

## Introduction

While innovative advances in the sciences happen every day, few outside the field actually follow them. Levels of scientific literacy across Canada fluctuate widely, with devastating consequences on public opinion and policy (1). The rise of TED talks and the popularity of public science books demonstrate that it's not scientific content people are averse to; people are fundamentally curious about the inner workings of our world. The issue is the form: expensive textbooks and dense academic journals are not conducive to learning for many people, students and citizens alike.



Figure 1: Cells at Work. Written by Akane Shimizu, Kodansha Comics

## Problem

Research has demonstrated the potential of narrative as a powerful tool for learning, one that's especially necessary for the sciences (2). The Japanese anime *Cells at Work* (see Figure 1), whose main characters are anthropomorphized blood cells, is just one example of the potential fiction has as a method of science communication. Podcasting is another form of media that can aid scientific literacy in a number of ways (see Figure 2). Its audial nature allows it to be consumed while engaged in other menial tasks, such as cooking, waiting for public transit, or cleaning the house. A study found that including podcasts as part of an online curriculum resulted in higher motivation and greater attention to the subjects studied (3).

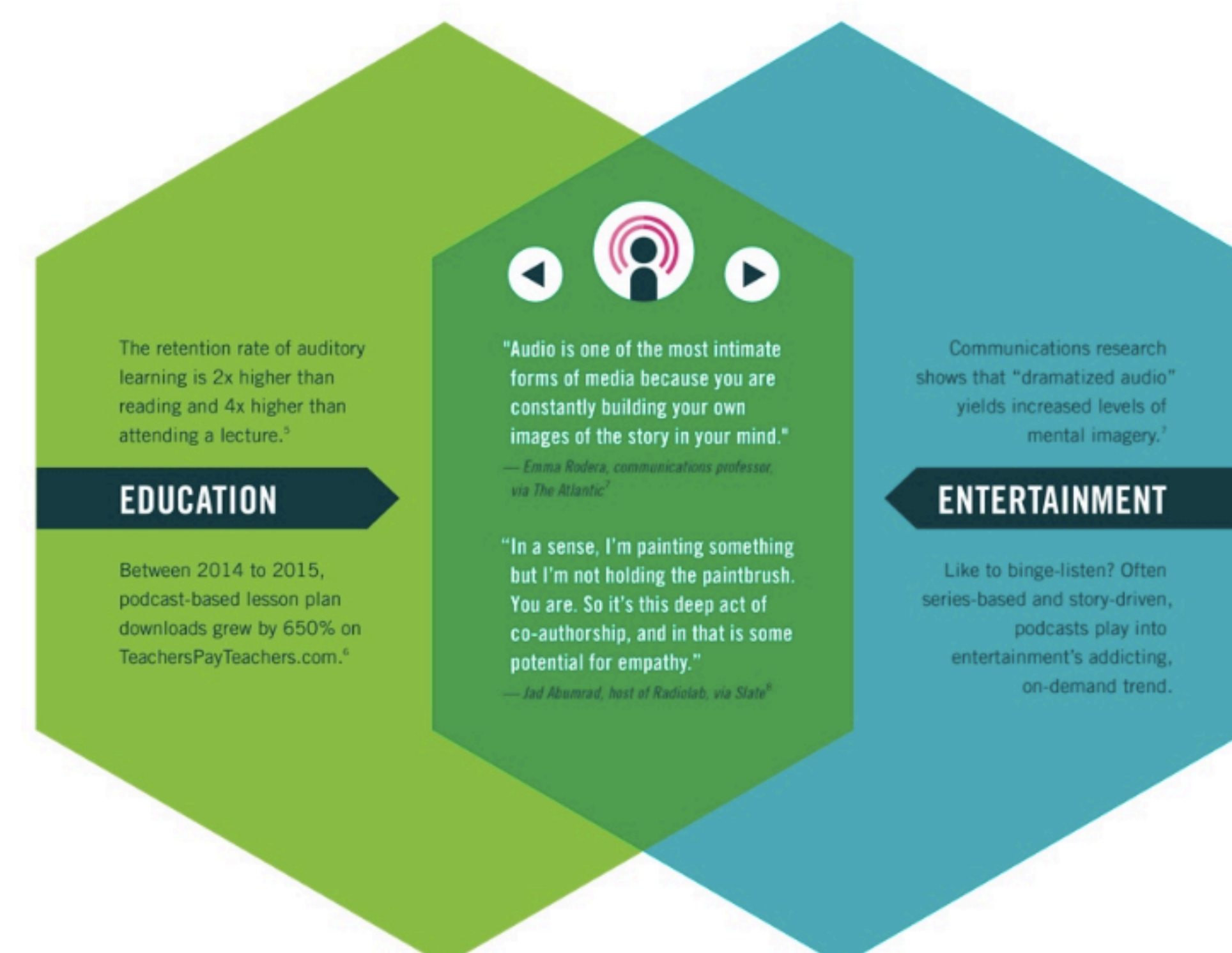


Figure 2: An Infographic from "The Podcast Explosion", Concordia University, St. Paul, that explores the pedagogical potential of podcasting.

## Method

To explore the overlap of entertainment and education, I created a podcast that communicates scientific topics through a fantasy narrative. My idea was to use the engaging plot and character-driven format of fantasy to communicate scientific concepts to a general audience. As a way to simplify world-building, draw from boundless lore, and involve others in collective creation, I decided to set my story in the Forgotten Realms of Dungeons and Dragons, and wrote the story from the first-person perspective of my character, Eve.

Each episode of the six-chapter story touches on a different topic in cognitive science. The topics are written in as obstacles central to the plot that other characters help Eve explore, as the listener learns along the way.

The first episode serves as a great example to demonstrate what the show actually looks like. The topic of the first episode is language, which Eve explores while trying to translate books in a library. When she happens upon a bilingual character who speaks a language she needs to learn, they discuss the socio-cultural nature of language and allude to the link between language and thought, all while working together to overcome an intimidating task.

