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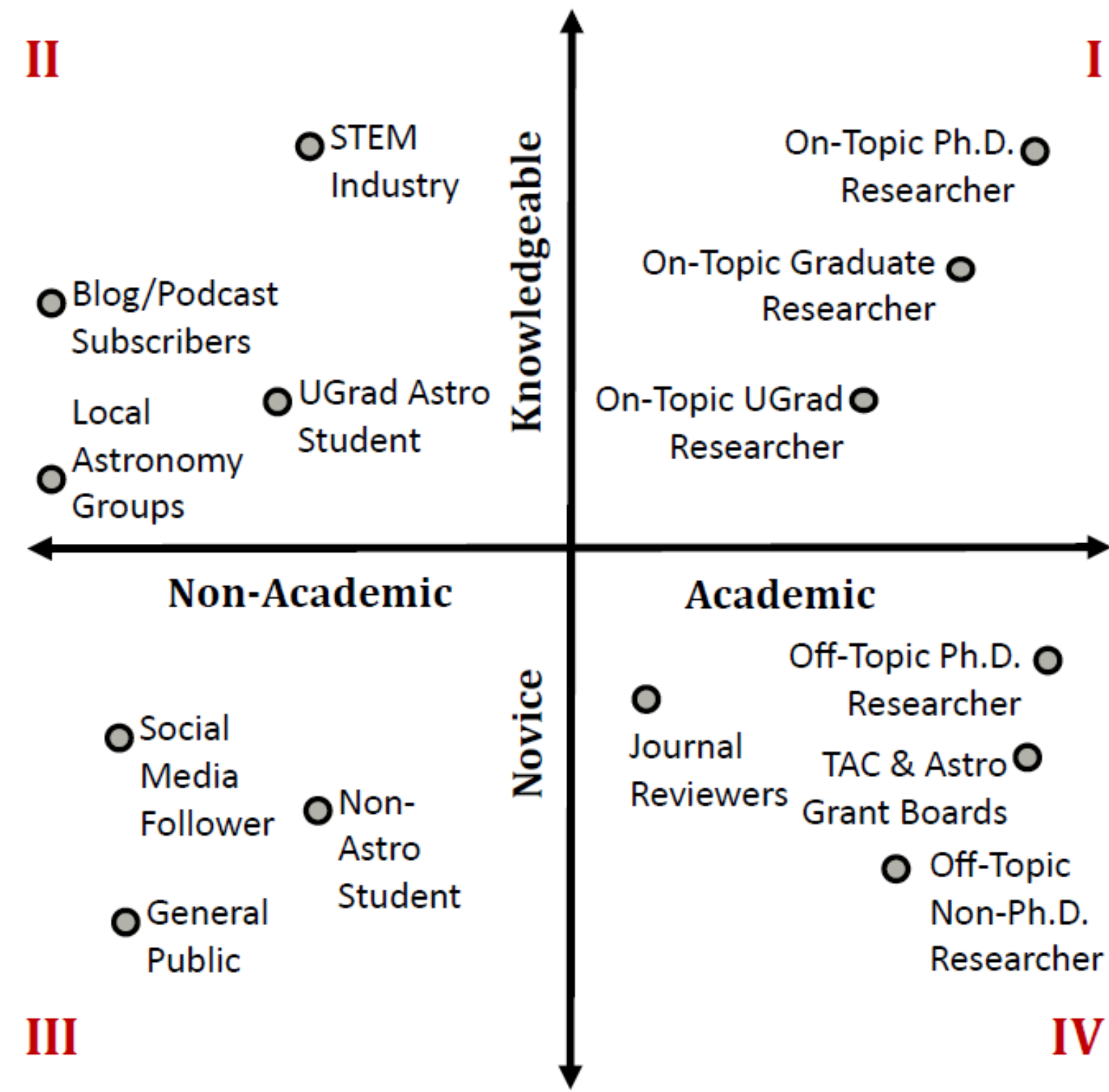


