

Engineering Messaging

How do we inspire youth?



Why is the Message Important?

- ▶ A **lack of understanding** about the role of engineering and technology in society increases the risk of a major disconnect developing between society's needs and engineering solutions.
- ▶ When we define what it means to work in engineering, we reflect our **profession's purpose, importance, and diversity**.
- ▶ Further emphasis on the **WHY of engineering** – the meaning, its values, the emotions of the people involved, and its impact in human terms – makes it more accessible.

Current Messages for Youth

- ▶ “You’re good at math and science, you should study engineering.”
- ▶ Engineering = scientific aptitude.
- ▶ Engineering = building stuff.
- ▶ Engineering = driving trains!

What are other default messages about engineering that youth receive?

Where do they get them?

In what ways are they inaccurate/incomplete?



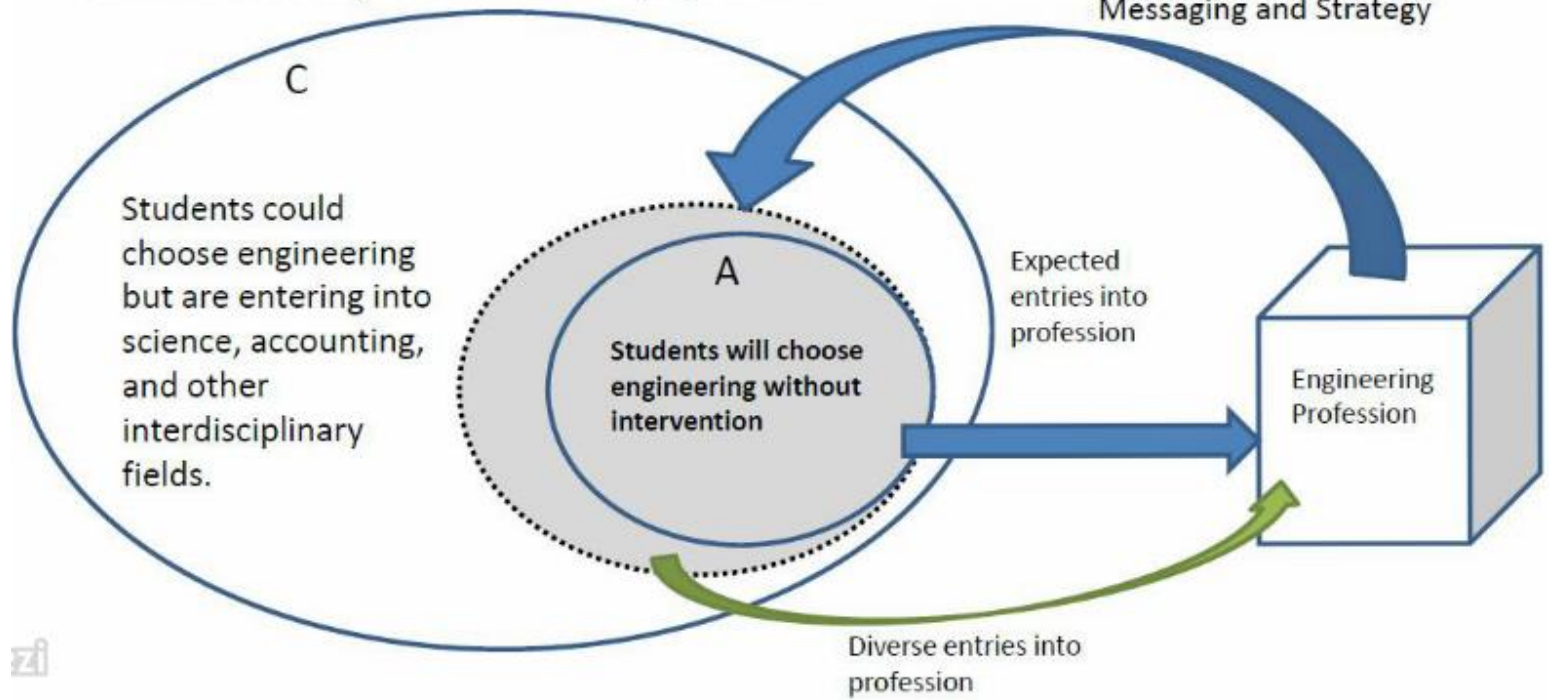
What are some engineering myths?

