How Do You Like Your Science?: A Comparison of Infographic and Text Based Approaches

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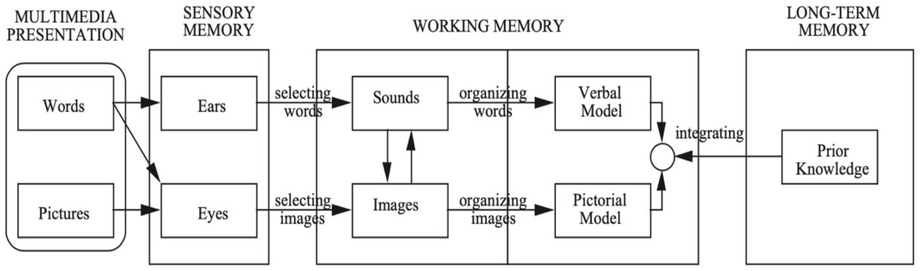
How Do We Communicate Science?

- There are a multitude of ways to communicate science, such as the internet and social media, as seen above that have started to utilize infographic and visual components.
- Where do you get your science information? Fill out this survey: https://PollEv.com/rachelgreer684
  - Results from other audience members: https://www.polleverywhere.com/free_text_polls/6bfcSApkjIaYy1pSyJE0j?preview=true&controls=none

What Are Cognitive Tools?

- They are mixed media technologies that support learning through decreasing the cognitive load, including infographics[1].



- As shown above multimedia presentations are processed through both visual (images) and auditory (written and spoken text) pathways which can lead to a lighter cognitive load and ability for more information to be processed through short term memory (Adapted from[2]).

Infographics 101:

- Infographics are visual tools that allow complex information to be more accessible and processed through the two pathways, often utilizing principles such as Mayer's Multimedia Principles of Design[1,3].

Multimedia Principles	Definition
Spatial Continuity Principle	Printed text and pictures are located near each other or integrated together
Signaling Principle	Use of elements (arrows, boxes, and symbols) to highlight important material
Redundancy Principle	Eliminating unnecessary information or repeating the same information
Coherence Principle	Excluding irrelevant or unrelated words and pictures

What Did I Do?

Research Question: Is an infographic or article more effective in communicating science on the Zika virus to college students in young adulthood?

Criteria used for effective science communication:

- Increasing understanding on Zika virus
- Invoking positive attitudes towards media presented
- Invoking positive attitude towards science topics revolving Zika virus
- Influencing behaviors after learning new information

Methods:

College of Wooster Students
Age 18-22

Receive infographic | Receive article | Receive article + infographic

Control Group 1- Article then infographic
Control Group 2- Infographic then article