**Your science is a story and you are the storyteller. Tell it well.**

**Who is your audience?**

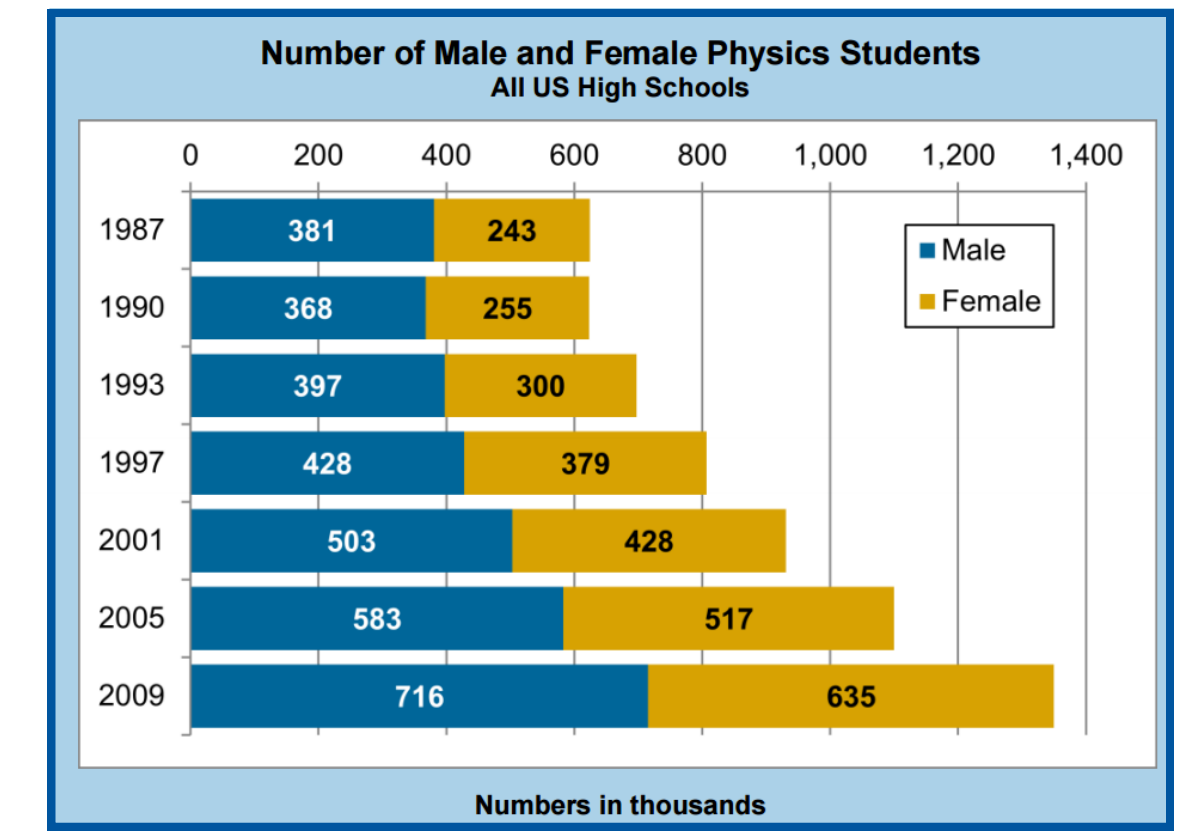
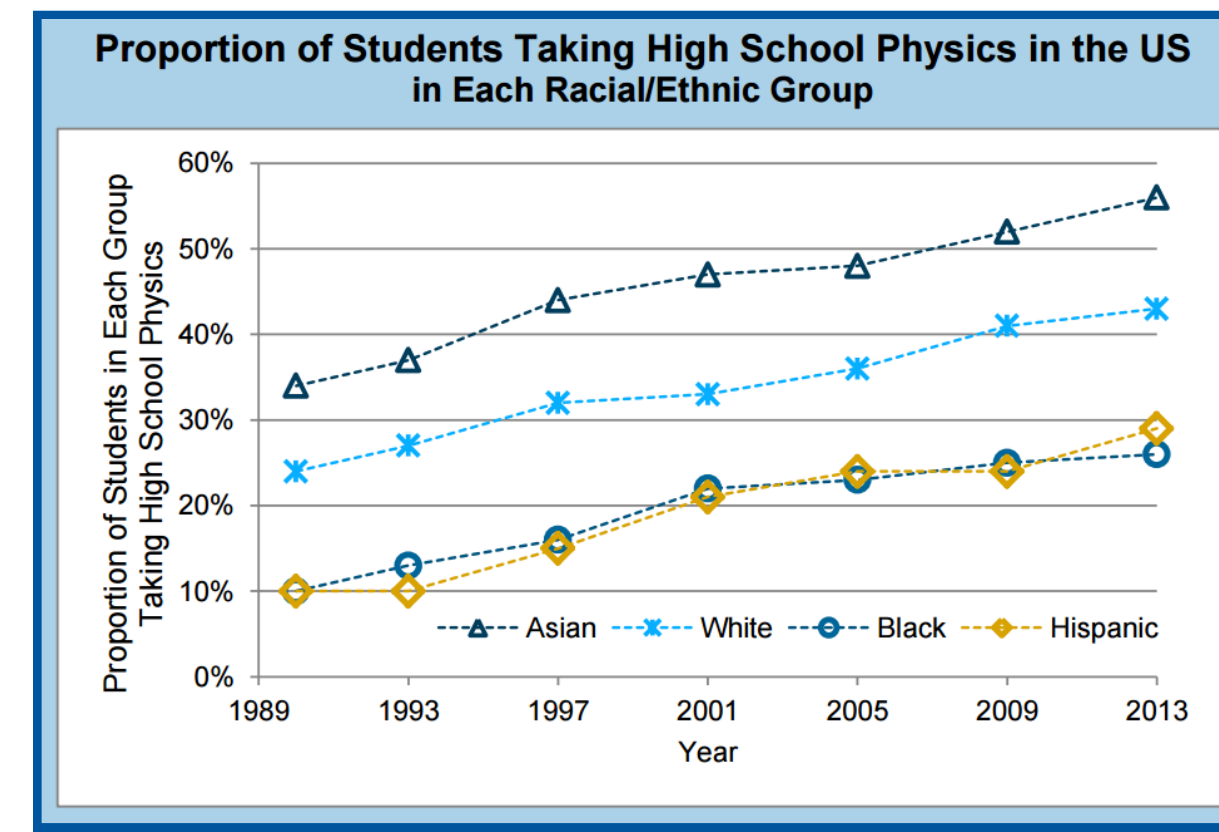
The first choice you make is your **intended audience**, which will inform the *prior knowledge* you can access, the *key topical points* to emphasize, the *hook* to keep your audience engaged, and how to utilize your chosen *medium*.

