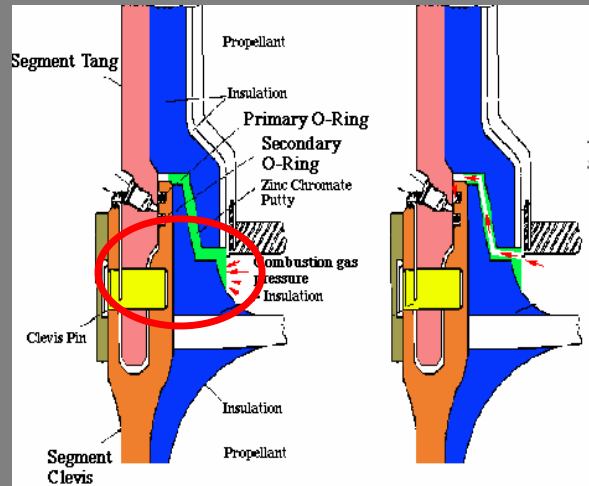


# Redesigning Slides for Teaching Technical Writing to Finnish Engineering Students

If you do not communicate well, people can die

Bench testing well before the accident showed problems with O-ring seals

Engineers did not communicate the seriousness of the problem



<http://onlineethics.org/moral/boisjoly/rocket.html>



Space Shuttle Challenger  
(January 28, 1986)

Peter Heath  
Tampere Polytechnic  
University of Applied  
Sciences



# The default layouts offered by PowerPoint have recently received much criticism

## Structuring your Comms Report: Writing for the reader

Before you start writing, think about who the reader will be. Who are you writing for?

- Then make sure you write in a manner & level of detail appropriate for them
- Explain to your reader why & what you are doing, and what the outcome will be
- Write concisely & explain clearly.
- Write in plain, not technical English [clearly, accurately & reader friendly]

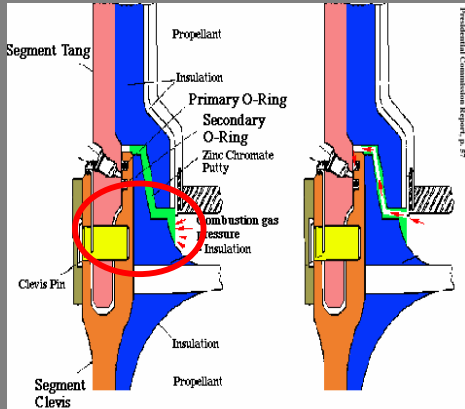
**Soon become tiresome**

# When designing slides for the teaching of technical writing, three goals should be set

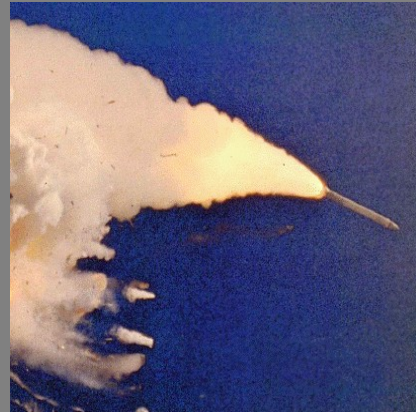
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Space Shuttle Challenger  
(January 28, 1986)

The design should help students understand the meaning of the slide

The slide design should help students to remember the contents of the slide

The slide design should serve as notes after the lesson

# This presentation introduces a slide design used in the teaching of technical writing to Finnish students

## Background of the slide design

Iron ores make up 5.6% of the earth's crust and account for 95% of the metals used

**Iron Ore Distribution**

Is strong and durable

Can be shaped, sharpened, and welded

[Kester 1994]

## A description of the slide design

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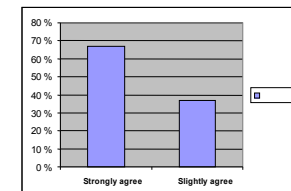
<http://onlineethics.org/morals/bolajolyrocket.html>

Space Shuttle Challenger (January 28, 1986)

## Research on the slide design

### Recent research at TAMK shows the sentence headline helps students understand information

The sentence headline, and the information it contained, helped me to understand the meaning of the slide.

