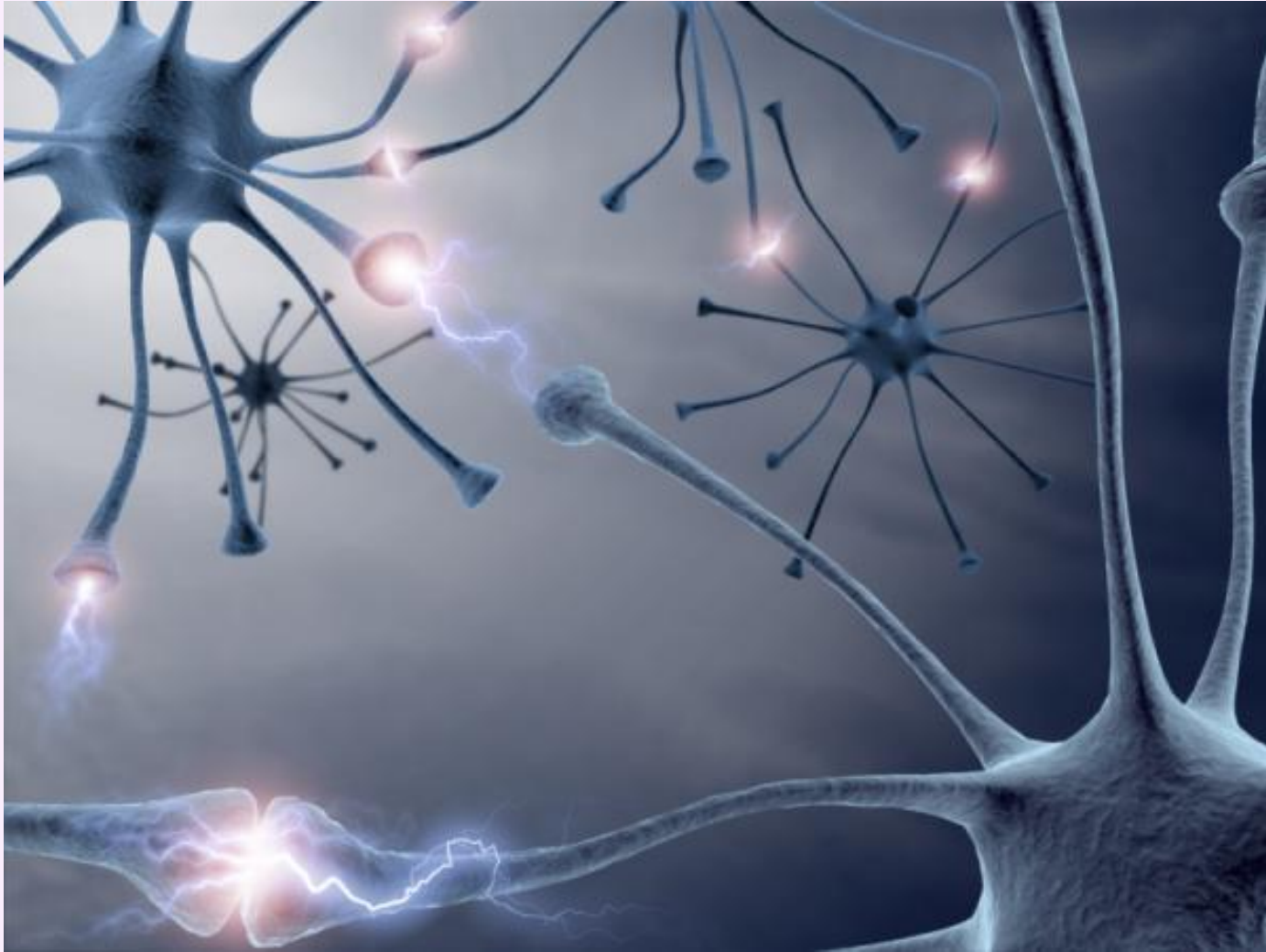


# Best Practices for Supporting Learning among Beginning Farmer and Rancher Women



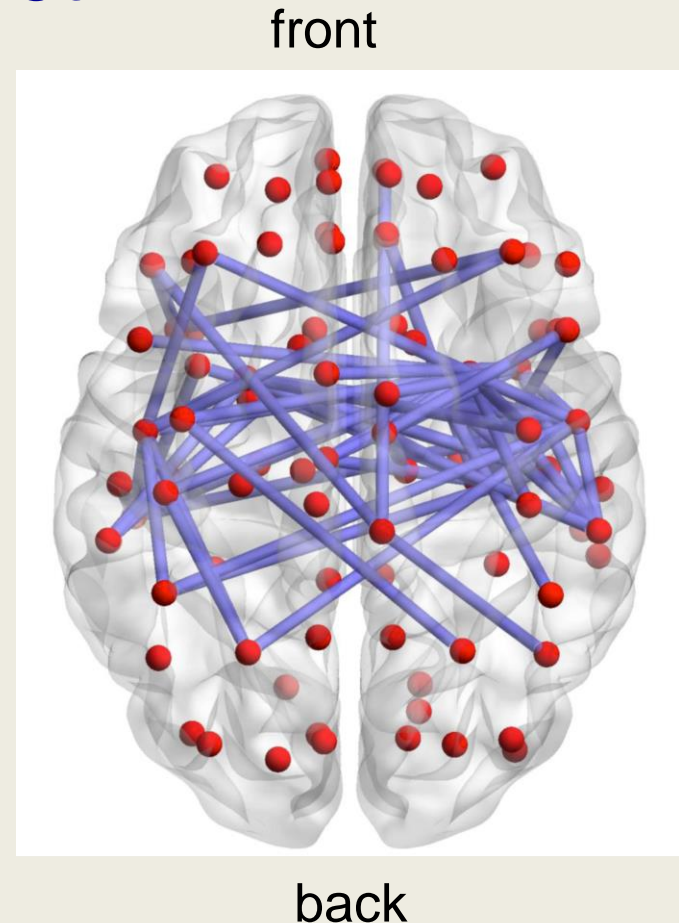
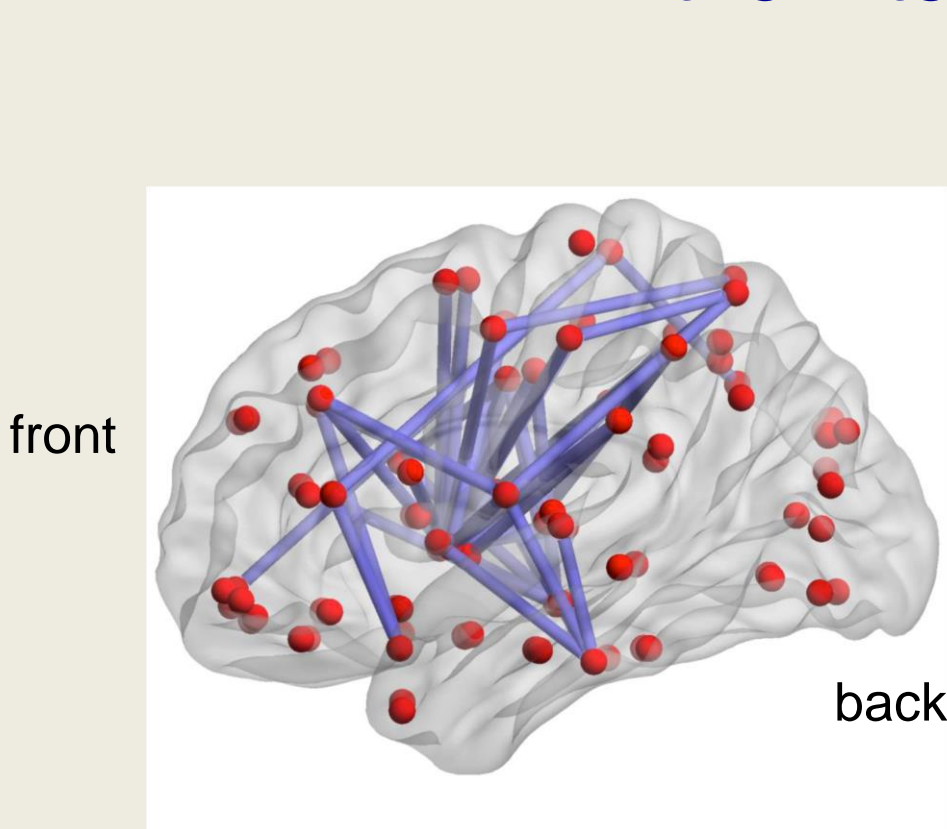
# The Science of Learning 101



You develop specific neural pathways in