

BUILDING A COMMON VISION

Developer:

Pacific Science Center

Category:

How People Learn

Approximate length:

45 - 75 minutes, though shorter variations are possible

Format:

Workshop

MAIN IDEA:

This activity puts scientists in the position of being learners about a subject they don't know well. It shows that we all come into learning situations with different prior knowledge and preconceptions. It provides an effective introduction for identifying appropriate strategies for conveying complex concepts to others.

RELEVANT OBJECTIVES:

- Scientists develop communication strategies that support inquiry.
- Scientists develop a broader understanding of how people learn and the nature of informal learning environments.

**HOW THIS RELATES TO OTHER
PROFESSIONAL DEVELOPMENT ELEMENTS:**

This element is flexible and can be used to emphasize a variety of different concepts, such as how people learn, useful facilitation strategies, and the idea of an "expert blind spot." It is often used immediately following *Making Meaning* and *Personal Learning*, to help participants grasp some of the more abstract theories concerning how people learn by engaging scientists in role-playing activities right away. Following this element with *Using Experiential Analogs* allows scientists to create their own useful analogies. This element also works well in shorter or one-time workshops. Consider pairing it with *Personal Learning* for a simple 60 to 90 minute workshop.

ASSUMED PRIOR KNOWLEDGE AND EXPERIENCE:

We assume the scientists are curious to learn about the qualities of engaging activities, and, in particular, the different roles played by scientists and visitors.

ROOM SETUP AND MATERIALS PREPARATION:

Prepare folders with drawings and scratch paper and set them out in stacks. For shorter variations, or when working with a large group (over 20 participants), it may be useful to group folders for all rounds together in one paper-clipped stack for easy distribution and time management.

Have a whiteboard or poster paper ready to record discussion comments between rounds.

PROCESS:

Part 1: Introduction (5 minutes)

- Provide a general overview of how the activity will work. Scientists work in groups of three, with two people playing the role of science center “visitors,” while the other is the “scientist” who will explain a concept. In this case, the concept is not a scientific one; rather, it is a line drawing that the visitors need to reconstruct based on the scientist’s verbal instructions. The process is repeated three different times and ways, so that each person has the opportunity to be the scientist.
- Explain the setup for each round. Scientists sit at tables so that the two visitors are facing the scientist. Each person has a manila folder, pen, and sheet of blank paper.
- Be sure to warn participants that when they are the scientist (with the line drawing in their folder) they should position their folder very carefully so that no one else can see the image. We don’t want anyone’s experience to be spoiled!



Part 2: Activity and discussion (10 - 15 minutes per round)

Round 1 Procedure: The group is told that the scientist will be given a line drawing and will verbally explain to the visitors how to reproduce the drawing. The rules for Round 1 are:

- Two visitors face the scientist.
- Visitors use pen and piece of scratch paper to draw what the scientist describes.
- Manila folders hide what visitors draw from each other and from the scientist.
- No questions are allowed between visitors and scientist.
- Scientist cannot use hands to aid instruction.

Think of this round as being similar to what happens in a large lecture format. Hand out a drawing to each scientist, making sure the visitors cannot see the drawing as you pass it out. Give groups five to ten minutes to draw; then, ask them to stop and see how well the scientists and visitors did. Groups that finish early can look at the results when they are finished.

As they look at how they did, ask them to consider two questions:

- “What techniques did the scientist use that proved especially helpful?”
- “What techniques did the scientist use that made the process difficult?”

After participants have had sufficient time to develop thoughts about these two questions, have individuals share their thoughts with the entire group and capture the ideas on poster paper, whiteboard, or PowerPoint slide. These ideas should form the beginnings of a list of strategies that may be used to communicate complex ideas. Use prompts and observations to encourage these reflections. Help make connections between this process and the process scientists use when communicating their own work in a real-world setting. Then, move on to Round 2.

Round 2 Procedure: Have the three people in each group change position, so that there is a new scientist in each group with the two visitors facing the scientist. Repeat the experience, but with these new rules:

- Two visitors face the scientist.
- Visitors use pen and piece of scratch paper to draw what the scientist describes.
- Scientist can see what visitors draw, and visitors can each see what the other is drawing.
- No conversation or questions are allowed between visitors and scientist.
- Scientist cannot use hands to aid instruction.

Once groups have had five to ten minutes to draw, ask them to stop and see how well the scientists and visitors did. Groups that finish early can look at the results when they are finished. As they look at how they did, ask them to consider the same discussion questions from Round 1.

After participants have had sufficient time to develop thoughts about these two questions, share thoughts with the entire group and capture new ideas on the poster paper, whiteboard, or PowerPoint slide. Facilitate reflection as described after Round 1. Then, move on to Round 3.