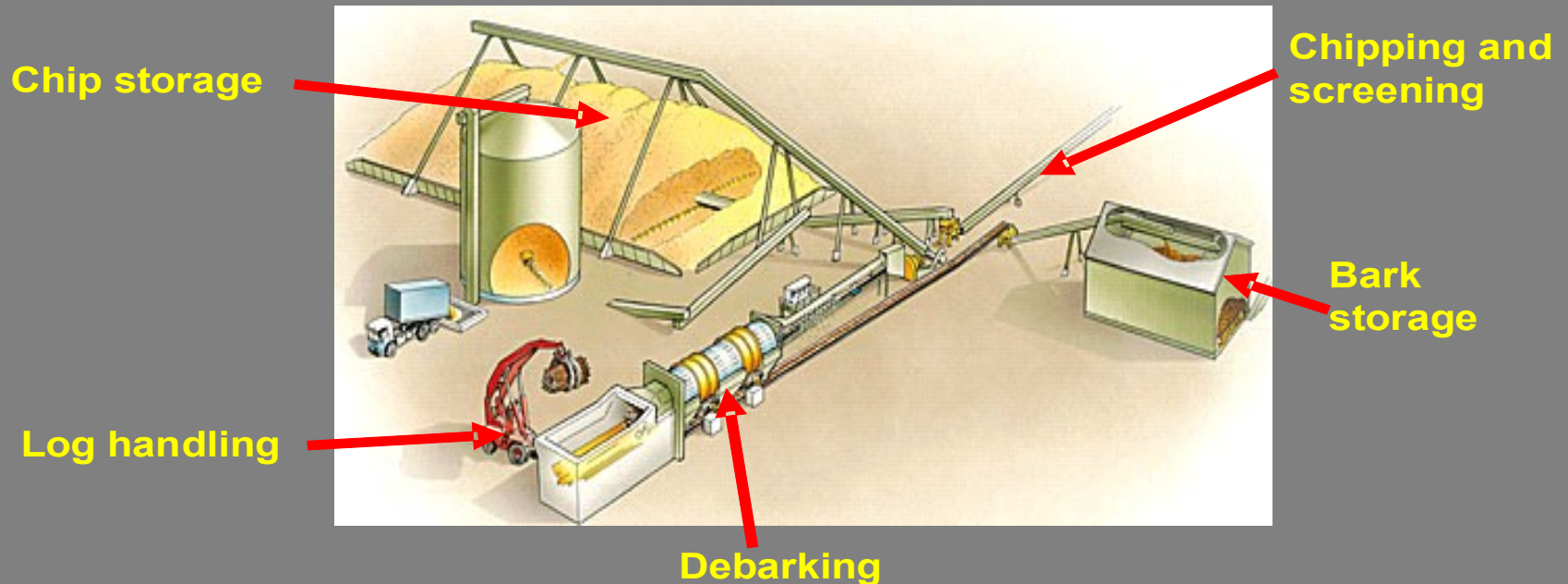


In total, 54 students answered the questionnaire

# The slide design presented here was first developed for technical presentations

Fiber technology products are divided into 5 main areas

## Complete wood handling lines



# The slide design is today also used for the teaching of STEM subjects

Iron ores make up 5.6% of the earth's crust and account for 95% of the metals used

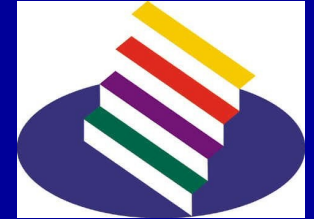
## Iron Ore Distribution



Is strong and durable

Can be shaped, sharpened, and welded

[Kesler 1994]



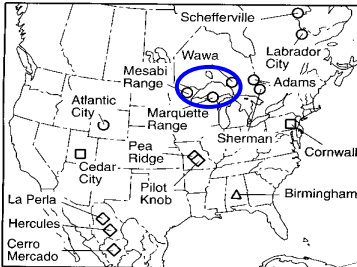
# The slide design is today also used for the teaching of STEM subjects

## The new slide design significantly improved grades

Q: How abundant is iron in the earth's crust?

