



## W-SARE Teaching and Learning

### Best Practices Toolkit for Developing Impactful Educational Programs

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## TABLE OF CONTENTS

<b>Acknowledgments.....</b>	<b>1</b>
<b>Creating Impactful Outreach and Education Programs.....</b>	<b>4</b>
<b>What is a Learning Style?.....</b>	<b>5</b>
<b>Things to Know about Learning Styles.....</b>	<b>6</b>
<b>Busting Misconceptions about Learning.....</b>	<b>8</b>
<b>Learning Styles and Strategies for Use.....</b>	<b>8</b>
<b>Kolb Learning Style Inventory (KSI).....</b>	<b>8</b>
<i>Diverging.....</i>	<i>9</i>
<i>Assimilating.....</i>	<i>10</i>
<i>Converging.....</i>	<i>10</i>
<i>Accommodating.....</i>	<i>11</i>
<b>Gregorc Style Delineator.....</b>	<b>11</b>
<i>Concrete Sequential.....</i>	<i>12</i>
<i>Concrete Random.....</i>	<i>12</i>
<i>Abstract Sequential.....</i>	<i>13</i>
<i>Abstract Random.....</i>	<i>13</i>
<b>Visual, Aural, Read/Write, and Kinesthetic (VARK).....</b>	<b>13</b>
<i>Visual.....</i>	<i>14</i>
<i>Aural.....</i>	<i>14</i>
<i>Read/write.....</i>	<i>14</i>
<i>Kinesthetic.....</i>	<i>15</i>
<b>Marketing your Educational Program.....</b>	<b>15</b>

Developing a Why Statement for your Educational Program .....	15
Designing Effective Promotional Materials .....	17
Example Educational Flyer .....	19
<b>Knowing Your Audience.....</b>	<b>20</b>
<i>Sex/Gender and Learning Style Preference .....</i>	<i>20</i>
<i>Age and Learning Style Preference .....</i>	<i>21</i>
<i>UnderRepresented Groups and Learning Style Preference.....</i>	<i>23</i>
<i>Education Level and Learning Style Preference .....</i>	<i>26</i>
<i>Physical Location and Learning Style Preference .....</i>	<i>27</i>
<i>Regional Differences and Learning Style Preferences .....</i>	<i>28</i>
<b>Building Trust .....</b>	<b>29</b>
<b>Additional Learning Strategy Considerations .....</b>	<b>30</b>
Use Multiple Learning Strategies .....	30
Advice for Online Educational Programming .....	31
Guidelines for the Use of Specific Teaching Strategies .....	31
Educating Farmers.....	32
<b>Measuring Success .....</b>	<b>34</b>
Evaluation Statements.....	34
Analyzing Results.....	34

## CREATING IMPACTFUL OUTREACH AND EDUCATION PROGRAMS

Impactful outreach and education programs get people to change *something*. When developing SARE-related programs, educators are most often trying to change behavior associated with the adoption of sustainable agricultural best management practices and/or technologies. Getting someone to change a behavior is not as easy as one may think.

To create positive behavior change, educators need to develop programs that ensure participants:

1. Increase awareness of a problem with the current practice/behavior trying to be changed.
2. Improve knowledge levels, so they know how to change.
3. Develop a positive attitude toward the change.
4. Have the skills needed to implement the change.
5. Aspire and commit to change.

**People must want to change a practice or behavior before they do it.**

Accomplishing all five tasks is no easy feat but using the right teaching and learning strategies can help. Program participants must want to come to your programs, they must feel inspired when they are there, and they must walk away with the knowledge, attitudes, skills and aspirations needed to *change*.

People are complex, so it should come as no surprise that the way they learn is complex. Teaching and learning experts have tried to identify *HOW* people learn so educational programs can be developed using the best methods that will be engaging, thought-provoking, and inspire change. What they found is people exhibit a diverse set of learning styles, or ways they like to learn. By setting your outreach and education program up with learning styles in mind, you can increase your chances of success in making the impacts you seek.

This toolkit will provide:

- An overview of learning styles, what they mean, why you should care and how they can be used to your advantage including specific teaching strategies you can use that address each kind of learning style.
- Insights into how to best market your educational program from the very beginning so people will be inspired by what you have to offer.
- Instructions on how to identify your target audience, get them in the room, and how to introduce new information with them in mind based on their learning styles/cultural preferences.
- Ideas on how to build trust so you can most effectively transfer the information needed to bring about the change you seek.
- Tools to measure how well you are incorporating learning styles into your teaching and learning strategy.

