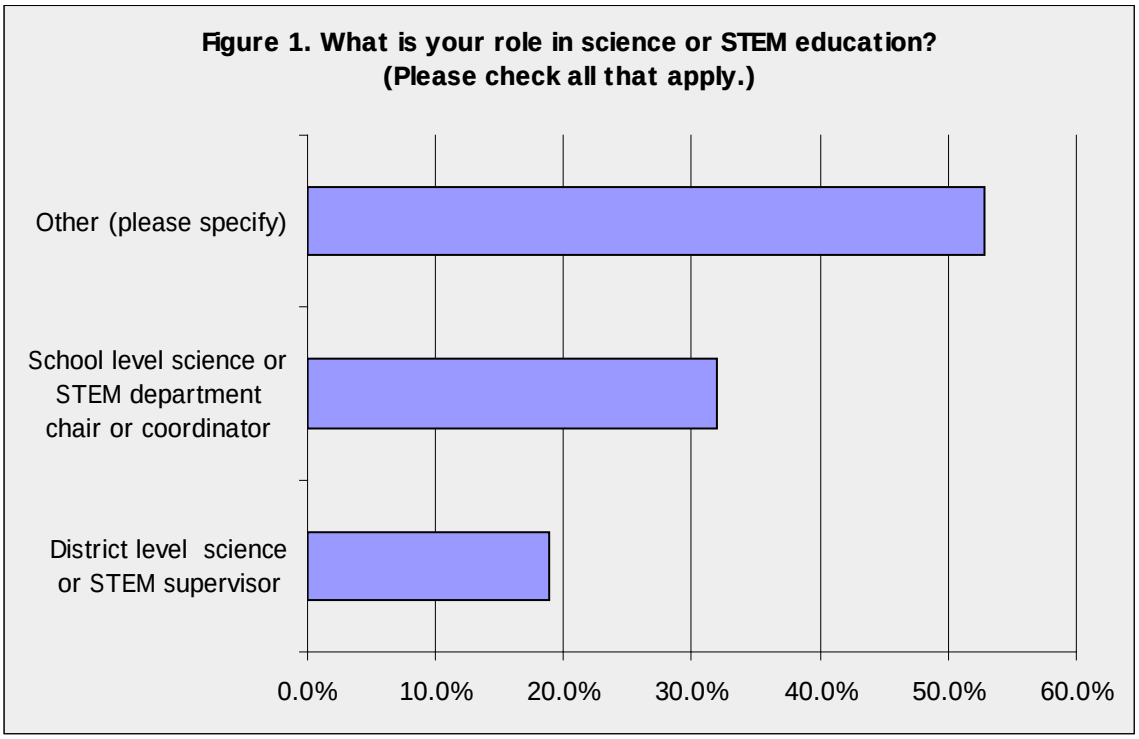
- The respondents were about evenly divided between those whose schools or districts had one or more programs that *integrate core concepts of STEM*, and those whose schools or districts did *not* have an integrated STEM program.

FINDINGS IN DETAIL

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.