### Iron

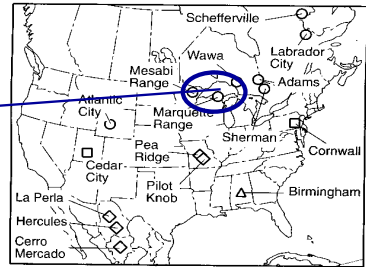

- An abundant metal, makes up 5.6% of earth's crust
- Properties:
  - shaped, sharpened, welded
  - strong, durable
- Accounts for >95% of metals used
- Iron ores discovered in 1844 in Michigan's Upper Peninsula
- Soon found other ores in upper Wisconsin and Minnesota



Kesler 1994

Iron ores make up 5.6% of the earth's crust and account for 95% of the metals used

### Iron Ore Distribution



Is strong and durable

Can be shaped, sharpened, and welded

[Kesler 1994]

Led to 59% recall

Led to 77% recall

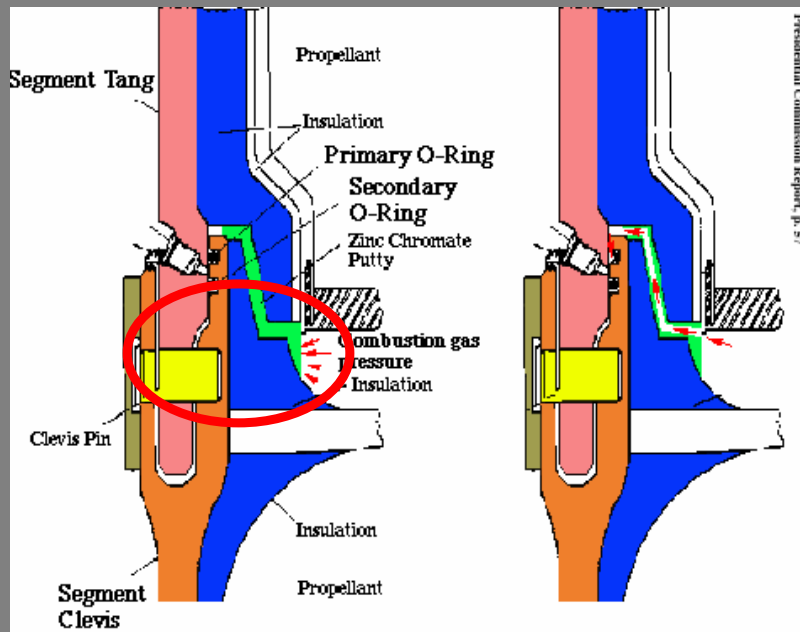
Level of significance < 0.001

# The slide design is used in the teaching of technical writing

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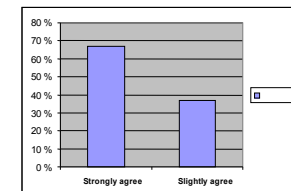
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# The slide design arises from principles of rhetoric, cognitive psychology, and human factors

