Purpose, purpose, purpose:
A problem-solution approach to writing

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Clear Scientific Writing

• Why is this kind of writing important?
  – "In science, the credit goes to the man who convinces the world, not to the man to whom the idea first occurs."
    --Sir William Osler

• When does writing affect your message?
Clear Scientific Writing

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  – Funding grants
  – Conference proceedings/paper publication
  – Proposal acceptance
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Problem: We think “Writing is HARD!”

- Results in:
  - Staring at the blank screen
  - Procrastination/not writing
  - Uncontrolled words written down
  - Disorganized thoughts
  - Grammar/mechanics problems

Solu0on:
Find a new way of thinking
Problem: We think “Writing is HARD!”

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Solution: Find a more productive way of thinking

• Writing is HARD WORK!
Writing strategy: think about purpose

Composition = Content

Inform and persuade

Your purpose is tied to your solution!
Identifying the Problem

• At each level of the writing process, you are providing a solution to a specific kind of problem.

• Composition level: content problem
  – Homework #3
  – Homework #5

• Composition purpose: varies by writer/reader
  – Examples: To inform, to argue, to confirm, to persuade
Problems and Solutions: Composition

• Homework #3
  – “Describe the project you want to pursue this semester. This description must be significantly polished incorporating all the feedback you have received.”
  – Problem: He doesn’t know what kind of project you’re going to do for the semester.
  – Solution: Describe your project
  – Purpose: To inform
Problems and Solutions: Composition

• Homework #3
  – “How is it done today, and what are the limits of current practice?”
  – Problem: He does not know any background information about your project.
  – Problem: He wants you to thoroughly understand your field of research
  – Solution: Provide background information
  – Purpose: To inform, to demonstrate
Problems and Solutions: Composition

• Homework #3
  – “What's new in your approach and why do you think it will be successful?”
  – Problem: ???
  – Solution:
  – Purpose:
Problems and Solutions: Composition

• Homework #5
  – “Imagine you saw this flyer in your neighborhood. Write a one-page response to the editor of The New York Times (or Houston Chronicle depending on your preference).”
  – Problem?
  – Solution?
  – Purpose?
Problems and Solutions: Composition

• Homework #5

  – "Imagine you saw this flyer in your neighborhood. Write a one-page response to the editor of The New York Times (or Houston Chronicle depending on your preference)."

  – Problem? People are misinformed about smart meters after looking at this flyer

  – Solution? Identify misinformation and provide correct information

  – Purpose? To inform, to persuade
Writing strategy: think about purpose

Composition = Content

Paragraph = Topic

Inform and persuade

Develop a single idea

Your purpose is tied to your solution!
Identifying the Problem

• At each level of the writing process, you are providing a solution to a specific kind of problem.

• Paragraph level: topic problem
  – Introduction
  – Conclusion
  – Body

• Paragraph purpose: develop a single idea (topic) for writing
Problems and Solutions: Paragraph

• Introduction
  – Problem: The reader does not know anything about the topic
  – Solution: Provide background information
  – Problem: The reader does not know why you’re writing
  – Solution: Introduce yourself and your purpose
  – Problem: The reader doesn’t know why s/he should listen to you
  – Solution: Establish your authority
Problems and Solutions: Paragraph

• Conclusion
  – Problem: The reader might have forgotten the main points you made
  – Solution: Summarize information
  – Problem: The reader is still not convinced you are right
  – Solution: Provide “closing arguments”
  – Problem: The reader doesn’t know what to think or do after they’re done reading
  – Solution: Issue a call to action
Problems and Solutions: Paragraph

• Body paragraphs have the same purpose
  – 1) Establish the topic
  – 2) Identify the problems and solutions

• Example Topic: Misinformation
  – Problem: The reader may not know about the type
  – Solution: Identify the misinformation
  – Problem: The reader may not believe that it’s misinformation
  – Solution: Provide evidence to support your statement
  – Problem: The reader may have information countering yours
  – Solution: Acknowledge counterarguments
Example: Homework #5
1) Establish the topic

