



A Method for Integrating Science Podcasts in the Undergraduate Classroom

What is a Podcast?

A podcast is a radioshow distributed through websites or over apps, focused on a theme, with episodes released on a regular basis (e.g. every Wednesday). Episodes can be streamed by the user or downloaded to devices for listening later. Examples of podcasts containing science content are listed in Table 1.

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Table 1: Podcasts containing science content

Podcast	Episode	Content
Stuff You Should Know	How the Scientific Method Works	Scientific Method, Independent and Dependent Variables, Control Group
Radiolab	Colors	Nature of Light, Biological Perception of Color
Freakanomics Radio	How Do We Really Know What Works in Healthcare?	Randomized Control Trials
StarTalk	Cosmic Queries- Climate Change	Climate Change, Ocean Circulation

Figure 1: Example Discussion Questions

Discussion Questions Stuff You Should Know How the Scientific Method Works
(1) What are the two types of data? Describe them and an advantage of each.
(2) What are the two types of reasoning? Describe them.
(3) What's the difference between a theory and a hypothesis in science?
(4) How was the scientific method universal?
(5) What do they mean when they say science is not in a vacuum?
(6) What was the hypothesis of spontaneous regeneration? How was it disproven? How does this experiment show how the scientific method works?
(7) What are the two types of variables of the scientific method? Describe them.
(8) What is a control group?
(9) What are the limits of the scientific method?

Table 2: Methods of Integration

Option #A In Class Discussion	Option #B Supplemental Activity
<ul style="list-style-type: none"> Give students the discussion questions ahead of time (e.g. Figure 1) and instruct them to listen to the podcast and to try to answer the questions before the next class meeting In class go through the questions one at a time asking students the prompted discussion questions 	<ul style="list-style-type: none"> Embed the podcast discussion in a learning management system with an attached quiz that students must fill out as they listen to the podcast Tell the students to listen to the podcast and complete the quiz outside of class

Challenges

- Second language students can struggle with the purely audio format.
- Some students need incentive to listen to the podcast

Additional Readings

Evans, C (2008) The effectiveness of m-learning in the form of podcast revision lectures in higher education. *Computers and Education* 50. 491-498

Bolliger, D. U., Supanakorn, S., & Boggs, C. (2010) Impact of podcasting on student motivation in the online learning environment. *Computers and Education* 55. 714-722.