Explaining Complex Technical Topics to Researchers

Virtual Residency Workshop 2020

Gretta D Kellogg, ACI-REF
Institute for Computational and Data Sciences, Penn State University
Explaining Complex Technical Topics to Researchers

Virtual Residency Workshop 2020

Gretta D Kellogg, ACI-REF
Institute for Computational and Data Sciences, Penn State University
Explaining Complex Technical Topics to Researchers

Virtual Residency Workshop 2020

Gretta D Kellogg, ACI-REF
Institute for Computational and Data Sciences, Penn State University
As an ACI-REF or research facilitator – we work with researchers who are incredible in their disciplines!
As an ACI-REF or research facilitator – we work with researchers who are incredible in their disciplines!

So what do we provide? That link to the computational support that can make their life and their research better.

ALL YOU NEED IS LOVE?
FALSE. YOU NEED RESEARCH
I really liked this topic because I’m actively working on improving my skills as I meet with the researchers. Not long ago, I failed while explaining an ‘easy’ topic....

- 1st I tried the ‘rational’ approach  
  “this is more scalable, results much faster”

- 2nd try was using an analogy  
  “using a bulldozer to put in a driveway...not a shovel”

- 3rd try was the real fail  
  “burn out a cheap blender trying to crush ice”
Explaining Complex Technical Topics to Researchers

I really liked this topic because I’m actively working on improving my skills as I meet with the researchers. Not long ago, I failed while explaining an ‘easy’ topic....

• 1st I tried the ‘rational’ approach
  “this is more scalable, results much faster”

• 2nd try was using an analogy
  “using a bulldozer to put in a driveway...not a shovel”

• 3rd try was the real fail
  “burn out a cheap blender trying to crush ice”
I really liked this topic because I’m actively working on improving my skills as I meet with the researchers. Not long ago, I failed while explaining an ‘easy’ topic....

- 1st I tried the ‘rational’ approach
  “this is more scalable, results much faster”
- 2nd try was using an analogy
  “using a bulldozer to put in a driveway...not a shovel”
- 3rd try was the real fail
  “burn out a cheap blender trying to crush ice”
Unfortunately that 3rd analogy stuck
…..I was sad.
Effective science communication happens when we listen and connect. It happens when we use empathy. Communication is headed for success when we pay more attention to what the other person is understanding rather than focusing solely on what we want to say. - Alan Alda

Source: https://www.aldacenter.org/elda-method
Explaining Complex Technical Topics to Researchers

“Effective science communication happens when we listen and connect. It happens when we use empathy. Communication is headed for success when we pay more attention to what the other person is understanding rather than focusing solely on what we want to say.” - Alan Alda

Source: https://www.aldacenter.org/elda-method
• Listen first to the faculty or researcher
  – Learn about their goals, needs, and expectations
  – Listen for key words & phrases they use to explain their own science
  – Take notes and summarize what you’ve heard back to them
  – Consider if some of the words or examples they used might work to help explain concepts back to them

Sources: Jack Zenger and Joseph Folkman, “What Great Listeners Actually Do”
Joseph Topomycky and Shaya Golparian, “Balancing Openness and Interpretation in Active Listening”
• Listen first to the faculty or researcher
  – Learn about their goals, needs, and expectations
  – Listen for key words & phrases they use to explain their own science
  – Take notes and summarize what you’ve heard back to them
  – Consider if some of the words or examples they used might work to help explain concepts back to them

Sources: Jack Zenger and Joseph Folkman, “What Great Listeners Actually Do”
Joseph Topornycky and Shaya Golparian, “Balancing Openness and Interpretation in Active Listening”
Our role as research facilitators

• Work to provide explanations and examples in familiar terminology
• Try not to cover all of your ideas or plans at one sitting
• Don’t minimize the value of setting down a ‘seed’ for later
Our role as research facilitators

- Work to provide explanations and examples in familiar terminology
- Try not to cover all of your ideas or plans at one sitting
- Don’t minimize the value of setting down a ‘seed’ for later
- Take time to create visuals, slides or colored workflows
- Keep it simple and easy to implement
Bottom line..... this community is willing to work at explaining how our available computing resources can enable more effective research.

It is ALL about enabling researchers to achieve better results. Leveraging IT technology that helps them get their research accomplished, published and funded.
I am an ACI-REF at Penn State for the Institute of Computational and Data Sciences. We have a wonderful team supporting PSU researchers and faculty. In prior years, I worked as an IT Project Manager in Enterprise Computing and have worked as a Program Manager of two Genomic centers at Penn State. I have always emphasized a customer service-oriented approach in my experience as an IT professional and educator.

You are welcome to contact me, my contact information is here: www.linkedin.com/in/grettadkellogg