Messaging Ideas – For Reference

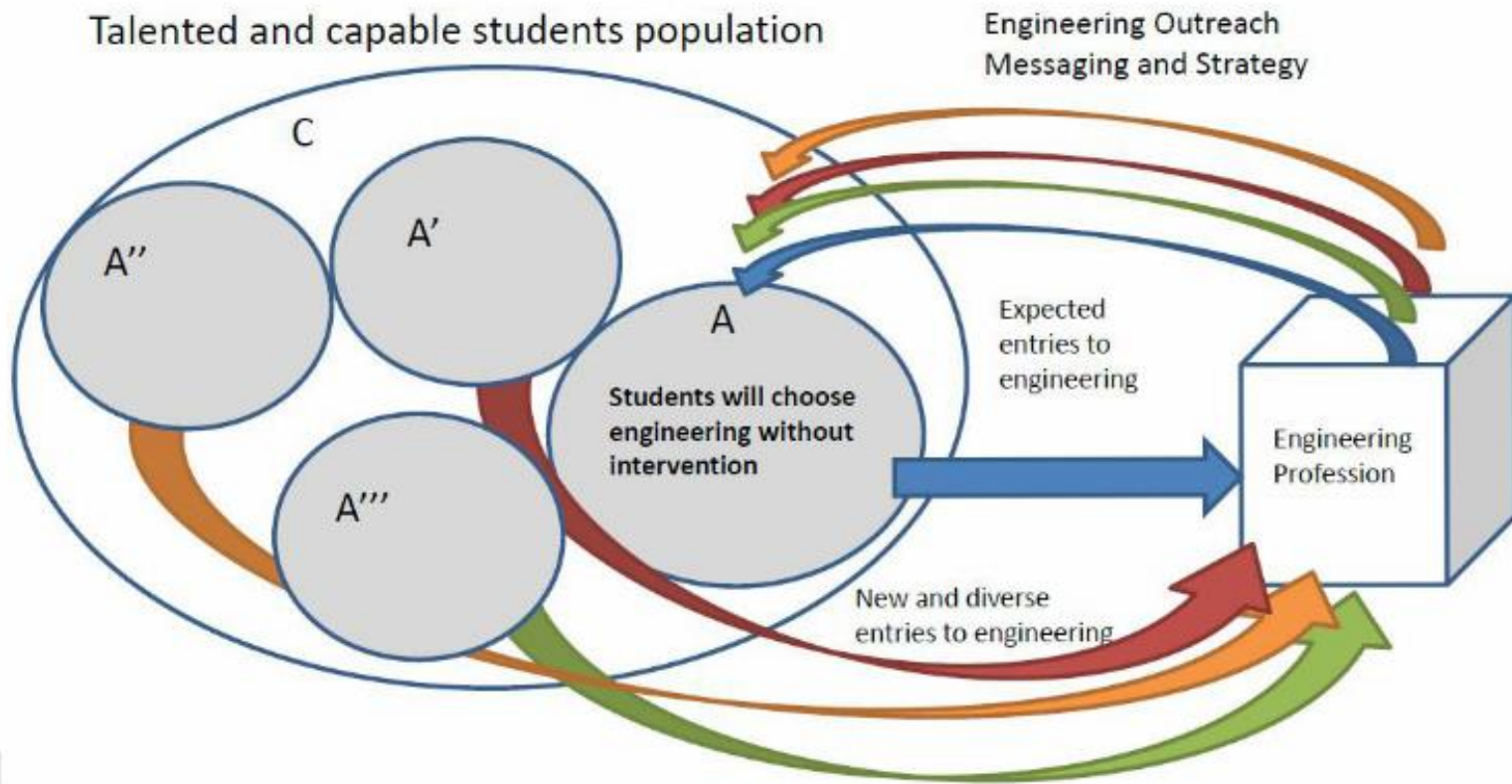
- ▶ Engineering is a discovery process
- ▶ Engineering is about dealing with constraints and making things work in the real world
- ▶ Engineering is about the design process, constantly learning and making improvements
- ▶ Engineering is all around you
- ▶ Engineers solve problems today and identify opportunities for the future
- ▶ Challenge a misconception or stereotype
- ▶ Transform 'engineering is hard' to 'engineering is fun'
- ▶ Challenge 'engineering is only for certain people,' 'engineering is obscure,' or 'engineering is an elite club'
- ▶ Focus on understanding the world
- ▶ Engineering needs diversity: there is a place for you in engineering!
- ▶ Engineering has broad applications and impact
- ▶ Engineers work with people and care about the future of the world
- ▶ Help us solve the important problems of the 21st century
- ▶ Engineers work in many disciplines, industries, and areas.