your brain for everything you know, feel, and can do.



# Brain pathways in adolescents using the Internet.



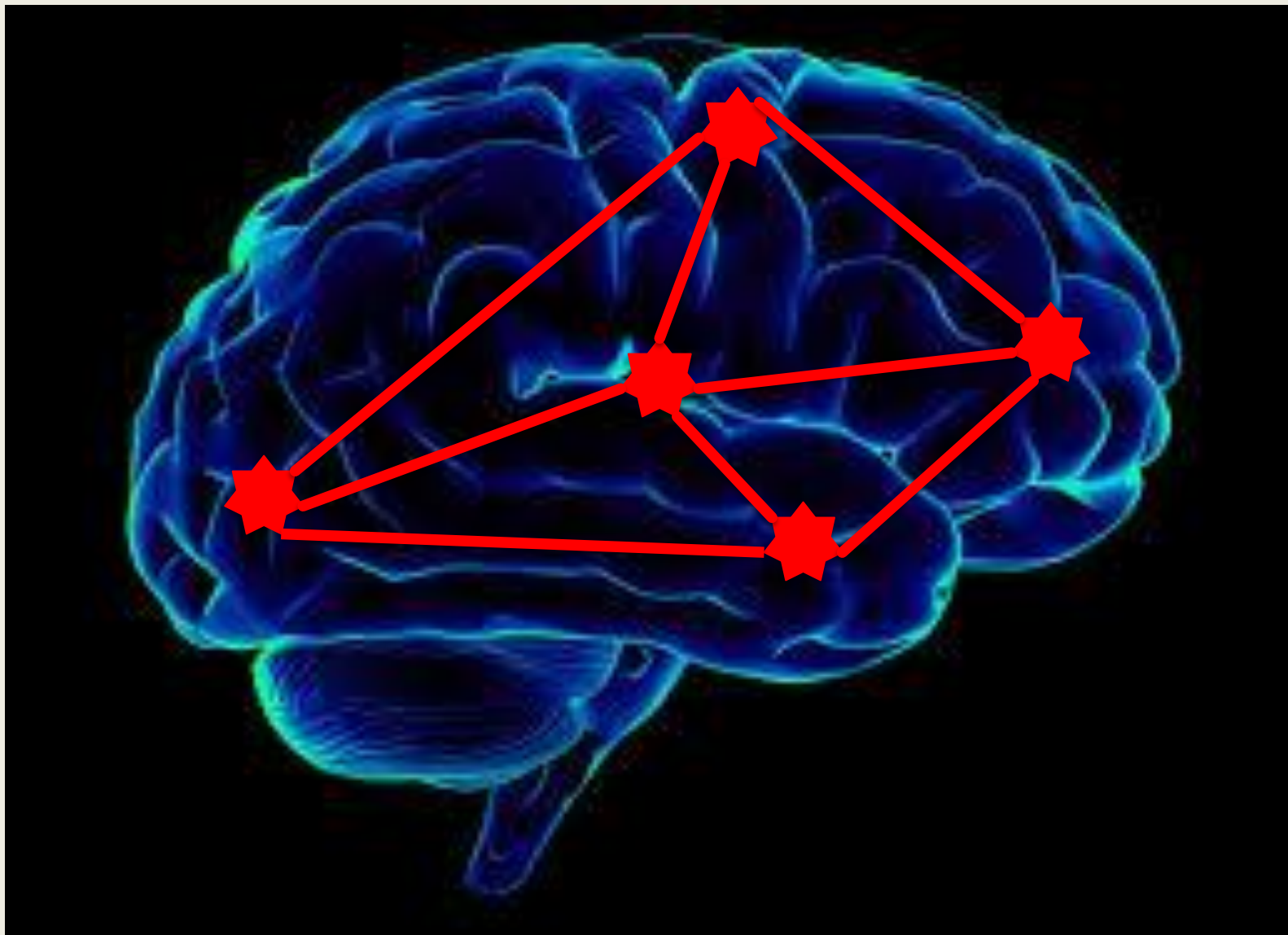
Hong SB, et al. (2013) Decreased Functional Brain Connectivity in Adolescents with Internet Addiction. *PLoS ONE* 8(2): e57831.