Sentence headline

**If you do not communicate well, people can die**

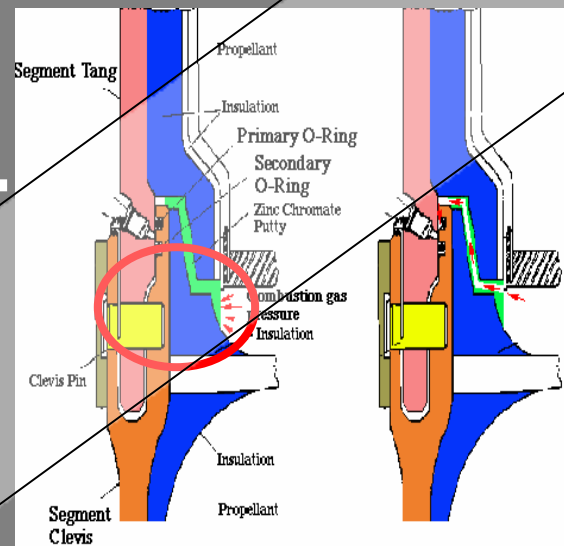
States assertion of the slide

Body of slide

Supports assertion with images and important words

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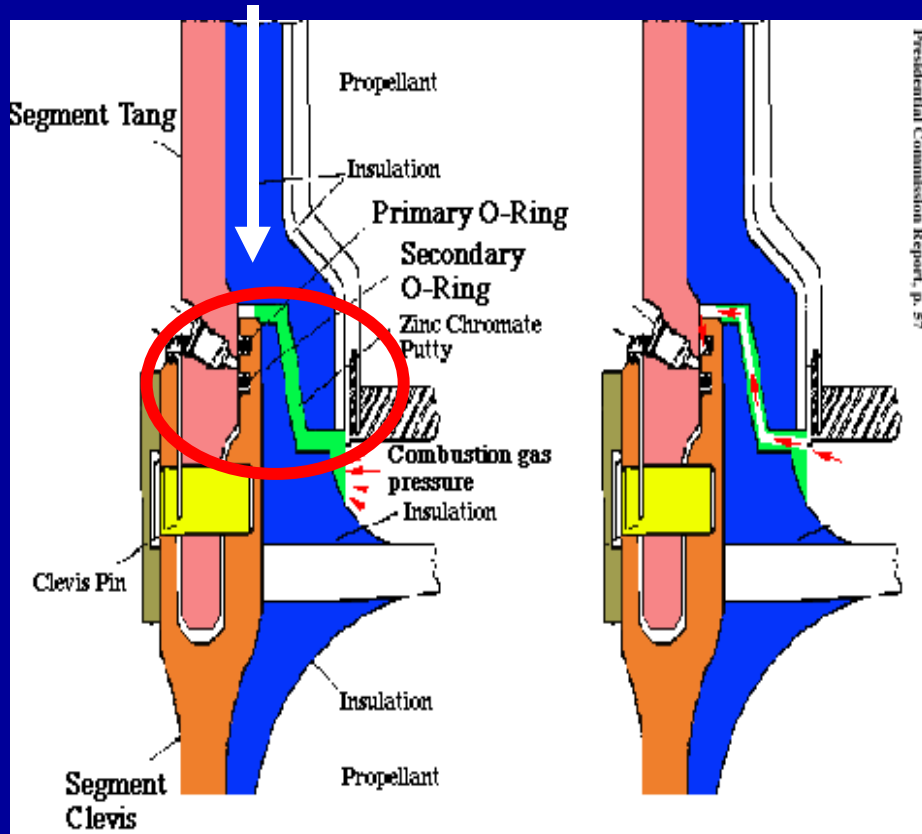
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**When you divide a section into subsections, all the pieces should be of the same pie (parallel)**