## Results

To provide listeners with context for the scientific theories woven into the narrative, experts of the respective fields were interviewed. These scientists gave their perspective on the data supporting the theories and the nature of scientific research in general. Interviews are released in tandem with the fantasy episode, so listeners are able to seamlessly tie the topics from the story to the real world.



Figure 3: Logo for *Magic of the Mind*, created by Dorothea Stefanou, a U3 Arts student at McGill.

“I always wanted to be an explorer”

Excerpt, Episode 1, *Magic of the Mind*

## Conclusion

Important though scientific research is, it must be written into policies and public opinion to affect the very citizens who fund it. Though *Magic of the Mind* has yet to be released, early listeners have responded positively to the audial integration of science and storytelling. Though more data would be necessary to thoroughly analyze the impact of narrative-driven science communication, it seems a promising route for increasing scientific literacy. The *Magic of the Mind* podcast is one in what will hopefully be many creative approaches to science communication moving forward.

My utmost hope is that this project will allow listeners to approach science differently. Not as a stagnant body of knowledge that works behind closed doors, but as a dynamic, ever-changing process that explores topics integral to everyday life. I want listener emotions to be tied into the story, because that's how people learn best. I want people to come away not only with the catharsis of a good story, but also with the knowledge and power that comes from learning about the world, maybe even changing the way they see it.

## Bio

Morgan Sweeney is a U3 student from the U.S. majoring in Cognitive Science and minoring in Communication Studies. She teaches yoga and likes to write in her spare time.

## References

- (1) Smol, J.P. (2018). A crisis in science literacy and communication: Does reluctance to engage the public make academic scientists complicit? *FACETS* 3: 952–957.
- (2) Avramidou, L & Goedhard, M. (2017). Tell Me a Story: The Use of Narrative as a learning tool for natural selection. *Educational Media International*, 54:1, 20-33.
- (3) Bolliger, D.U., Supanakorn, S., & Boggs, C. (2010). Impact of podcasting on student motivation in the online learning environment. *Computers and Education*, 55:2, 714-722

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## More Information



This QR code contains a link to a Dropbox file with the extended trailer for *Magic of the Mind*, if you'd like to hear what the show actually sounds like.

For more information about the show, please visit [magicofthemind.ca](http://magicofthemind.ca).

The first episode will be released on all podcasting platforms February 29, 2020.