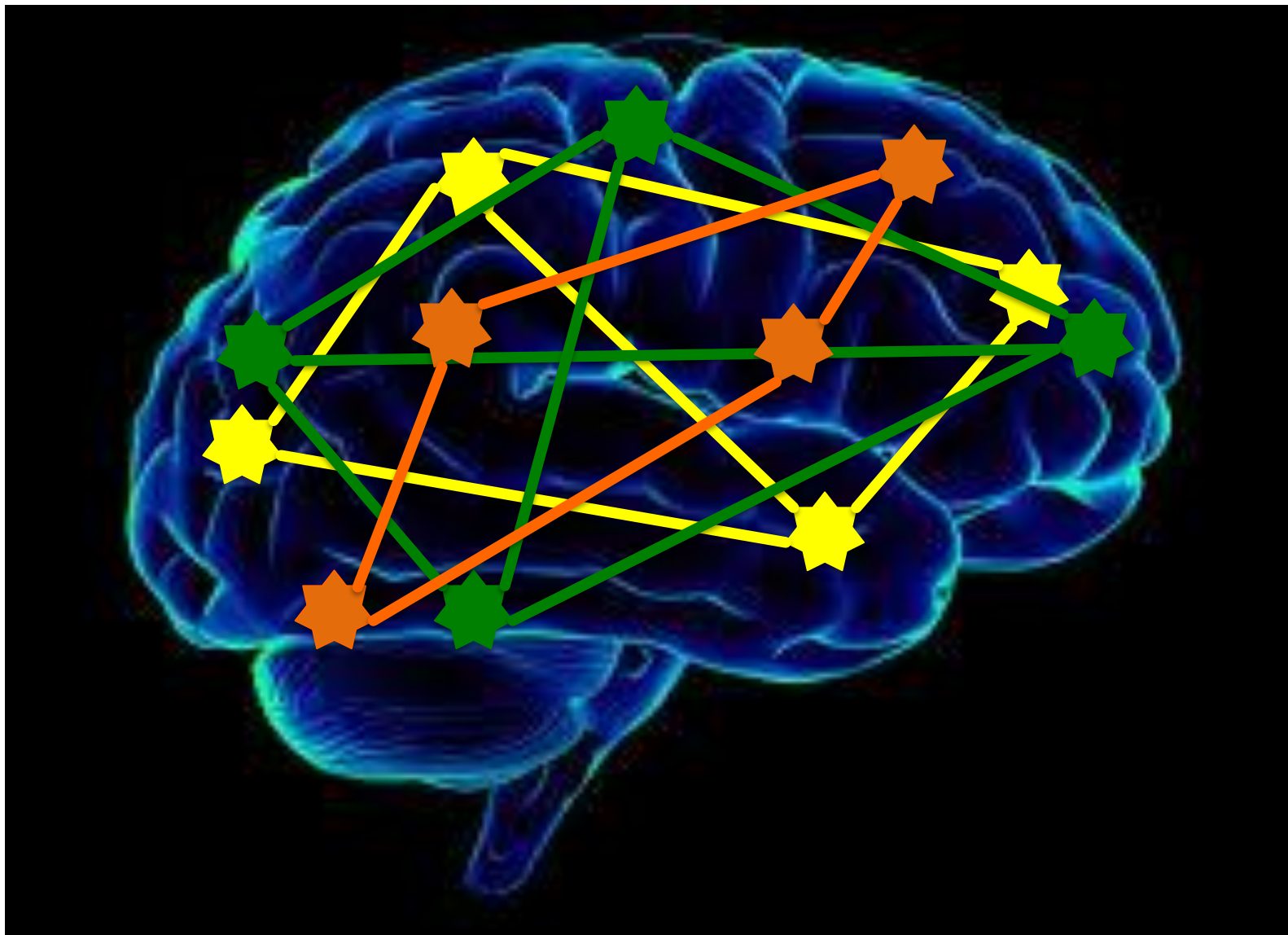


Hypothetical neural pathways for knowledge and skills needed to troubleshoot a tractor that won't start.

