

## **Optional Extra-Credit Assignment**

One of the challenges of combining music and STEM is determining whether this approach is actually beneficial to students. For example, it is not really clear whether music can improve students' understanding of STEM content. In this optional assignment, you will consider how this question can be studied as a form of research.

One way of studying the effects of music is to compare a with-music group to a no-music group. Consider the following study. Each visitor to a booth at a science outreach event is randomly shown a short STEM-related video that includes music OR a video that is similar but does not include music. The video is followed by a "distractor video" and then a short quiz to see how well information from the first video was absorbed and retained. Visitors' quiz answers are stored for later analysis. The hypothesis might be that visitors who get the videos with music will do better on the quizzes than visitors who get the no-music videos.

Here are a couple of pairs of exercises that could be used in such a study:

- Half of visitors get [http://singaboutscience.org/quizzes/page1mc.php?quiz\\_id=16](http://singaboutscience.org/quizzes/page1mc.php?quiz_id=16) (with music); the other half get [http://singaboutscience.org/quizzes/page1mc.php?quiz\\_id=17](http://singaboutscience.org/quizzes/page1mc.php?quiz_id=17) (no music)
- Half of visitors get [http://singaboutscience.org/quizzes/page1mc.php?quiz\\_id=18](http://singaboutscience.org/quizzes/page1mc.php?quiz_id=18) (with music); the other half get [http://singaboutscience.org/quizzes/page1mc.php?quiz\\_id=19](http://singaboutscience.org/quizzes/page1mc.php?quiz_id=19) (no music)

Your assignment is to inspect these exercises (by following the links above) and then answer the following question in 150-500 words:

*What is good about the design of this study, and what is not so good? Is this study likely to show a positive effect of music on STEM knowledge? Why or why not?*

If you wish to do this assignment, you should submit your answer by Friday, August 2 at 5pm. After our final class (Aug. 1), answers should be submitted via email (to [crowther@u.washington.edu](mailto:crowther@u.washington.edu)).