**A well-told story can appeal to more than one audience type.** [1]



**What do they already know?**

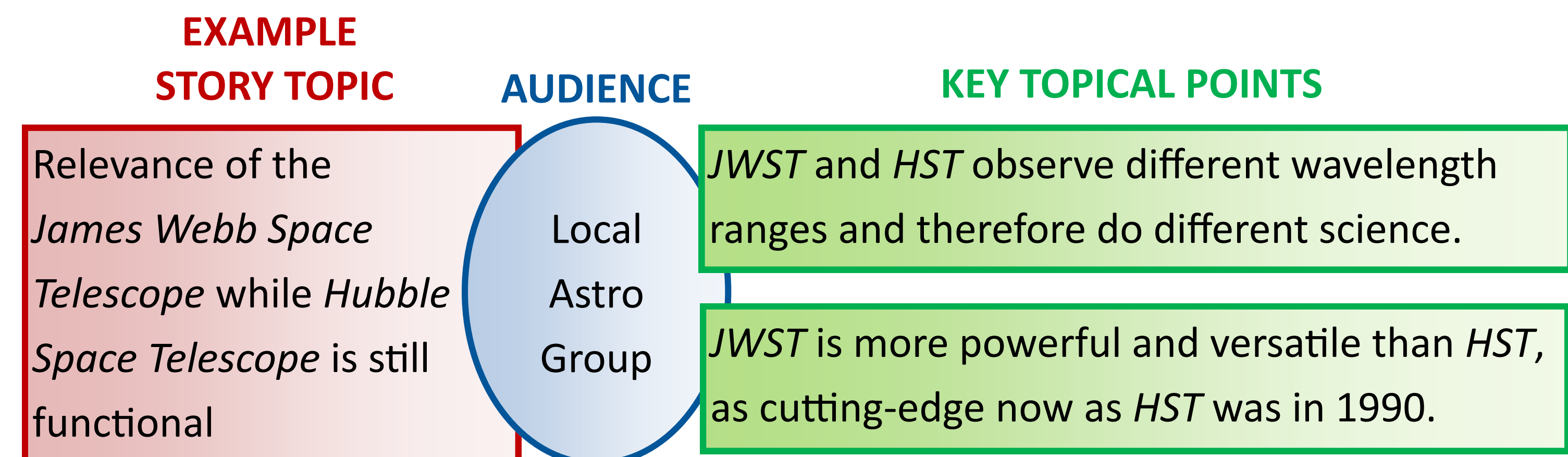
**Prior Knowledge** includes more than just knowledge of physics and astronomy. Consider how demographics and prior physics studies intersect when assuming prior knowledge in your story.



**By assessing your audience's prior knowledge you can choose and implement the most effective communication strategy, avoid confusion, and utilize your audience as a resource.** [4]

**What are the key points of your story?**

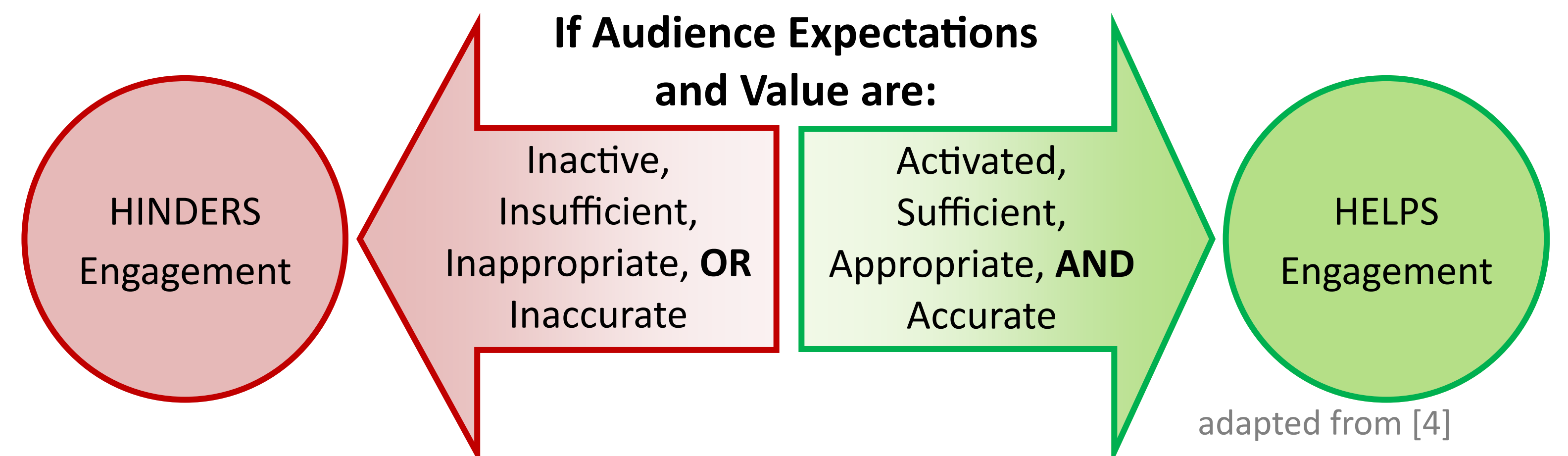
Ask yourself, "What essential ideas do the audience need to remember to understand my message?" Pick as many **key topical points** as needed to frame and motivate the story—and no more!