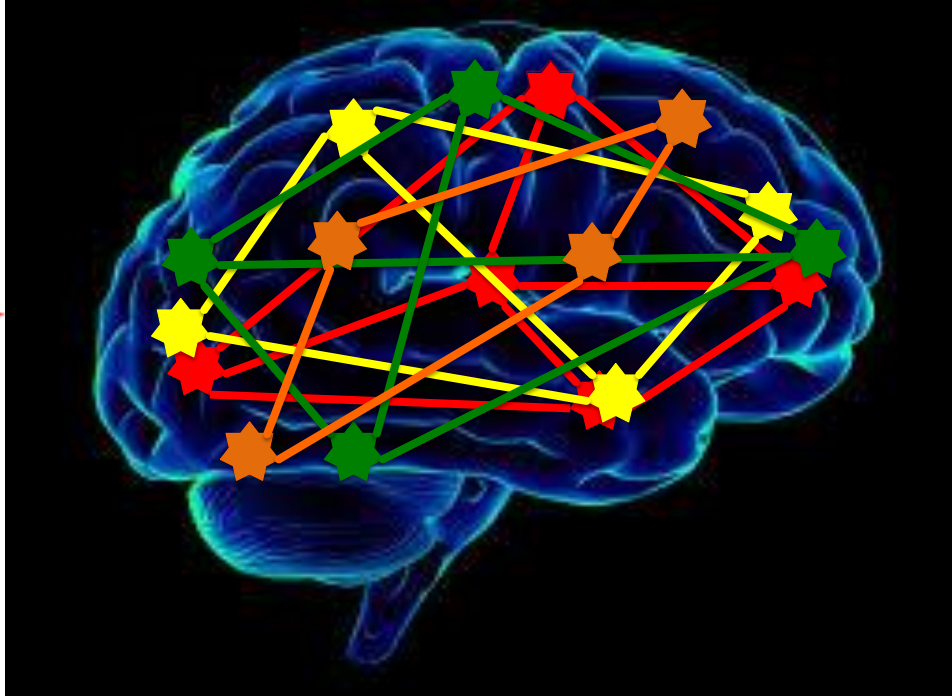


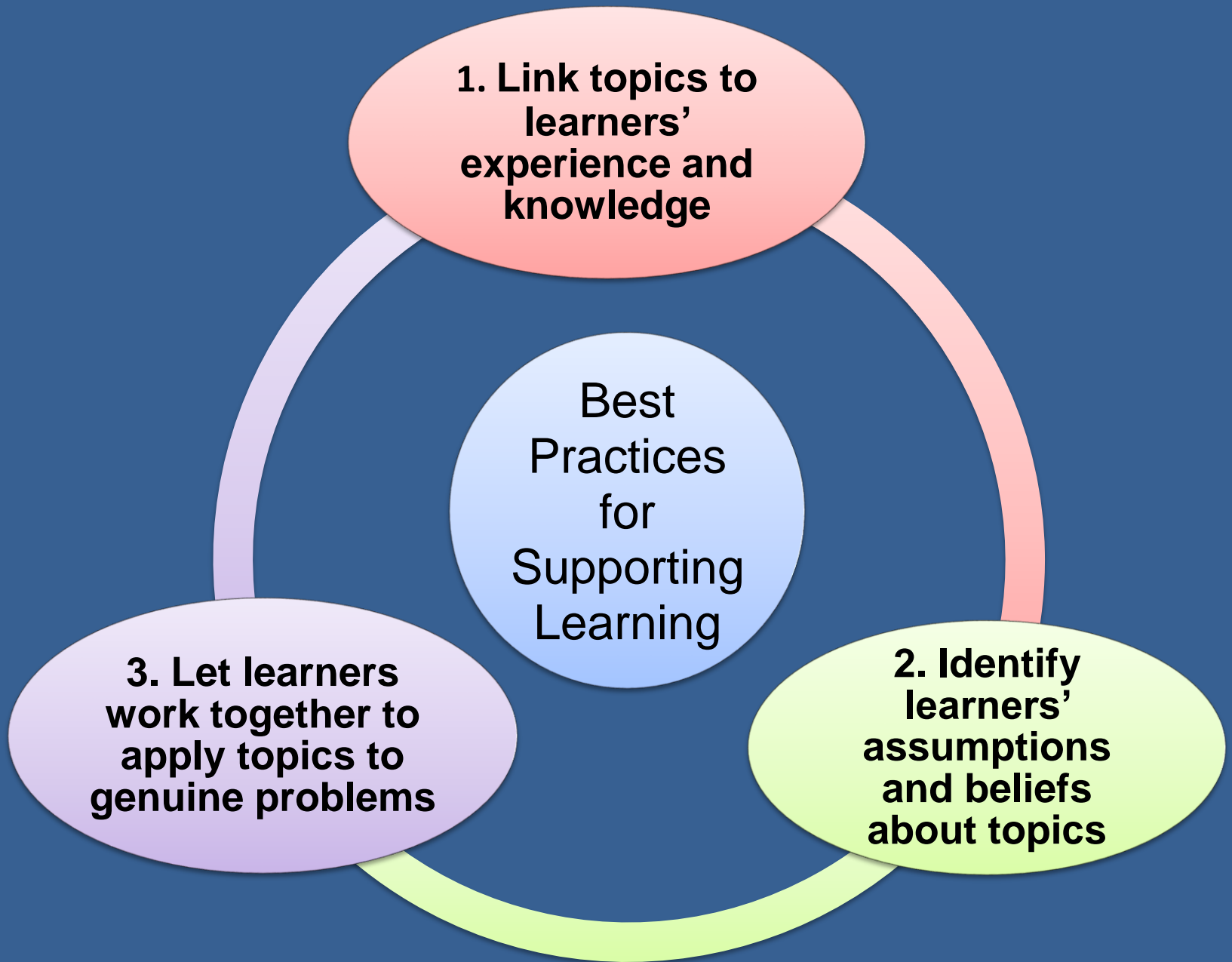














1. Link topics to  
learners'  
experience and  
knowledge

Best  
Practice

The most effective way to support learning for women farmers and ranchers is . . .

**“Allow them to share their experiences”**

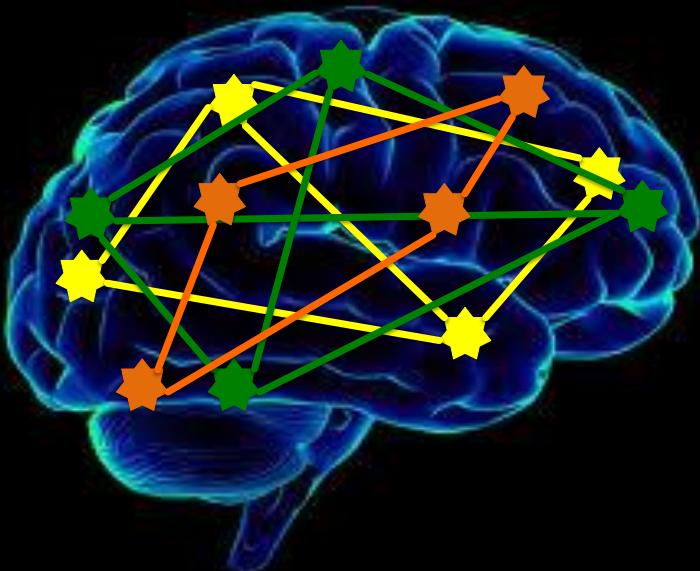