## **2. New Design for Particle Beam Fusion**

### **2.1 Charging Marx Generators**

### **2.2 Generating Particle Beam**

### **2.3 Irradiating Deuterium-Tritium Pellets**



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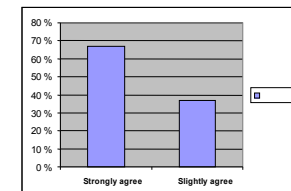
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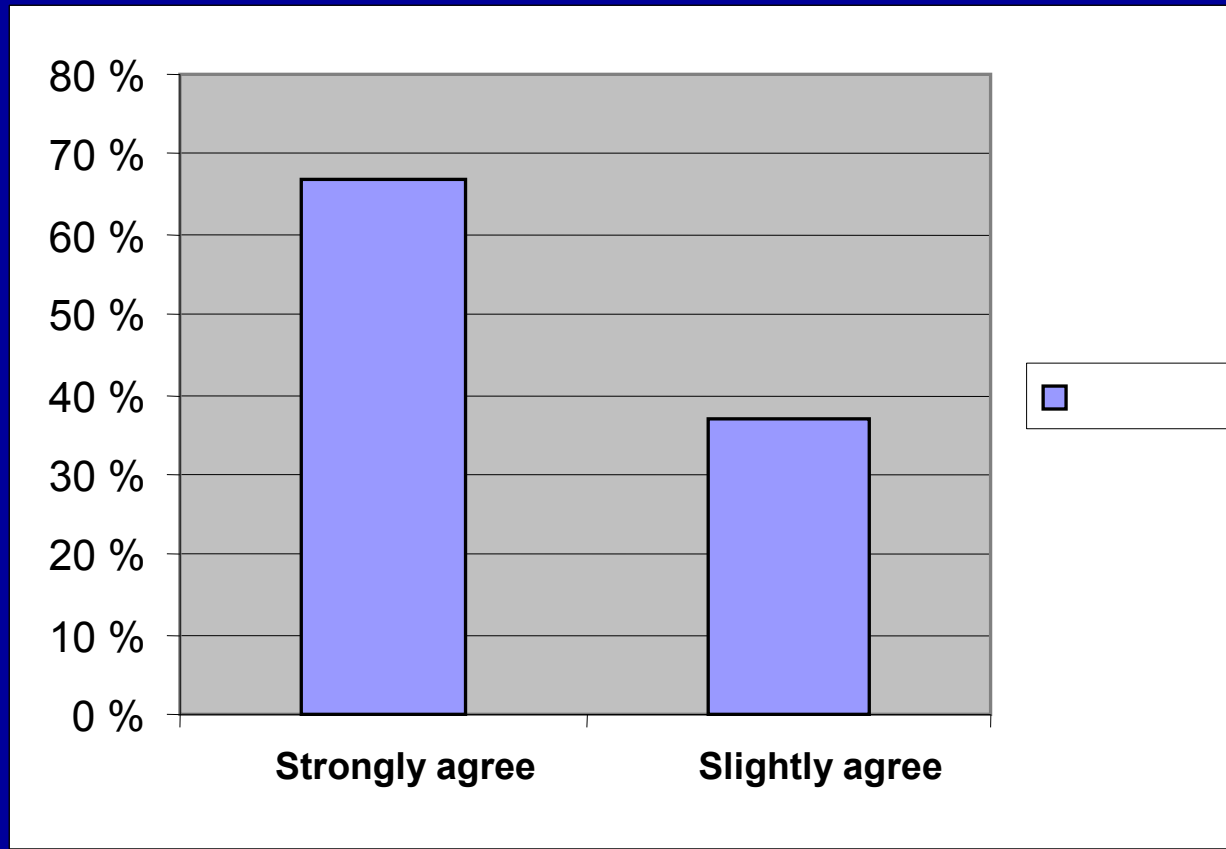
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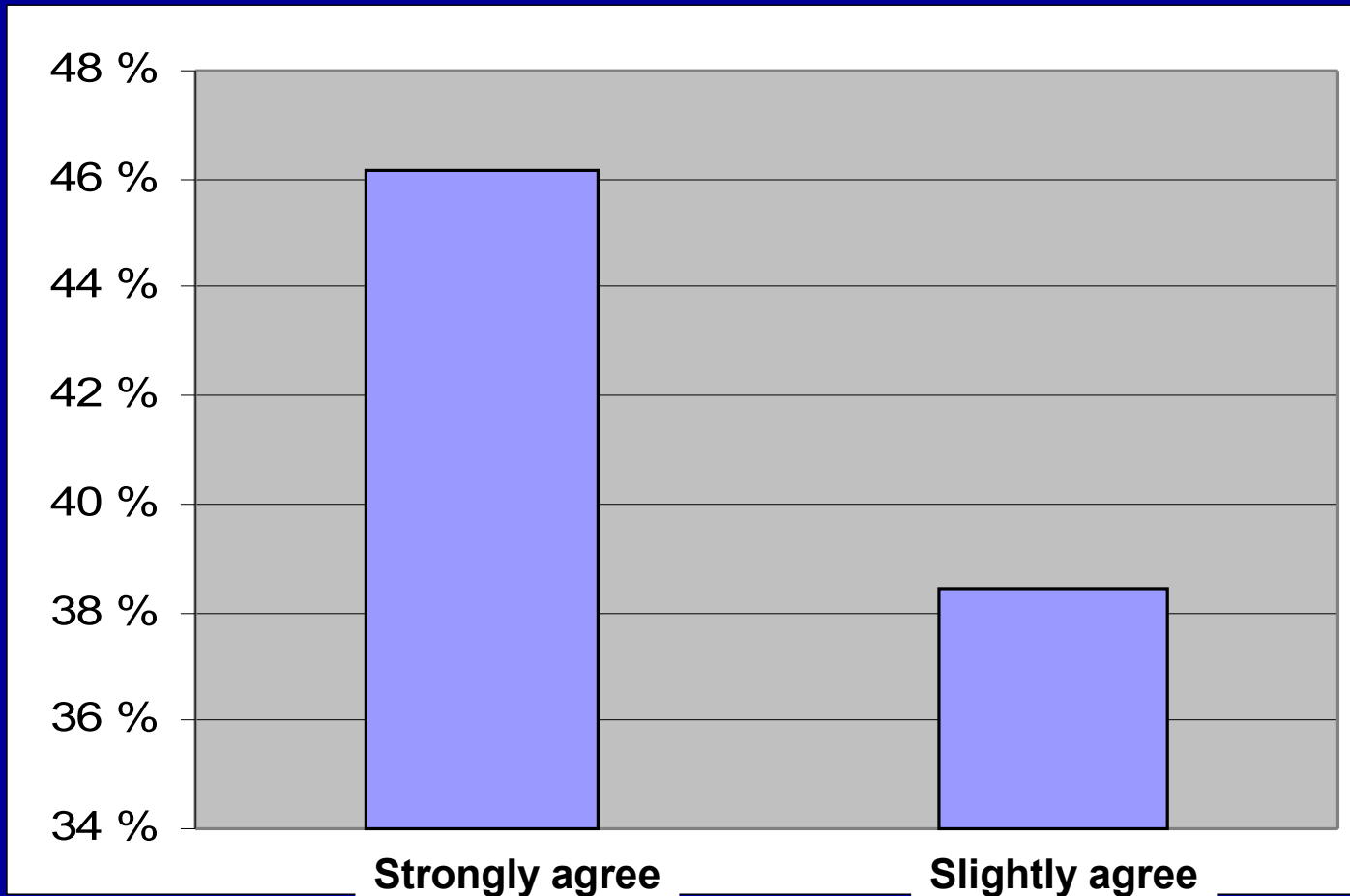
“The slide design helped me to understand the meaning of the slide.”