Security concerns of using this smart power meter is also arising. What kind of security problems can be arisen by smart meters? The smart meter causes fire. Yes, they do cause fire, so do analog meter and home appliances. The fire reason should be deeply digged. For example, sometimes, because the resident uses some big power consumption device which results in cable and meters overloading, the fire happens. And also the fire rate because of smart meters should also be investigated. If this rate is much higher than analog device, then smart meter is not accepted. Another issues includes safety of privacy data and preventing being hacked from hostile attack. I believe that computer scientists do have solution to solve these problems. Therefore security is not an obstacle.
Example: Homework #5

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Security concerns of using this smart power meter is also arising. What kind of security problems can be arisen by smart meters? The smart meter causes fire. Yes, they do cause fire, so do analog meter and home appliances. The fire reason should be deeply digged. For example, sometimes, because the resident uses some big power consumption device which results in cable and meters overloading, the fire happens. And also the fire rate because of smart meters should also be investigated. If this rate is much higher than analog device, then smart meter is not accepted. Another issues includes safety of privacy data and preventing being hacked from hostile attack. I believe that computer scientists do have solution to solve these problems. Therefore security is not an obstacle.
Problems and Solutions: Paragraph

Example: Homework #5

2) Identify the problems and solutions

Security concerns of using this smart power meter is also arising. What kind of security problems can be arised by smart meters? The smart meter causes fire.

Problem:

Solution:
Example: Homework #5

2) Identify the problems and solutions

Security concerns of using this smart power meter is also arising. What kind of security problems can be arised by smart meters? The smart meter causes fire.

Problem: The reader does not know what kind of security problem to worry about

Solution: Identify the security problem
Example: Homework #5

2) Identify the problems and solutions

   Yes, they do cause fire, so do analog meter and home appliances. The fire reason should be deeply digged.

Problem:

Solution:
Example: Homework #5

2) Identify the problems and solutions

Yes, they do cause fire, so do analog meter and home appliances. The fire reason should be deeply digged.

Problem: The reader may have counter information

Solution: Acknowledge counterarguments and establish why you’re still right
Writing strategy: think about purpose

Composition = Content

Paragraph = Topic

Sentence = Subject

Inform and persuade

Develop a single idea

Develop a single thought

Your purpose is tied to your solution!
Identifying the Problem

• At each level of the writing process, you are providing a solution to a specific kind of problem.

• Sentence level: subject problem
  – Subject
  – Verb
  – Object

• Sentence purpose: Create a single unit of thought (subject)
Problems and Solutions: Sentence

• Every sentence will have the same problems and solutions
  – Problem: The reader doesn’t know who/what you’re talking about
  – Solution: Identify the subject
  – Problem: The reader doesn’t know what the subject does/did
  – Solution: Identify the verb
  – Problem: The reader doesn’t know which object the subject did something to
  – Solution: Identify the object (optional)

• Try to keep sentences short
• Use only one main subject-verb-object
Problems and Solutions: Sentence

• Example: Homework #5 (run-ons)
  – “This graph is the only information in this pamphlet about how the RF EMF radiation is different from the vast number of sources of radio waves, including (always on) wifi, smart phones and tablets that are always on, broadcast television and radio and it has no measurement of any kind, only speculation. “
  – Identify the subject
  – Identify the verb
  – Identify the object (if available)
  – How can we revise to make everything clearer?
Problems and Solutions: Sentence

• Example: Homework #5 (repetition)
  – “The main feature of this new meter is it equipped with a wireless transmission device inside the meter, so it could transmit the meter readings back to utility company frequently and wirelessly.“

  – Identify the subject
  – Identify the verb
  – Identify the object (if available)
  – How can we revise to make everything clearer?
Problems and Solutions: Sentence

• Example: Homework #5 (wordiness)
  – “There are further claims regarding people experience headaches and having to leave their homes which are again not supported by any kind of evidence or concrete examples.“
  – Identify the subject
  – Identify the verb
  – Identify the object (if available)
  – How can we revise to make everything clearer?
Conclusion

• Think about purpose, purpose, purpose!
  – Purpose of a composition: inform/persuade
  – Purpose of a paragraph: develop single idea
  – Purpose of a sentence: develop single thought

• Look for the problems and solutions
  – Content problem: What the audience doesn’t know
  – Topic problem: What the audience doesn’t know
  – Subject problem: What the audience doesn’t know
  – SOLUTION: Tell them what they need to know!
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