**“Create an environment that draws upon the lived experiences of people in the learning group”**

**“Meet them where they are”**

“Jump starts”  
new learning

Validates prior  
experience

Enhances  
motivation



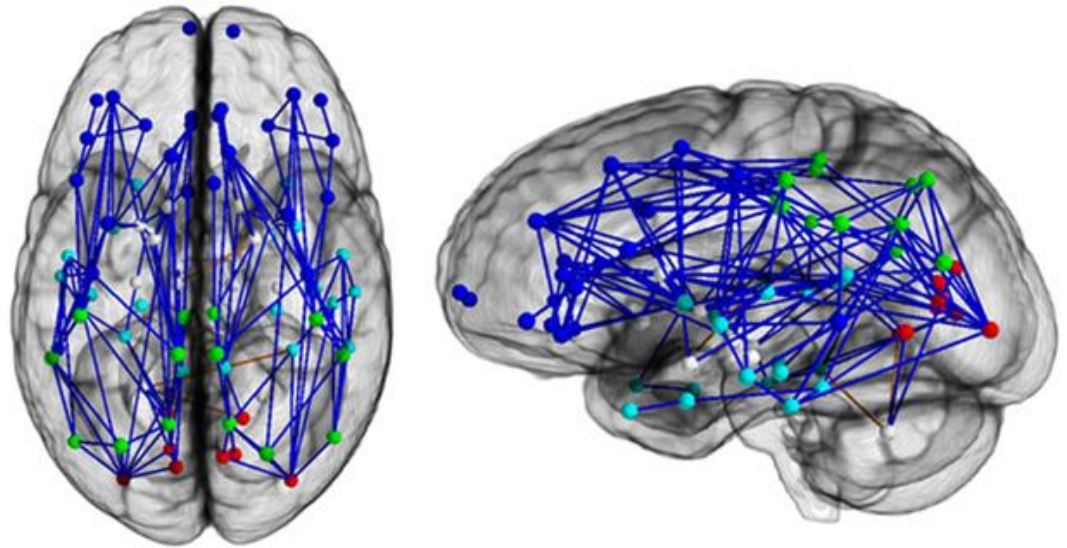
Creates more complex  
neural networks, which  
enable problem solving