The information contained within this toolkit was informed by a comprehensive meta-synthesis of the existing literature as it relates to learning style preferences within agricultural and related disciplines. The approach was very inclusive and followed an academic and rigorous process. For additional details regarding the underlying findings which informed this toolkit readers are suggested to refer to the Western SARE learning styles meta-synthesis report.

## WHAT IS A LEARNING STYLE?

Rather than trying to begin this toolkit with a formal definition of learning styles, we will instead begin with a thought exercise:

Please think of your favorite food. Perhaps you enjoy Italian food and pasta is your favorite. Alternatively, perhaps you love a hamburger, or seafood, or a fresh green salad. Any of these preferences is perfectly valid and is true to you as an individual. Now, think about all the food choices which are available to you. Have you ever stopped to think about why there is such a wide variety of options? The reason so many options exist is because individuals exhibit a diversity of food. Very much like our favorite foods, or food preferences, we all also have a preferred way of learning or learning style.

Learning styles inform our preference for how we like to consume information just like food preferences inform what type of food we like to eat. Extending upon this further, we can also recognize there is no one single best food out there but rather a preferred food for most. The same can be said for learning styles.

Any time we are educating others we must be aware of the wide variety of learning style preferences which exist. We must also be aware of our own personal preference for learning because we tend to teach in the same method in which we learn. Therefore, our own learning style directly impacts our approach to developing educational programs.

The intent of this toolkit is not to rigidly enforce a single set of educational strategies. It is intended to provide a high-level overview of the wide variety of learning styles which exist and provide examples of educational strategies that can be used to appeal to a diverse set of learners.

## THINGS TO KNOW ABOUT LEARNING STYLES

Over 1,000 potential studies were reviewed and provided insights into the development of this toolkit as previously mentioned. Before diving too deep into the strategies offered in the toolkit, you may want to peruse some of the key take aways and what they could mean as you develop a program:

- 1. There were no consistent learning style preferences across the studies.**

*What does this mean?* There is no single best style for developing educational activities. It is important to consider a full spectrum of potential learning style preferences any time you are putting together an educational program.

- 2. Learning style did not predict learner outcomes or performance.**

*What does this mean?* There was no evidence that a specific learning style was more effective than another. Individual differences were more likely to predict performance or behavior change. Therefore, educators should be thinking about a range of learning styles when building their programs.

- 3. Preparation activities were critical to ensure the content was applicable to the intended learner and would be accepted by the target audience.**

*What does this mean?* When working with diverse audiences, including historically underrepresented groups, it was very important to be learner-centric, not instructor-centric. Context and culture must be considered from the onset when developing all aspects of educational activities.

**4. Learning style alignment may affect learner motivation and interest in the topic.**

*What does this mean?* We all have a finite amount of attention with many competing demands for our time. Educational activities should be developed that appeal to a range of learning style preferences so all kinds of learners can find connections and be engaged.

**5. Personal awareness and perspective are critical to ensure the needs and perspectives of others are more readily identified and addressed.**

*What does this mean?* As educators, we need to be aware of our own personal preferences and tendencies. It is important to be diligent when developing educational activities that ensure a range of learning styles are engaged without an overreliance on our personal preferences.

**6. Learning style preferences (verbal, visual, and kinesthetic) should not be viewed as either-or, but rather individually so strategies addressing each preference is used in every educational program.**

*What does this mean?* Chances are you may have a favorite way to learn; however, you probably also like other types of educational strategies, to varying degrees, as well. Remember, we all have preferences but have the ability to learn within other styles as well.

**7. Individuals new to the content may require more concrete and explicit instruction than individuals with more experience that want more abstract concepts.**

*What does this mean?* As a general guide, learners tend to learn best with more structure and guidance when they are new to a topic. Once they have built a



structure and foundation, learners tend to desire more freedom and flexibility in their learning.

#### 8. **Learners want to avoid perceptions of incompetence.**

*What does this mean?* Adult learners have a self-concept they want to maintain. Educational programs which challenge this sense of self can cause a negative reaction. When introducing new concepts, educational programs should focus on leveraging existing perceptions of competence rather than delete-and-replace approaches.

### **BUSTING MISCONCEPTIONS ABOUT LEARNING**

Additionally, there are several persistent myths which have been disproven by science related to brain function and learning styles. They include:

- Humans only use 10% of their brain.
- There are differences in hemispheric dominance (left brain, right brain) which can help explain individual differences amongst learners.
- There are periods in childhood after which certain things can no longer be learned.
- Individual learners show a preference for the mode in which they receive information.
- Mental capacity is hereditary and cannot be changed by the environment or experience.
- Individuals learn better when they receive information in their preferred learning style (e.g., auditory, visual, kinesthetic).