**The key topical points serve as an outline of your story. Explain, support, and connect points using details non-critical to the message.**

**How do you engage the audience?**

The audience has the right to disengage from the story at any time, and it is your responsibility as the storyteller to **hook them and keep them engaged**.



**Practice audience-centric storytelling: regardless of your scientific story, communicating it to an audience makes it about them, not you. Cater to their needs, not yours as the storyteller.** [5, 6]

**What medium are you using to communicate?**

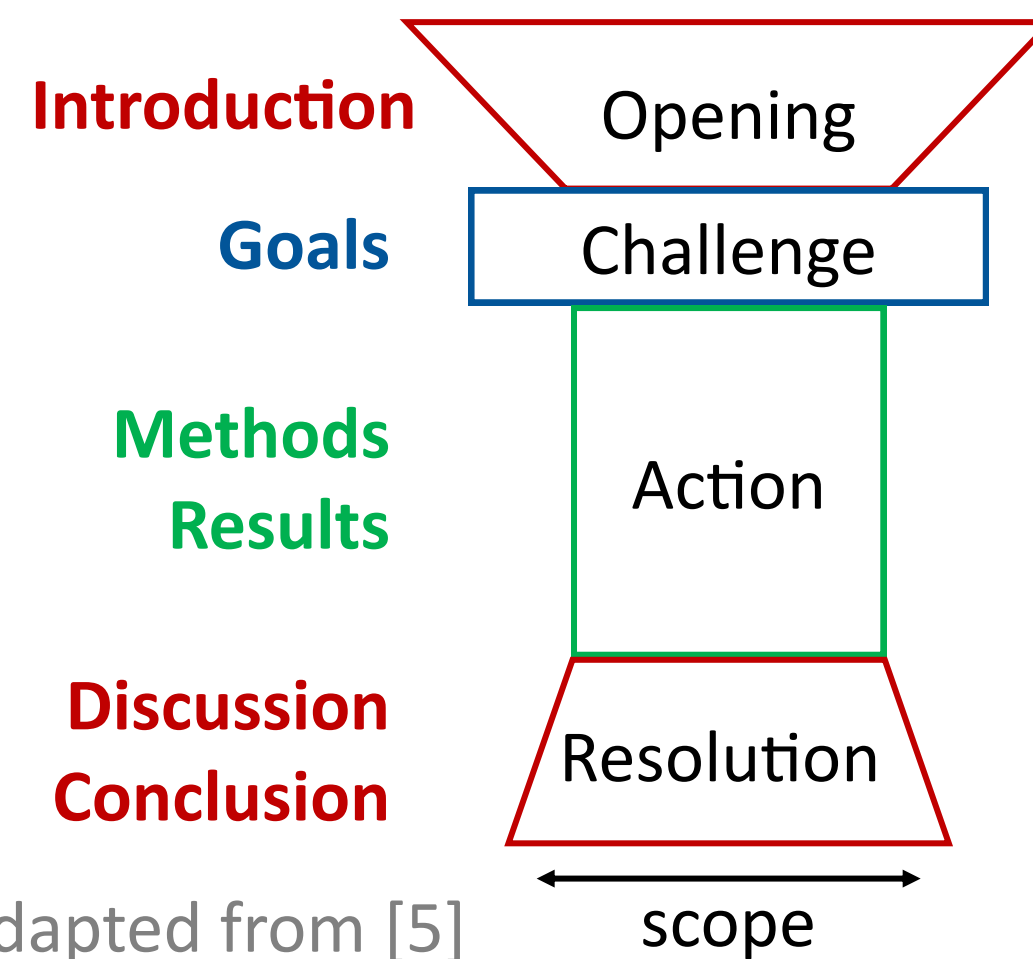
**Academic Research Paper**

Write in a conventional register, instead of abstract: **identifiable characters that actively do things. Map your paper structure onto a story structure with an opening, middle, and end.** [1, 5]