**Female brains are designed to make connections . .**



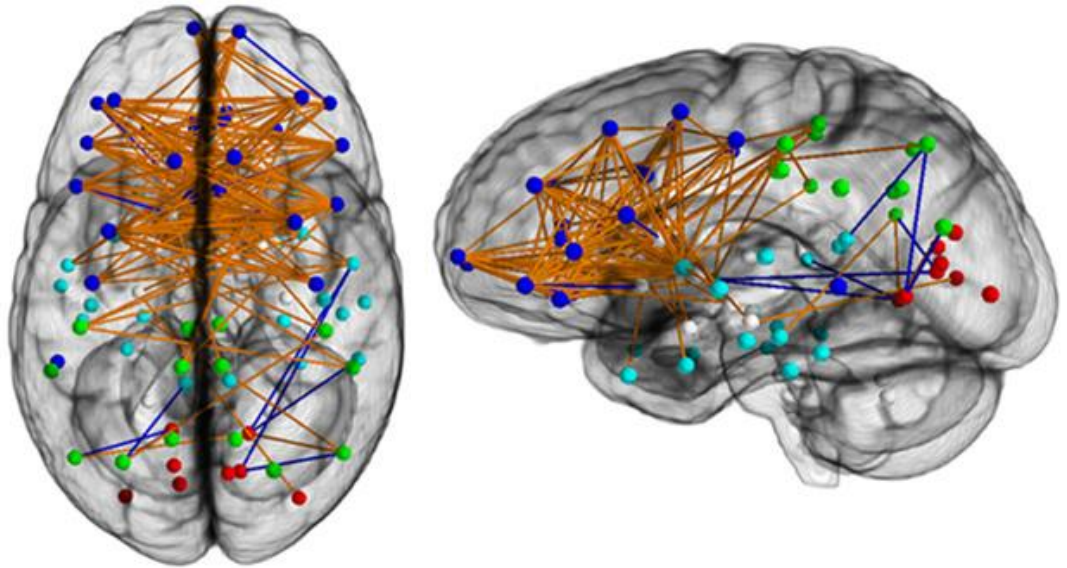
## Males

Greater same-side connectivity enabling coordination between perceptions and motor activity



## Females

Greater across-sides connectivity enabling integration of analytical reasoning (left) with intuitive processes (right)



Ingalhalikar, et al. (2014). Sex differences in the structural connectome of the human brain. *Proceedings of the National Academy of Sciences*, 111(2), 823-828.

## Focus on BFRW...

# Experience and Knowledge Base of Beginning Farmer and Rancher Women

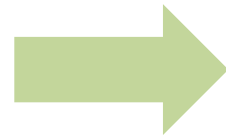
**Life experience:** Nearly half over age 50

**Experience in other professions:** Nearly half also work off farm or ranch

**Diverse experiences:** Women-owned or operated farms tend to have more diverse production

**Multiple life roles:** Women's' identities tend to include more major life roles

Best Practice 1.  
Link topics to learners'  
experience and knowledge



Topic: Troubleshooting a  
tractor that won't start

What prior experience and knowledge might beginning farmer and rancher women have that somehow relate to the knowledge and skills they need to **troubleshoot a tractor that won't start**?



Best Practice 1.  
Link topics to learners'  
experience and knowledge



Topic: Developing a  
holistic business plan

What prior experience and knowledge might beginning farmer and rancher women have that somehow relate to the knowledge and skills they need to **develop a holistic business plan?**





2. Identify learners'  
assumptions and  
beliefs about  
topics

Best  
Practice

The most effective way to support learning for women farmers and ranchers is . . . **start by truly examining your assumptions about what woman can/can't do.**

The least effective way to support learning for women farmers and ranchers is . . . **in a traditional classroom.**

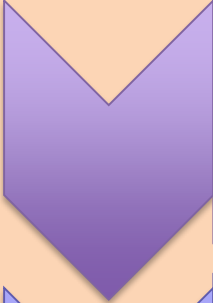
To a woman farmer or rancher, learning means . . . **peer support.**

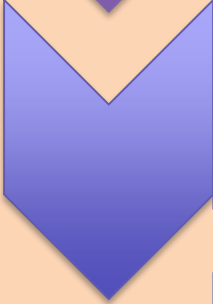
“Taking care of the animals comes naturally to me, but I don’t have a knack for the business plan.”

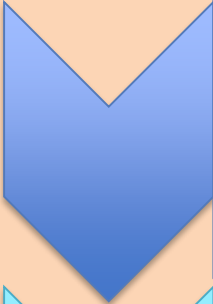
“My farm is an integral part of the community in this area.”

“Caring for our children will always come first before the farm.”

I know I will have a difficult time getting a loan.”

- 
- Neural networks that support assumptions and beliefs tend to be strong, persistent, and linked to emotions.

- 
- Assumptions and beliefs can act as subconscious “filters” in learning.

- 
- Early in training, identify learners’ assumptions and beliefs, and, most importantly, the experiences on which they are based.

- 
- Provide new experiences that support examining assumptions and beliefs.



## Best Practice 2. Identify learners' assumptions and beliefs about topics

What assumptions and beliefs may beginning farmer and rancher women have that “filter” their learning about developing a holistic business plan?

What types of experiences may be the basis for their assumptions and beliefs?