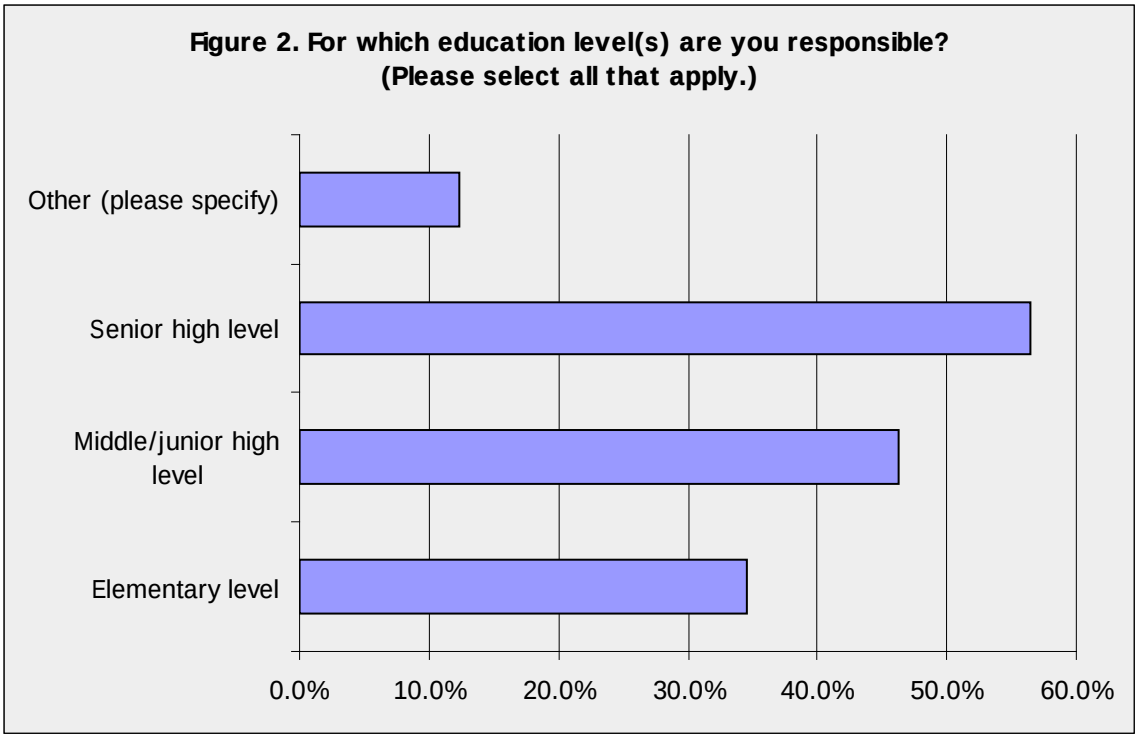


(See Table 1 in the Appendix.)

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.

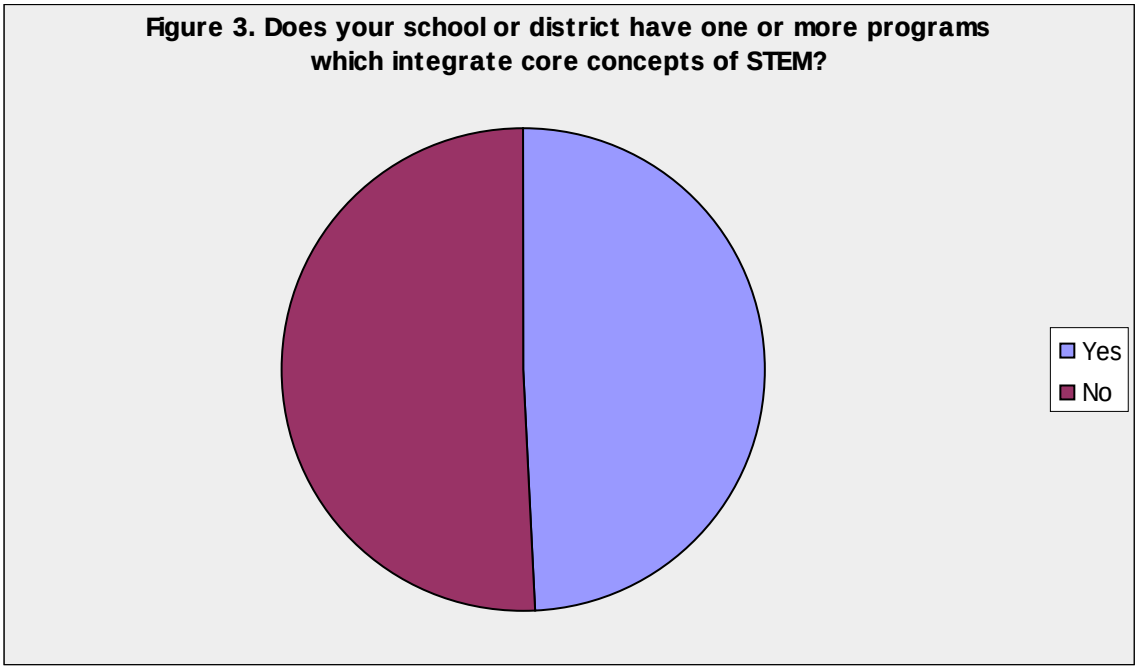
- 56.5% were responsible for the *senior high level*.
- 46.3% were responsible for the *middle/junior high level*.
- 34.5% were responsible for the *elementary level*.



(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.



(See Table 3a in the Appendix.)

