

# Agriscience Teachers Beliefs about STEM Illumination after an Immersive Professional Development Experience: A Q Sort Study

## Q-Set Concourse Reflective Statements

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ITEM No.	Statement	Theoretical Category
1	[Program] helped me understand how integrating STEM into floriculture content may help future generations solve global issues and problems	Behavioral Beliefs
2	[Program] made me aware of how integrating STEM concepts in floriculture content may assist students with gaining a better understanding of how the world works	Behavioral Beliefs
3	[Program] opened my eyes to the reality that integrating STEM into floriculture content may negatively affect relationships between educators and learners because the learning environment becomes more stressful	Behavioral Beliefs
4	[Program] showed me that integrating STEM into floriculture content could be controversial because some concepts require learners to question their worldviews and beliefs	Behavioral Beliefs
5	[Program] brought to my attention how integrating STEM into floriculture content requires additional time from educators	Behavioral Beliefs
6	[Program] made me recognize that integrating STEM into floriculture content helps learners gain important critical thinking skills	Behavioral Beliefs
7	[Program] helped me understand how integrating STEM into floriculture content positively affects the relationship between educators and learners because the learning environment becomes more engaging	Behavioral Beliefs
8	[Program] made me aware of how integrating STEM concepts into floriculture content benefits students because it is generally more hands-on	Behavioral Beliefs
9	[Program] opened my eyes to importance of integrating <i>science</i> into floriculture content	Behavioral Beliefs

10	[Program] showed me the importance of integrating <i>technology</i> into floriculture content	Behavioral Beliefs
11	[Program] brought to my attention the importance of integrating <i>engineering</i> into floriculture content	Behavioral Beliefs
12	[Program] made me recognize the importance of integrating <i>mathematics</i> into floriculture content	Behavioral Beliefs
13	Because of [Program], I now recognize that the people I will work with, whose opinions matter to me, will encourage me to integrate STEM concepts when teaching floriculture	Normative Beliefs
14	[Program] helped me understand that leaders whose opinions I value will encourage me to improve my knowledge and skills in STEM integration to improve my teaching of floriculture content	Normative Beliefs
15	As a result of [Program], I feel like teachers need to improve their STEM knowledge and skills to effectively teach floriculture	Normative Beliefs
16	My mentors encouraged me to engage in [Program] to improve my STEM knowledge and skills in floriculture	Normative Beliefs
17	My peers who are important to me encouraged me to participate in [Program] to improve my STEM knowledge and skills in floriculture	Normative Beliefs
18	Although I participated in [Program], I do not feel pressure to improve my knowledge and skills in STEM integration	Normative Beliefs
19	Attending professional development programs, such as [Program], to improve knowledge and skills in STEM to better teach floriculture is <i>not</i> important within my social group	Normative Beliefs
20	People that influence me do not talk about professional development opportunities such as [Program]	Normative Beliefs
21	My mentors encouraged me to improve my knowledge and skills in <i>science</i> through [Program] to teach floriculture better	Normative Beliefs
22	My mentors encouraged me to improve my knowledge and skills in <i>technology</i> through [Program] to teach floriculture better	Normative Beliefs
23	My mentors encourage me to improve my knowledge and skills in <i>engineering</i> through [Program] to teach floriculture better	Normative Beliefs
24	My mentors encourage me to improve my knowledge and skills in <i>mathematics</i> through [Program] to teach floriculture better	Normative Beliefs
25	[Program] helped me realize that emphasizing STEM in floriculture could create an unsafe learning environment for learners because they are unprepared for such concepts	Control Beliefs

26	[Program] made me aware of how integrating STEM into floriculture content is difficult	Control Beliefs
27	[Program] showed me that integrating STEM concepts into floriculture content is challenging because many learners do not have a basic understanding of STEM	Control Beliefs
28	[Program] opened my eyes to the reality that integrating STEM in floriculture is easy because it naturally aligns with the curriculum	Control Beliefs
29	[Program] helped me understand how integrating STEM into floriculture requires additional effort by educators because they have to provide assistance to learners who do not easily grasp STEM concepts	Control Beliefs
30	[Program] made me aware of how integrating STEM into floriculture is difficult because doing such requires a financial commitment that is unrealistic	Control Beliefs
31	[Program] brought to my attention how integrating STEM into floriculture is difficult because many learners are uncomfortable with applying the concepts in the real-world	Control Beliefs
32	[Program] helped me understand how easy it is to integrate <i>science</i> concepts when teaching floriculture	Control Beliefs
33	[Program] made me aware of how easy it is to integrate <i>technology</i> concepts when teaching floriculture	Control Beliefs
34	[Program] opened my eyes to the reality that it is easy to integrate <i>engineering</i> concepts when teaching floriculture	Control Beliefs
35	[Program] showed me that it is easy to integrate <i>mathematics</i> concepts when teaching floriculture	Control Beliefs
36	[Program] brought to my attention how difficult it is to integrate STEM concepts when teaching floriculture because of the lack of available resources	Control Beliefs

*Note.* Statements were grounded in Ajzen's (1985) theory of planned behavior and derived from previous [Program] participant-produced writings and a review of the relevant literature on STEM.