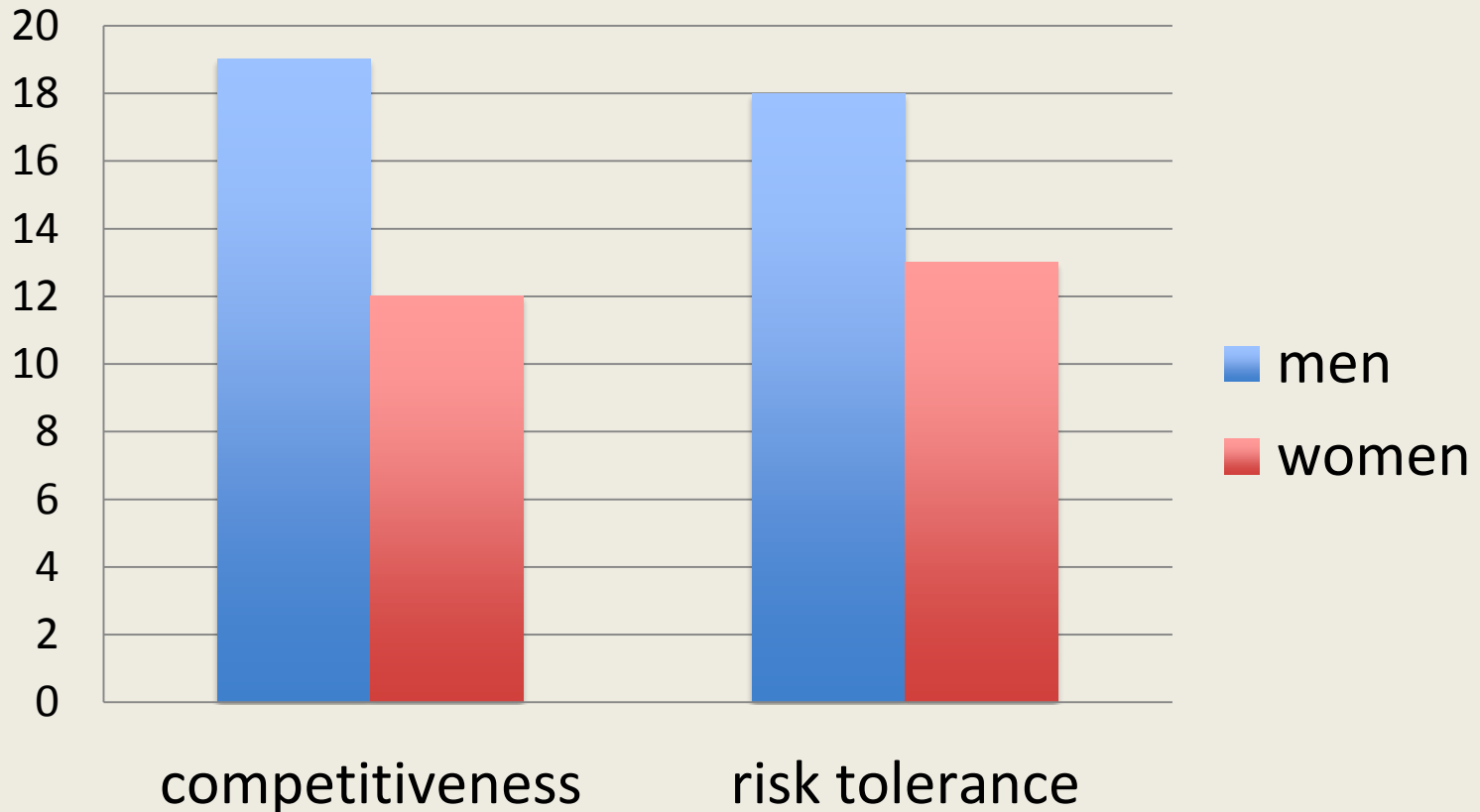
What types of new experiences could you provide to support examining those assumptions or beliefs?

# Women entrepreneurs tend to be less competitive and less risk tolerant than men

Individual Entrepreneurial Aptitude Survey

22,554 men and women in 36 countries total (12,927 women, 9,627 men)

**% respondents who chose highest response value**



## Summary of gender differences in math performance and beliefs:

1. No significant differences between females and males in math performance
2. Females tend to have higher math anxiety and lower math self-efficacy
- 3. Females tend to underperform when they perceive gender stereotype threats**

*The least effective way to support learning for BFRW is ... “putting down the capacity/potential of women farmers, particularly in areas that are more male dominated (e.g., farm business manager, tractor work, etc.)”*

3. Let learners work together to apply topics to genuine problems

Best  
Practice

## Best Practice 3. Let learners work together ...

- Two brain networks dedicated to learning from others.
- One system enables you to imitate others' actions...





... the other system enables you to put your self  
in other's "shoes"  
(this system is more structurally developed in females)



