Appendix

STEM-ALL Participants' Self-Assessment of Program Impact in the Teaching Categories of What, How, When, Materials, and Events/Activities

Total Pages 13

Total Number Respondents = 48   Total Number Response Items = 239

Category (What, How, When, Materials, Events/Activities)	**Number Group A** *n* = 23	**Number Group B** *n* = 25	**Illustrative Quotes**
What: Integrated/connected STEM Content or STEM Careers	8	13	". . . more scientific inquiry-based projects are implemented in guided-studies courses." ". . . . connect the content the State and district dictates . . . to STEM careers."
What: Research and Writing	2	6	"It has empowered me to go back to my grade-level team and incorporate more research design in our science and literacy instruction."
What: Inquiry-based Projects	3	1	"I approach more things from guided-inquiry model now than I have before."
What: Information Literacy	1	1	"I have made the effort to include more data literacy in my unit lessons . . . ."
What: Other	1	0	"It has also empowered me to join my district's leadership committee."
What: Little or No Change	4	3	"It hasn't." "I'm a STEM teacher but this course did not help change the way I would teach." "Hasn't really changed what I will teach, but more how I will do so."
How: Focused Planning for Guided Inquiry, STEM	15	10	"I now look at my lessons as an opportunity for students to find most of

Integrated Content			the answers instead of me giving it to them."
			"I try to encourage more questions and avenues for further research and focus less on providing all the answers."
			"I will try to incorporate more opportunities for students to take on STEM challenges."
How: Encouraging Students' Interests and Research Questions	4	8	"I am going to try to encourage students more to pursue research in their own scientific interest so that projects we do carry more meaning."
			" . . . to apply research concepts to real life scenario."
			" . . . more time for students to share their findings and defend conclusions, which is something that I now know my units have lacked."
How: Collaboration/Co-Teaching	6	5	"It has changed how I work with the science teachers in my building."
			". . . work with the librarian to find ways to make math relatable . . . through projects and onsite discussion with professionals from the real world."
How: Little or No Change	1	2	"We are a school that does use the librarians when collaborating on a project."
When: School Determines	2	2	". . . . time lines are driven by curriculum guides."
			"Districts control my schedule and instructional unit guide."
When: Exercises	14	18	". . . classes have helped me to

Professional Judgment			prioritize what to teach when students come in. . . have better conversations with teacher regarding what their students need to learn and when."
			"Integration of certain skills within content may become more cohesive with my new knowledge."
When: Little or No Change	5	2	"It has no affect." "I can't say this category will change much."
When: Other	1	3	"It has given me a good idea of how to approach presenting at conferences and when is best to plan certain programs."
Materials: Use of Databases and Other Electronic Resources	6	15	"I recently used a database with my students that I used in my STEM college class." "I know many more quality search engines and databases." "It exposed me to several new websites and the State of Kansas library system and database searching."
Materials: Use of Books (Print)	3	2	"I placed orders for STEM-related books in our library collection."
Materials: People Resources	3	4	"Yes, I am planning activities with more community resources, including community representation from professionals in STEM fields." "Community resources need to be utilized including corporations, business leaders, as well as academia . . ."
Materials: Other	2	6	"I am always on the lookout to build

			my resources both intellectually and physically.
			Curiosity, wonder, and grants makes this more possible."
			"Since we have a new textbook this year, I will have become more familiar with it before I can use other materials/resources."
			"This class has pushed me to use resources that I don't usually think of and introduced me to new avenues to conduct research."
Materials: Little or No Change	8	0	"I have always heavily utilized databases for research with students."
			"No really, I have always used databases in my teaching."
Events/Activities: Curricular	19	19	"It has greatly affected by STEM activities and events. It has helped me develop and give the students a more engaged learning session."
			"I will be introducing our new makerspace that will involve extracurricular opportunities in the mornings before school."
			"Our school is moving to a more problem-based learning environment and STEM activities will fold nicely into that teaching shift."
Events/Activities: Community	1	0	"One collaborative project where I embedded inquiry was so inspiring to our math teacher that she created a community sharing event where the students shared their findings with parents, community members, and board members."

Events/Activities: Little or No Change	8	2	"My school will not incorporate STEM."
			"I am disheartened that I would encounter a struggle [given] all that we have learned . . ."
Total Response Items (239)	118	121	