**Good:** "Supernovae play a key role in the physical and chemical evolution of galaxies."

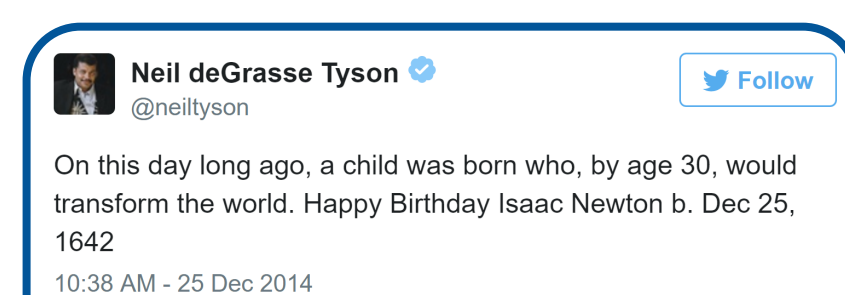
**Poor:** "The physical and chemical evolution of galaxies is largely driven by supernovae."

Check your writing efficiency: HemingwayApp.com

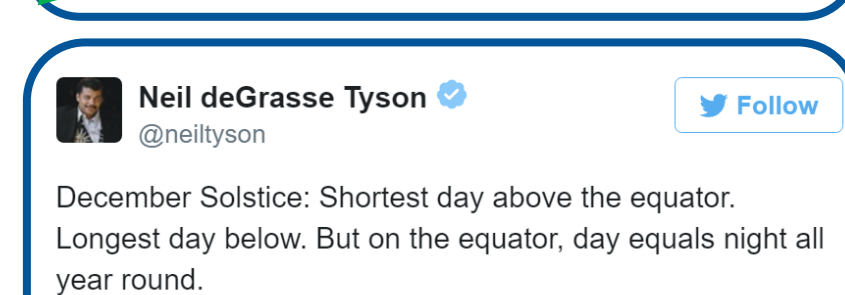


**Social Media**

Though controversial, Tyson's "most retweeted" post fulfills all **SUCCESS** criteria



This average tweet of Tyson's lacks the **Unexpected, Emotional, and Stories** aspects.



**Academic Research Posters**

Explore the "Best Practices for Effective Poster Design" found here: and at [www.KimberlyCartier.org](http://www.KimberlyCartier.org)



Ideas remain interesting and relevant when they are:

- Simple**—the core essence in a clear, compact way
- Unexpected**—novel questions or interpretations
- Concrete**—specific, definite, focused
- Credible**—establishing a chain from past to future works
- Emotional**—curiosity, excitement, wonder
- Stories**—characters, plot development, resolution [5]

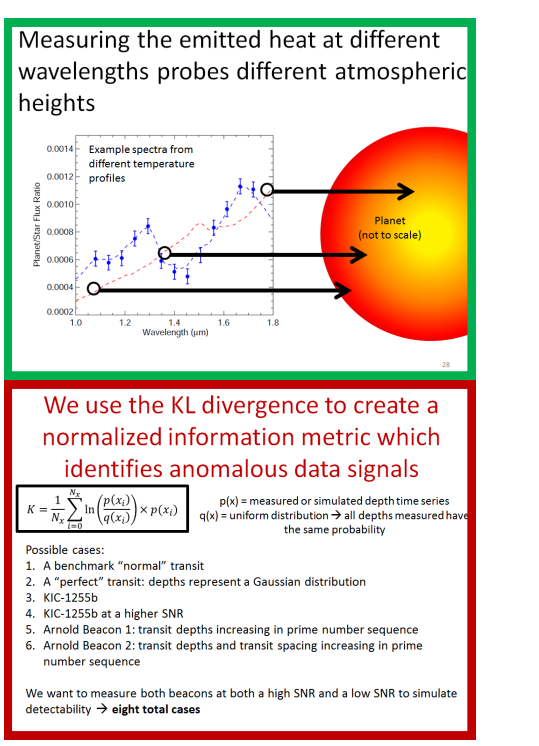
**Simple, Concrete, and Credible are "must-haves" to be merely comprehensible. Fulfilling the remaining SUCCESS aspects give your stories staying power.**