Round 3 Procedure: Have people in the groups of three change position one last time, so that there is a new scientist in each group, with the two visitors facing the scientist. Repeat the experience, but with these rules:

- Two visitors face the scientist.
- Visitors use pen and piece of scratch paper to draw what the scientist describes.
- Scientist can see what visitors draw, and visitors can each see what the other draws.
- Visitors can ask questions, and the scientist can respond.
- Scientist cannot use hands to aid instruction.

Give the groups another five to ten minutes to draw. Then ask them to see how well they did and to consider the same two questions, focusing in particular on what this final change in the rules allowed them to accomplish. Put any new thoughts on the poster paper, whiteboard, or PowerPoint slide.

Part 3: Discussion (10 minutes)

- Review the list that has been generated, emphasizing some of the most powerful strategies that helped the visitors understand what the scientist was describing. One option is to type up the list (cleaning up the wording and eliminating duplicate ideas) and distribute it to the group. Alternatively, have a list of strategies that are already known to be effective ready to distribute. An example of such a list is below:
 - Use known vocabulary
 - Use analogies
 - Compare and contrast to familiar objects
 - Ask probing questions – no yes/no questions allowed
 - Frame the “big picture,” set context as necessary
 - Allow significant time for discussion and dialogue
 - Use thoughtful sequencing
 - Consider the appropriate level of detail
- Facilitate a final reflection regarding how these strategies may be applicable to your participants’ own experiences in communicating their scientific work.



Part 4: Reflection and discussion (10 - 15 minutes) OPTIONAL

- *Building a Common Vision* is a great way to emphasize the importance of paying attention to what a visitor may bring into a learning situation (prior knowledge, interest, motivations) as well as what the scientist facilitator brings (expert blind spots).
- The Expert Blind Spot Worksheet at the end of this element is a good reflection-tool that can be used right after the main activity portion of *Building a Common Vision*. Pass out this worksheet. Ask participants to spend about 10 minutes reflecting on their own. The questions they will consider include:
 - Where is your expert blind spot?
 - What concepts do you want to practice describing to non-experts?
 - How can you “frame” your topic to build the necessary context and relevance for your audience?
 - How can you help people feel safe and comfortable when they are talking to “the expert” (you)?
- Allow time for small groups or pairs to share their insights and reflections. Then, regroup and facilitate some large-group sharing and reflection.

What is an Expert Blind Spot?

It's the tendency of content experts to forget what it's like to be a non-expert. Believe it or not, being a content expert may make it *more* difficult to communicate your work, not less. Why? Because it's easy to lose sight of the learning process and the needs of those who are not experts. Searching for your expert blind spot reminds you to place the concepts you wish to share within a framework of how people learn.

MATERIALS:

- o Three different simple line drawings on 8.5x11 paper, with one set of the three drawings per group of three workshop participants (see sample drawings on pages 21 – 23)
- o Manila folders, color-coded by round, with different drawings inside for each round (see sample photo below)
- o Manila folder for each visitor-participant in Round 1, with blank paper inside
- o Pens for each participant, so that they leave a record of any problems encountered
- o Blank 8.5x11 paper
- o Poster paper, or whiteboard, and appropriate pens
- o Instructions for each round (in folders or on PowerPoint)
- o (Optional) Computer, LCD projector and screen to display instructions
- o Expert Blind Spot Worksheet, one per participant (at the end of this element)

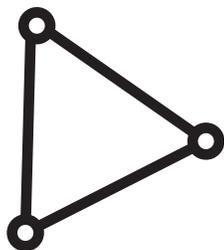
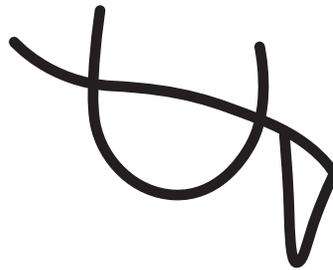
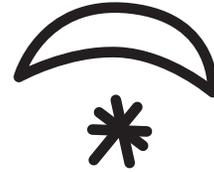


VARIATIONS OR MODIFICATIONS:

This activity can easily be modified by changing the number of rounds, number of participants in each group (pairs instead of trios), or the rules for each round. To complete the activity in 20 to 30 minutes, consider two rounds with pairs (so that each person is given the opportunity to be the scientist). In this case, retain the constraint of the scientist being unable to see the visitors' drawing in both rounds. Use the manila folders to make sure the drawings stay hidden. For the second round, allow dialogue and questions between visitors and scientists.

Example of Line Drawing, Round 1

Building a Common Vision



Example of Line Drawing, Round 2

Building a Common Vision



Example of Line Drawing, Round 3

Building a Common Vision



Getting Past Your Expert Blind Spot

Where is your expert blind spot?

What concepts do you want to practice describing to non-experts?

How can you “frame” your topic to build the necessary context and relevance for your audience?

How can you help people feel safe and comfortable when they are talking to “the expert” (you)?