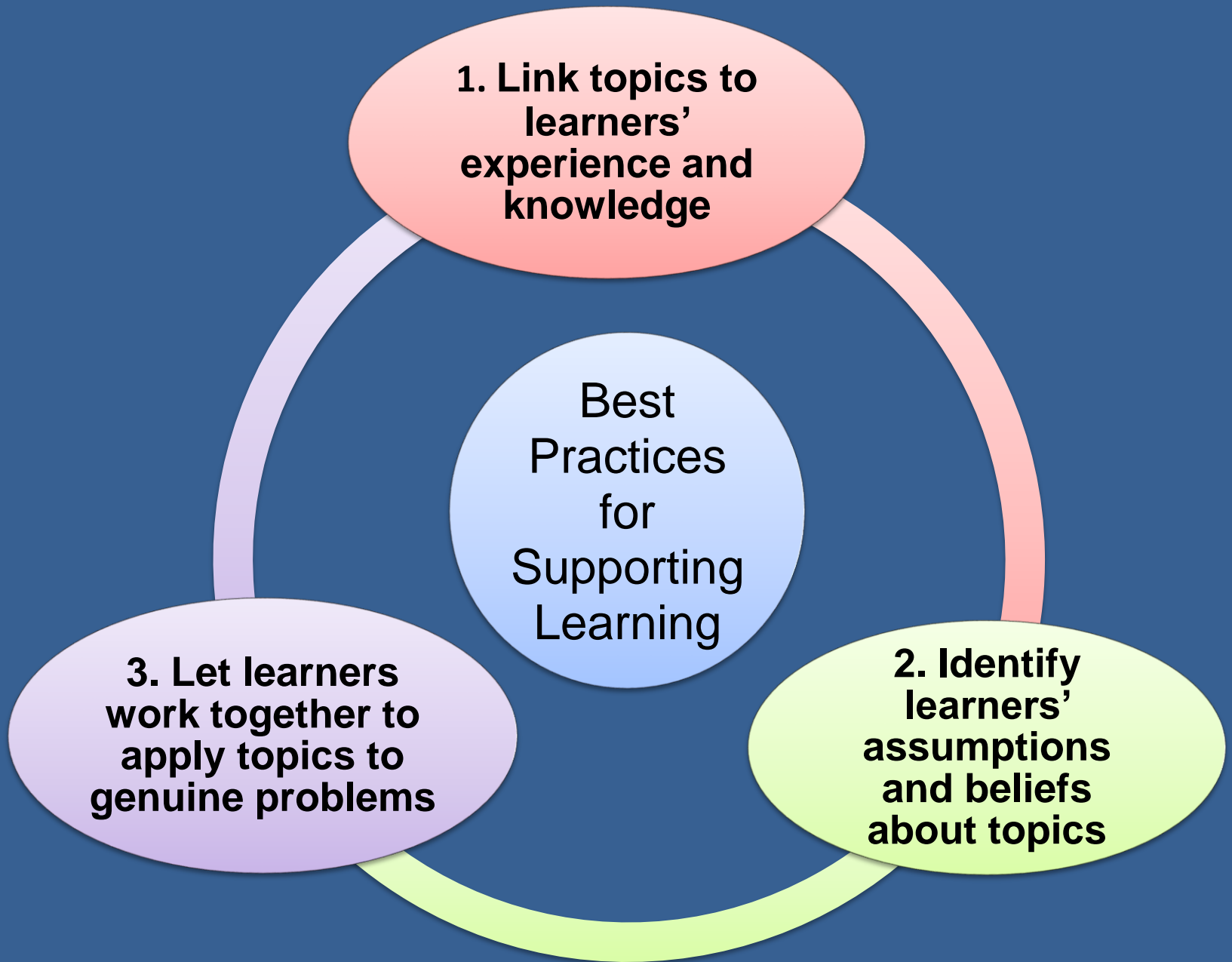
## Best Practice 3. Let learners work together to apply topics to genuine problems.

- 
- Makes learning relevant.

- 
- Transforms “information” into knowledge and skills

- 
- Increases complexity in knowledge and skills

- 
- Enables transferring knowledge and skills to new contexts



## Step 1. Design the Learning Context.

Select one from Columns A, B, C, then describe your topic (D), and then pick your Best Practice (E)

A	B	C	D	E
Pick your Learners	Pick your Learning Format	Pick the Group Size	Describe your Topic or Learning Goals	Pick your Best Practice (pick one)
<input type="checkbox"/> Beginning Farmer and/or Rancher women only <input type="checkbox"/> Beginning Farmer and/or Rancher women and men <input type="checkbox"/> Mixed experience Farmer and/or Rancher women only <input type="checkbox"/> Mixed experience Farmer and/or Rancher women and men	<input type="checkbox"/> Face-to-face, single meeting <input type="checkbox"/> Face-to-face, multiple meetings <input type="checkbox"/> Webinar <input type="checkbox"/> Online Course <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Small (20 or less) <input type="checkbox"/> Medium (20-50) <input type="checkbox"/> Large (50-100) <input type="checkbox"/> Very Large (over 100)	1. _____ _____ _____ _____	<input type="checkbox"/> 1. Link topics to learners' experience and knowledge.  <input type="checkbox"/> 2. Identify learners' assumptions and beliefs about topics.  <input type="checkbox"/> 3. Let learners work together to apply topics to genuine problems.

**Step 2. Design how you will apply the Best Practice in your Learning Context (two ideas)**

**Step 3. Transfer your Best Practice ideas to a piece of flip chart paper.**



# ENRGIZING OUR PRACTICE

1. What does the morning's sessions make you think about in your own practice?
1. For what can you pat yourself (or your organization) on the back?
1. What ideas do you have about changing things up?



# Making Space for Innovation

(20 minutes)



## WORKSHEET Part 1

Focusing on your BFRW Topic Area, what could you do to insure that you achieve the **worst** imaginable outcomes in your programming for beginning farmer and rancher women?

Flip Chart:

- This is what we should **stop doing** in our programming for BFRW.  
(Consider at the individual, program, and organizational levels.)
- This is **why** we should stop.
- These are the **first steps** we should take to stop.





# Designing successful programs

(20 minutes)

## WORKSHEET Part 2

Focusing on your BFRW Topic Area, and applying what you have learned so far today and your own experiences...

Flip Chart:

- This is what we **could/should** build into the design of programs to support BFRW.
- This is **why** we could/should.  
(Be as specific as you can in your reasoning.)



# Design Principles for BFRW Programs

- Provide safe, non-judgmental environment
- Provide opportunities for discussion and making connections to prior experience, future goals, questioning assumptions, etc.
- Provide hands-on learning activities, time to experiment
- Allow time for “doing research” and synthesizing variety of resources before making decisions

# Design Principles for BFRW Programs

- Provide opportunities to apply knowledge and skills to genuine problems
- Provide opportunities for both women only learning and for women and men learning together
- Support networking and establishing mentoring relationships
- Provide supports for child care
- Offer learning events during convenient times

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