Analysis by Role in K-12 Education

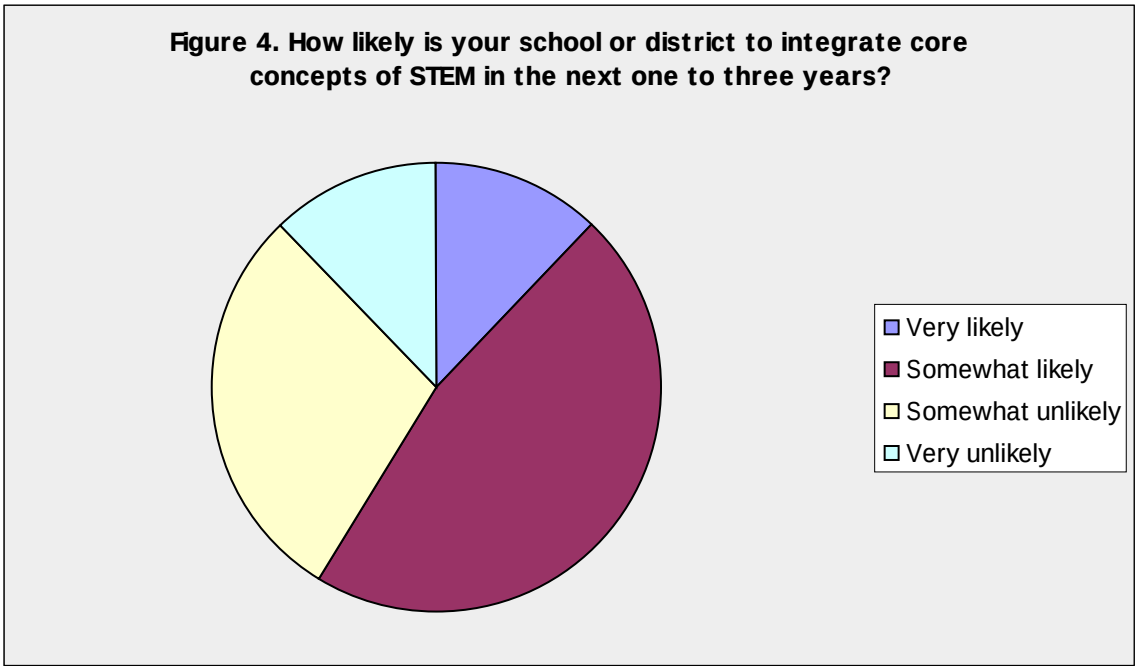
A noteworthy difference in response patterns for district science/STEM supervisors v. school-level science/STEM department chairs/coordinators was found. While 67.2% of *district science/STEM supervisors* that their districts had one or more programs that integrate core concepts of STEM, only 32.8% of *school-level science/STEM department chairs/coordinators* indicated that they had such a program. This dramatic difference warrants further exploration in follow-up research.

(See Table 3b in the Appendix.)

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.



(See Table 4a in the Appendix.)

Analysis by Education Levels for Which Respondents Were Responsible

In general, the lower the education level for which the respondent was responsible, the higher the percentage of respondents reporting that their school or district is *somewhat or very likely* to integrate core concepts of STEM in the next one to three years (*elementary level*: 75.0%, *middle/junior high level*: 61.5%, *senior high level*: 55.4%).

(See Table 4b in the Appendix.)