Talented and capable students population

Engineering Outreach
Messaging and Strategy



Why Modern Messaging for Engineering?



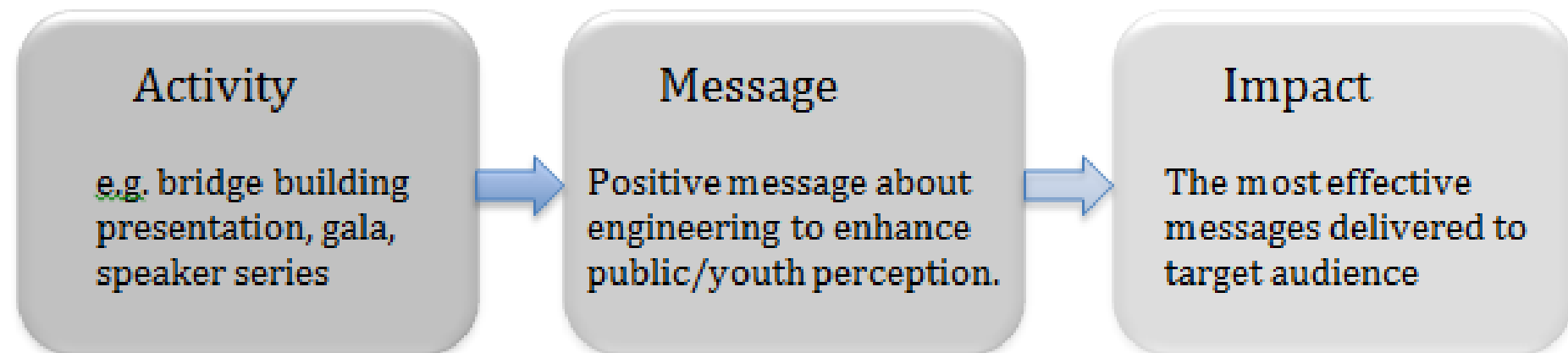
Diversity of Messaging

Our Approach to Messaging

How can we plan for effective outreach?

A current disconnect exists between engineering outreach input (activities, presentations, workshops, etc.) and the output of actual messages delivered to target audience. Engineering and technology messages are seldom intentional and are often ignored, in favour of time spent on the input. This can lead to inconsistent and ineffective messaging across activities.

Desired future state for planning engineering outreach: the *message* about engineering and technology is also carefully analyzed and is intentionally delivered.



Effective Ways to Message

From the National Academy of Engineering's Changing the Conversations Campaign

1. Engineering and technology solutions to a diverse set of 21st century challenges require a diversity of thinkers. There's a place for you in engineering and technology!