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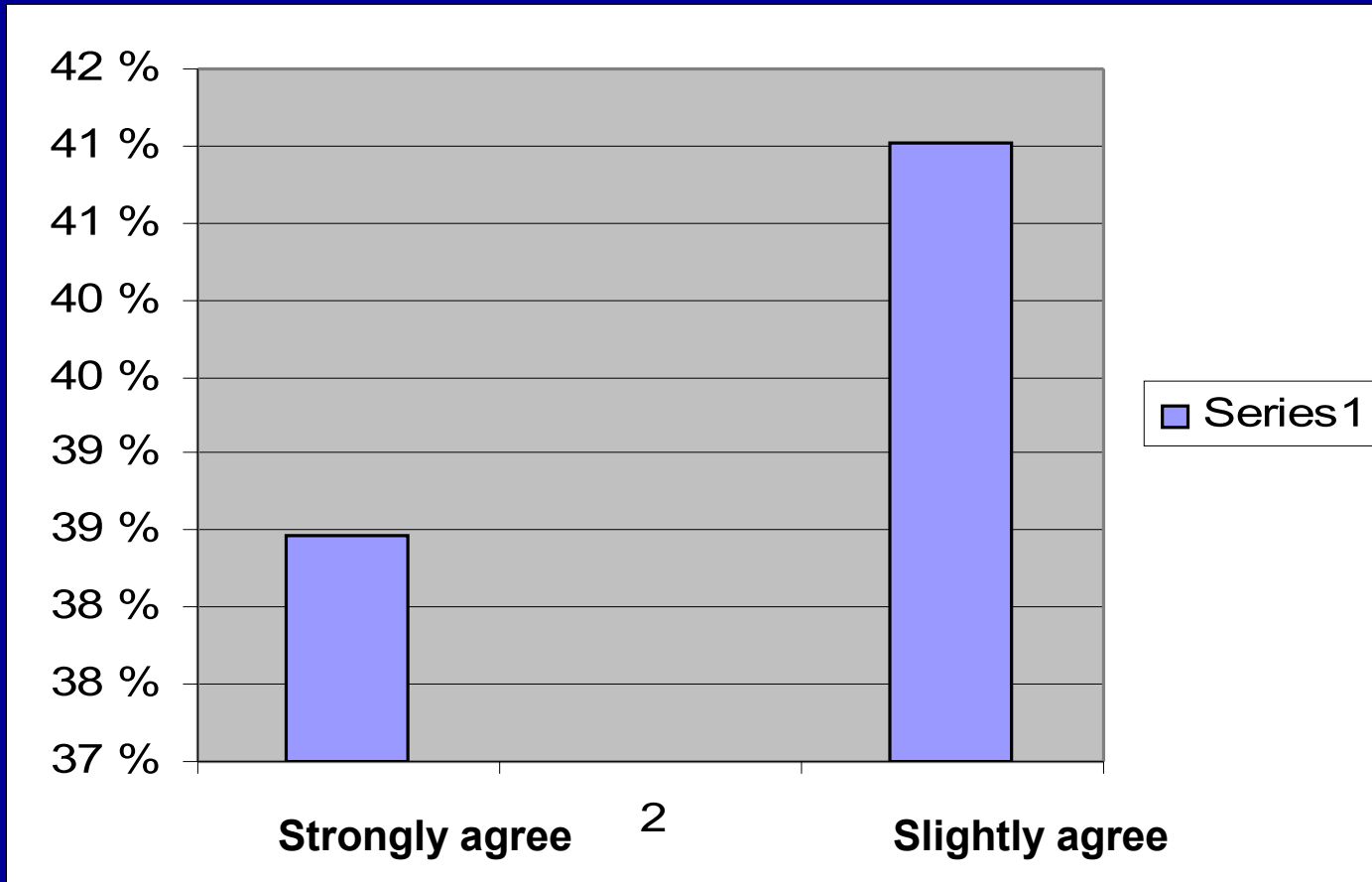
# Recent research at TAMK shows the slide design helps students remember information on the slide