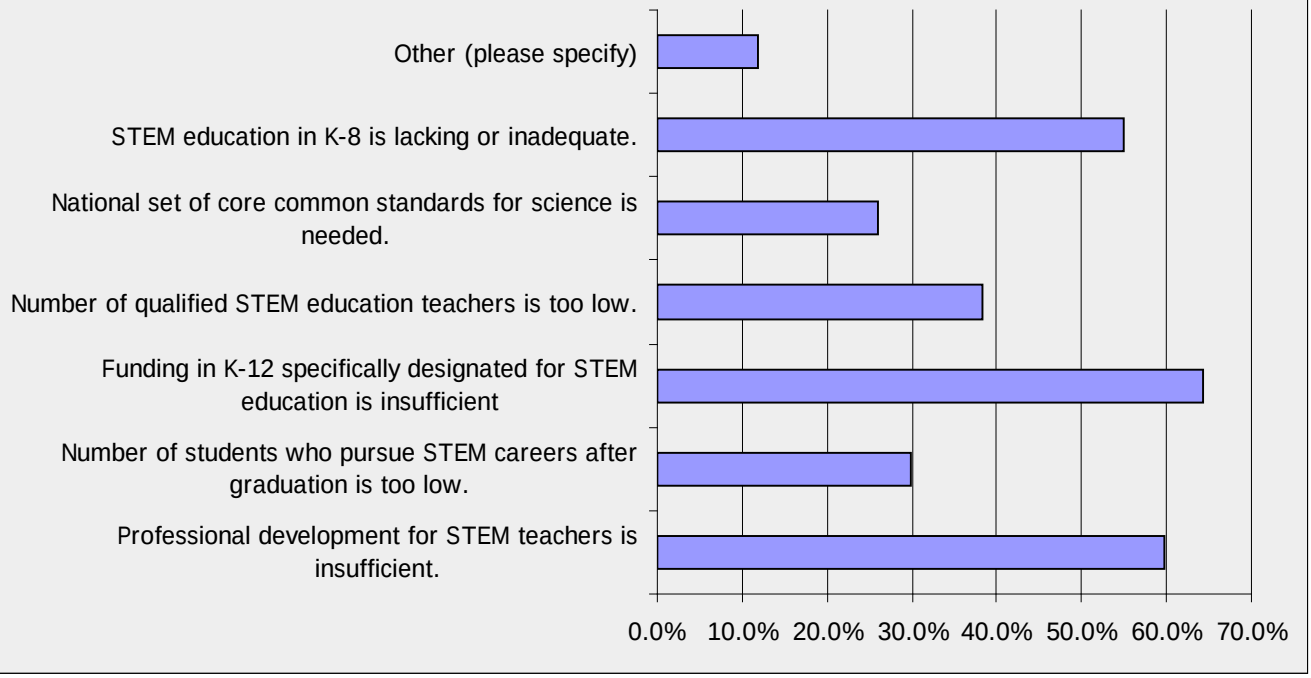
Most Important Challenges Facing STEM Education

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%, m*iddle/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.)		
Answer Options	**Response Percent**	**Response Count**
District level science or STEM supervisor	18.9%	61
School level science or STEM department chair or coordinator	32.0%	103
Other (please specify)	52.8%	170
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
75. State Dept. of Educ. - Science Assessment Spec.
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.)		
Answer Options	**Response Percent**	**Response Count**
Elementary level	34.5%	111
Middle/junior high level	46.3%	149
Senior high level	56.5%	182
Other (please specify)	12.4%	40
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?		
Answer Options	**Response Percent**	**Response Count**
Yes	49.1%	158
No	50.9%	164
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.)				
Answer Options	**District level science or STEM supervisor**	**School level science or STEM department chair or coordinator**	**Other (please specify)**	**Response Percent**	**Response Count**
Yes	41	39	81	49.1%	158
No	20	64	89	50.9%	164
answered question					**322**
skipped question					**0**

Table 4a. Likelihood of Integrating STEM in the Next 1-3 Years

How likely is your school or district to integrate core concepts of STEM in the next one to three years?		
Answer Options	**Response Percent**	**Response Count**
Very likely	12.3%	20
Somewhat likely	46.3%	75
Somewhat unlikely	29.0%	47
Very unlikely	12.3%	20
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

How likely is your school or district to integrate core concepts of STEM in the next one to three years?						
	For which education level(s) are you responsible? (Please select all that apply.)					
Answer Options	**Elementary level**	**Middle/junior high level**	**Senior high level**	**Other (please specify)**	**Response Percent**	**Response Count**
Very likely	6	3	9	4	12.3%	20
Somewhat likely	27	37	42	4	46.3%	75
Somewhat unlikely	8	17	30	2	29.0%	47
Very unlikely	3	8	11	2	12.3%	20
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.)		
Answer Options	**Response Percent**	**Response Count**
Professional development for STEM teachers is insufficient.	59.7%	190
Number of students who pursue STEM careers after graduation is too low.	29.9%	95
Funding in K-12 specifically designated for STEM education is insufficient	64.2%	204
Number of qualified STEM education teachers is too low.	38.4%	122
National set of core common standards for science is needed.	26.1%	83
STEM education in K-8 is lacking or inadequate.	55.0%	175
Other (please specify)	11.9%	38
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.)