**Slide Presentation**

The Assertion-Evidence slide design maximizes audience comprehension and retention of material. **Minimize text, fill the slide with a large graphic, and verbally tell the story.** [7]

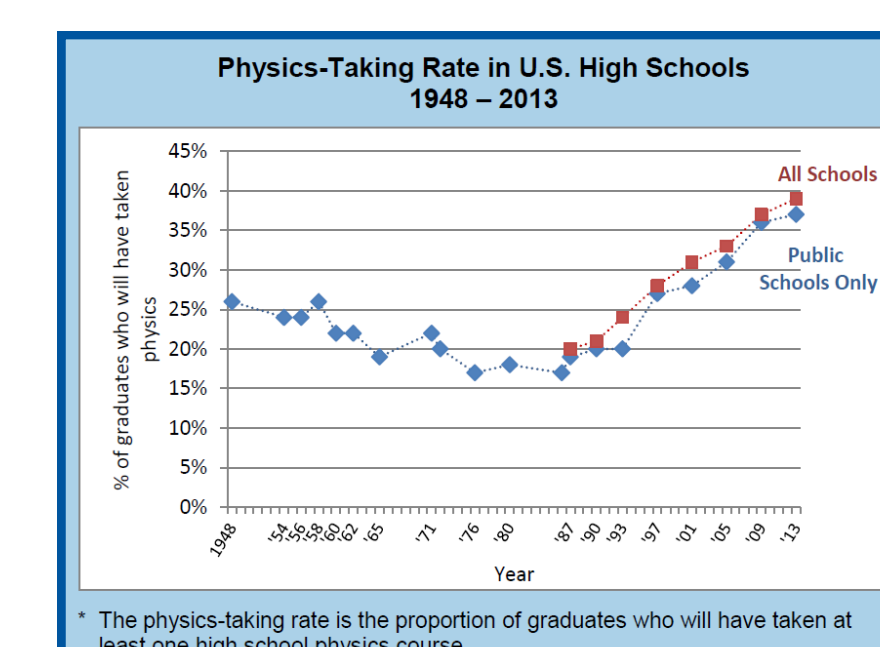
**Good:** Full sentence Assertion is the title and subject of the slide. Graphical Evidence is the focus of slide explanation.

**Poor:** Many words that distract from (rather than focus on) the story. No graphic. The equation is small and not the focus of the slide.



**Science News Sources**

**Due to the widely variable audience type, carefully consider prior knowledge and engagement before you start storytelling. Focus on the Emotional and Stories aspects.**



Between 16% and 40% of U.S. high school graduates have taken a physics course. Your story will benefit from a clear statement of its value and relevance. [8]

**References**

- [1]"Writing Science in Plain English." Anne E. Greene, 2013.
- [2]"Underrepresented Minorities in High School Physics." Susan White and John Tyler, AIP Statistical Research Center, 2015.
- [3]"Female Students in High School Physics." Susan White and Casey Langer Tesfaye, AIP Statistical Research Center, 2011.
- [4]"How Learning Works: 7 Research-Based Principles for Smart Teaching." Susan A. Ambrose et al., 2010.

- [5]"Writing Science: How to write papers that get cited and proposals that get funded." Joshua Schimel, 2012.
- [6]"It was the best of sentences, it was the worst of sentences." June Cassagrande, 2010.
- [7]"How the Design of Presentation Slides Affects Audience Comprehension: A Case for the Assertion-Evidence Approach." Joanna K. Garner and Michael P. Alley, International Journal of Engineering Education, vol. 29, no. 6, pp. 1564-1579, 2013.
- [8]"High School Physics Courses & Enrollments." Susan White and Casey Langer Tesfaye, AIP Statistical Research Center, 2014.

**Acknowledgements**

The contents of this poster comprise part of Kimberly M. S. Cartier's doctoral dissertation, which will be published in full in May 2017.