”The slide design helped me remember the information on the slide”



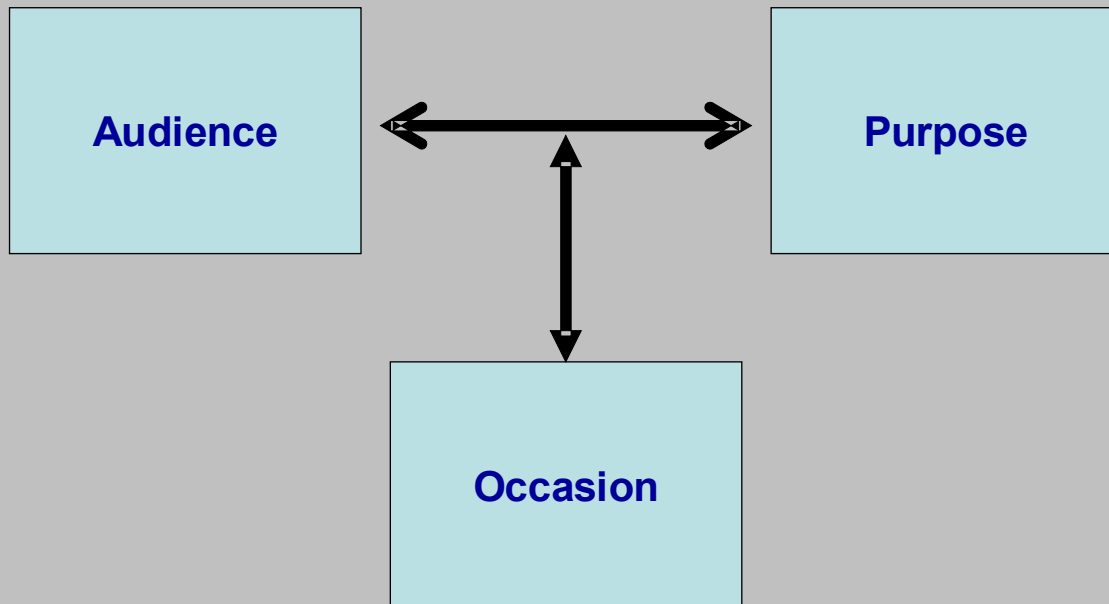
# Recent research at TAMK shows the slide design works well as notes

”The slide design worked well as notes and helped me prepare for the examination”



# In summary, the slide design presented here is effective in the teaching of technical writing

Before beginning the writing process, you must consider your constraints



More readily understood

More memorable

More effective as notes

# The comma is used to separate introductory phrases and clauses

In 1972 car accidents decreased due to new seat belt laws



In 1972, car accidents decreased due to new seat belt laws