	For which education level(s) are you responsible? (Please select all that apply.)					
Answer Options	**Elementary level**	**Middle/junior high level**	**Senior high level**	**Other (please specify)**	**Response Percent**	**Response Count**
Professional development for STEM teachers is insufficient.	73	87	106	26	59.7%	190
Number of students who pursue STEM careers after graduation is too low.	29	46	61	13	29.9%	95
Funding in K-12 specifically designated for STEM education is insufficient	71	90	121	26	64.2%	204
Number of qualified STEM education teachers is too low.	33	52	75	15	38.4%	122
National set of core common standards for science is needed.	29	40	49	8	26.1%	83
STEM education in K-8 is lacking or inadequate.	69	94	89	25	55.0%	175
Other (please specify)	13	21	17	8	11.9%	38
					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.

Answer Options	**Increase significantly**	**Increase somewhat**	**Decrease significantly**	**Decrease somewhat**	**Rating Average**	**Response Count**
Conferences	10	84	117	78	2.91	289
District led workshops	10	133	74	72	2.72	289
Onsite vendor workshops	8	64	122	95	3.05	289
Webinars	31	169	44	45	2.36	289
Video-based training via the web	23	167	53	46	2.42	289
				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.

Answer Options	**Increase significantly**	**Increase somewhat**	**Decrease significantly**	**Decrease somewhat**	**Rating Average**	**Response Count**
Conferences	9	87	117	76	2.90	289
District led workshops	15	123	72	79	2.74	289

Onsite vendor workshops	7	73	116	93	3.02	289
Webinars	26	165	50	48	2.42	289
Video-based training via the web	23	161	51	54	2.47	289
					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.

	What is your role in science or STEM education? (Please check all that apply.)				
Answer Options	**District level science or STEM supervisor**	**School level science or STEM department chair or coordinator**	**Other (please specify)**	**Rating Average**	**Response Count**
Conferences					
Increase significantly	1	6	3		
Increase somewhat	15	34	43		
Decrease significantly	28	30	61		
Decrease somewhat	14	26	40		
	2.95	2.79	2.94	2.89	289
District led workshops					
Increase significantly	5	6	6		
Increase somewhat	34	37	59		
Decrease significantly	7	29	38		
Decrease somewhat	12	24	44		
	2.45	2.74	2.82	2.72	289
Onsite vendor workshops					
Increase significantly	1	1	5		
Increase somewhat	16	25	36		
Decrease significantly	22	38	60		
Decrease somewhat	19	32	46		
	3.02	3.05	3.00	3.02	289
Webinars					
Increase significantly	6	10	11		
Increase somewhat	36	54	81		
Decrease significantly	8	15	30		
Decrease somewhat	8	17	25		
	2.31	2.41	2.47	2.42	289
Video-based training via the web					
Increase significantly	6	7	11		
Increase somewhat	37	55	75		
Decrease significantly	6	16	32		
Decrease somewhat	9	18	29		
	2.31	2.47	2.54	2.47	289
				answered question	**289**
				skipped question	**33**

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.

	For which education level(s) are you responsible? (Please select all that apply.)					
Answer Options	**Elementary level**	**Middle/junior high level**	**Senior high level**	**Other (please specify)**	**Rating Average**	**Response Count**
Conferences						
Increase significantly	2	5	3	1		
Increase somewhat	28	42	49	4		
Decrease significantly	44	63	75	17		
Decrease somewhat	22	26	40	11		
	2.90	2.81	2.91	3.15	2.89	289
District led workshops						
Increase significantly	5	9	9	0		
Increase somewhat	51	64	64	14		
Decrease significantly	21	38	41	10		
Decrease somewhat	19	25	53	9		
	2.56	2.58	2.83	2.85	2.69	289
Onsite vendor workshops						
Increase significantly	3	6	3	0		
Increase somewhat	23	34	42	10		
Decrease significantly	36	52	62	14		
Decrease somewhat	34	44	60	9		
	3.05	2.99	3.07	2.97	3.03	289
Webinars						
Increase significantly	8	13	9	7		
Increase somewhat	64	83	99	16		
Decrease significantly	10	22	30	4		
Decrease somewhat	14	18	29	6		
	2.31	2.33	2.47	2.27	2.38	289
Video-based training via the web						
Increase significantly	8	12	7	5		
Increase somewhat	61	82	93	16		
Decrease significantly	12	21	33	5		
Decrease somewhat	15	21	34	7		
	2.35	2.38	2.56	2.42	2.45	289
					answered question	**289**
					skipped question	**33**