2. Engineering and technology shape the world around us: yesterday, today and tomorrow.

3. Engineering and technology apply creativity and imagination to turn ideas into reality.

4. Engineering and technology are essential to the safety, health, happiness, comfort, and efficiency of our friends, family and distant neighbors. Locally and globally, people working for people. Engineers and technologists make a world of difference.

Best four messages when talking about engineering to younger kids!

Effective Ways to Message

Micromessaging

- ▶ Accumulation of “*subtle, often unconscious, messages that devalue, discourage and impair performance, conveyed through facial expressions, gestures, tone of voice, choice of words, nuance and syntax.*” [1]
- ▶ Micro-messaging can have a cumulative effect of diminishing overall performance & motivation.
- ▶ Positive micro-messaging can also favour some students over others.
- ▶ As educators, we need to give encouragement where it is needed most! Praise students who are working at their personal best, even if they're not the “top achievers”

[1] Hinton, Eric L.; Young, Stephen. ["When Small Sights Lead to Huge Problems in the Workplace"](#)

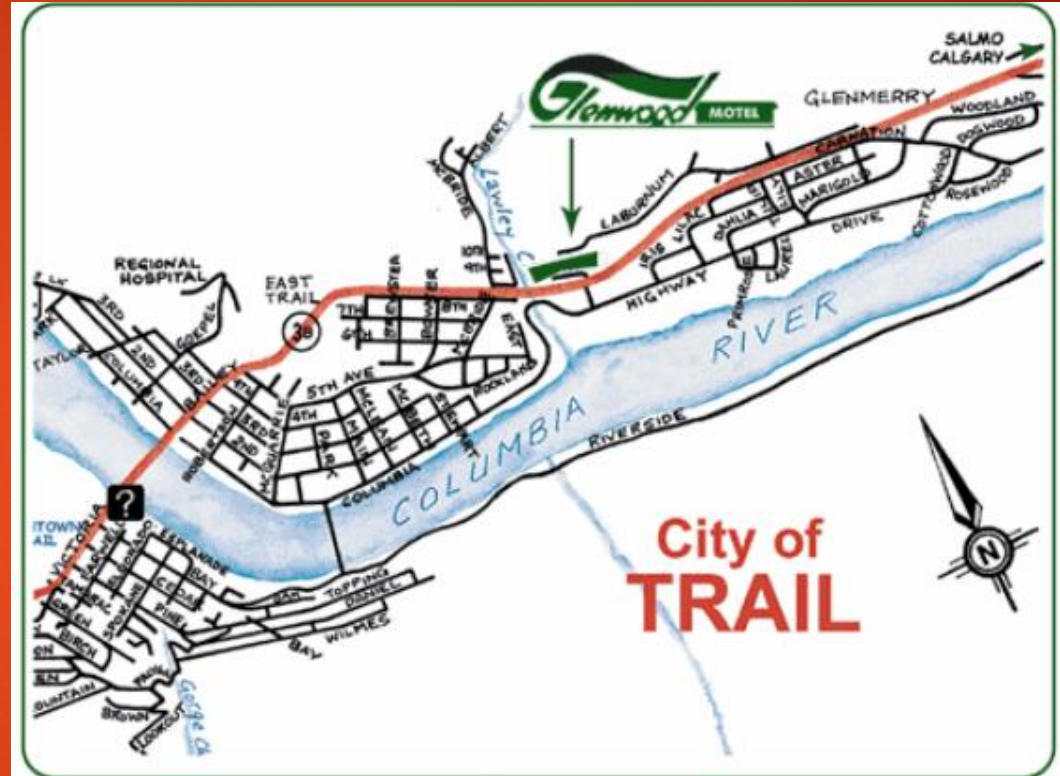
Incorporating Good Messaging Activities

How Can We Go Beyond Bridge-Building?



Incorporating Good Messaging Activities

Example – Activity + Message = IMPACT



Building a strong bridge appeals to one type of youth; thinking about how a new bridge will affect the community appeals to another. This addition to a bridge-building activity also deepens audience awareness of engineering.