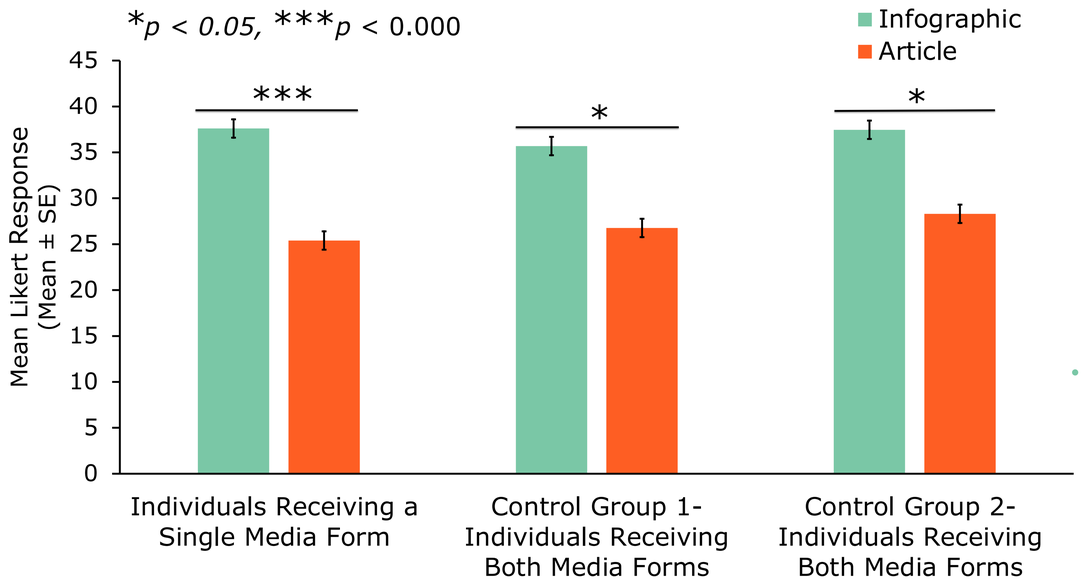
Survey 1 → 5+ days later → **Survey 2**

1) Pre-exposure probe
2) Likert Scale on Attitudes Towards Scientific Media
3) Presentation of Scientific Media
4) Multiple Choice & Short Answer Questions
5) Likert Scale on Attitudes Towards Scientific Media
6) Likert scale on attitudes towards media received

1) Pre-exposure probe
2) Likert Scale on Attitudes Towards Scientific Media
3) Multiple Choice & Short Answer Questions
4) Likert scale on post study behaviors

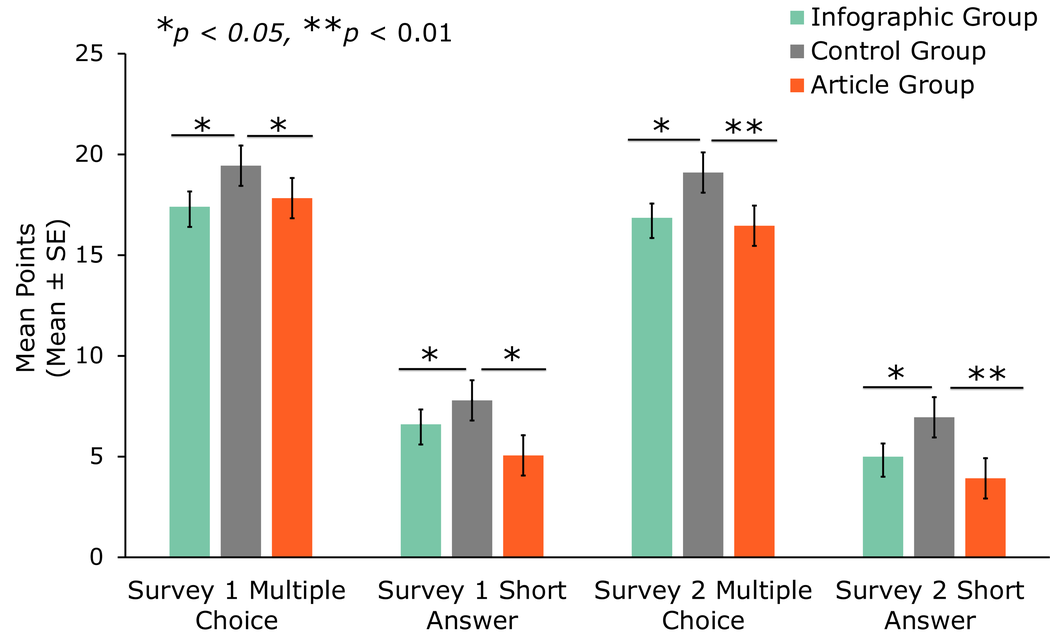
What Did I Find?

Participants Preferred the Infographic Over The Article:



- Figure shows individuals receiving the infographics rated it higher and had more positive feelings about it as compared to people receiving the article, individuals receiving both medias also had more favorable attitudes towards the infographic.
- **Potential Reasoning:** Individuals in this age group preferred the infographic due its to aesthetically appealing format[4].

Participants Learned Most if They Received Information Both Ways:



- Figure shows that the control group received on average more points for the short answer and multiple- choice questions immediately after and 5+ days post media presentation.
- **Potential Reasoning:** Double exposure to information and ability to learn from two different styles of information that may work better with various learning styles[5,6].

What's The Relevance of This Study?

What Does This Mean?

- Young adult college students may prefer infographics and be a more effective way to approach communicating with this group of individuals.
- Receiving science information in both a written and visual form may be more beneficial when trying to increase knowledge, understanding, and accessibility of information.
- Adds more research to scientific communication on infographics as compared to text-based approaches and the strategies of communication that may work best for college student audiences[7].

What Are Some Future Directions?

- Conducting the same study with different groups of audiences to determine if infographic preferences remain the same among different individuals.
- Conducting the same study but testing for ability to transfer knowledge to different contexts.

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