### **LEARNING STYLES AND STRATEGIES FOR USE**

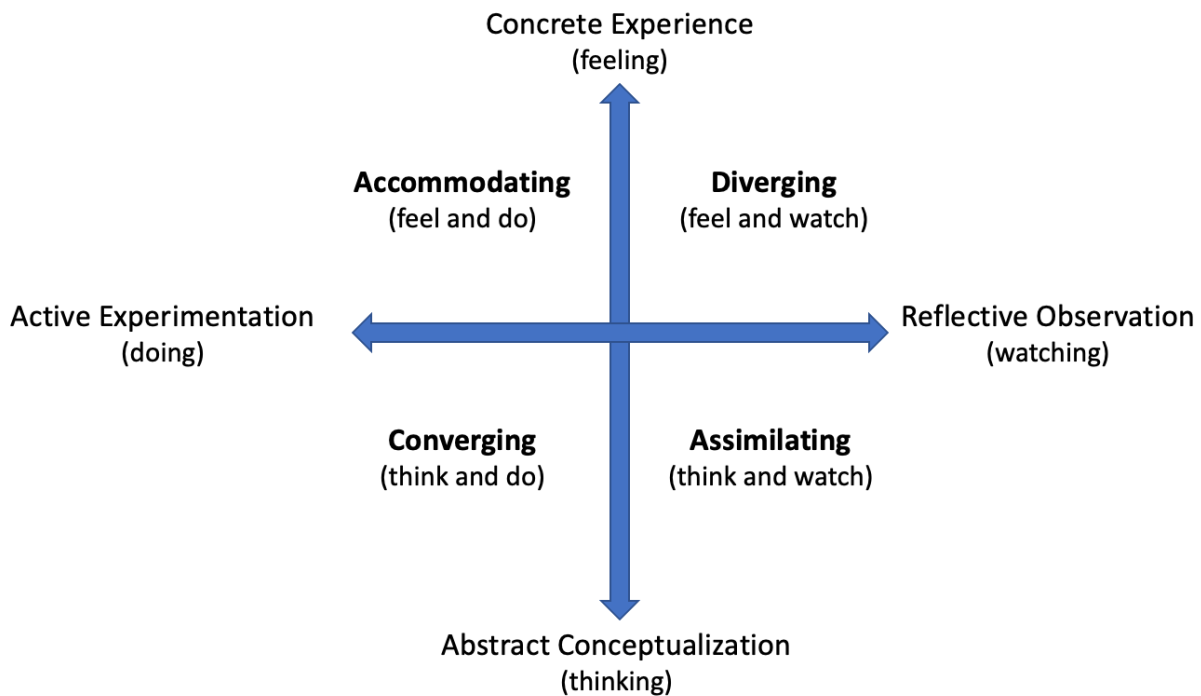
There are many learning styles (and associated inventories). The three most commonly used in the literature (KSI, Gregorc, and VARK) will be described briefly with strategies for how to use them to your advantage.

#### **KOLB LEARNING STYLE INVENTORY (KSI)**

The Kolb Learning Style Inventory is one of the most common, and frequently analyzed, ways to measure and describe learning style. There are two primary focus

areas within the KSI model – information perception and information processing. The perception continuum ranges from Concrete to Abstract. The processing continuum ranges from Active Experimentation to Reflective Observation. When integrated the Perception and Processing continuums present a matrix within which to situate learning style preferences. Within each quadrant of the matrix there are descriptors of general learning style preferences (Figure 1).

**FIGURE 1: KSI LEARNING STYLES**



Each of the four primary learning styles within the KSI model (diverging, assimilating, converging and accommodating) are described below with educational activities/strategies that appeal to the type of learner identified.

### DIVERGING

Convergence of Concrete Experience and Reflective Observation

Diverging individuals tend to focus on feeling and watching while learning. Individuals with the diverging learning style tend to have an ability to view situations from different perspectives, with a preference for watching how to solve a problem rather than doing something that uses their imagination.

Diverging learners appreciate:

- Classic lectures
- Hands-on activities for learners following instruction
- Brainstorming
- Labs
- Simulations
- Examples
- Self-expression
- Group work
- Sharing

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### ASSIMILATING

Convergence of Abstract Conceptualization and Reflective Observation

Assimilating individuals tend to focus on watching and thinking while learning. Individuals with the assimilating learning style tend to use a logical approach to learning something new with ideas being more important to them than people. They also have a need for explanations of new behaviors/practices over practical opportunities to engage with them directly.

Assimilating learners appreciate:

- Class lecture combined with video presentation
- Independent exercises which are completed individually
- Reading
- Analyzing data
- Journaling
- Discussion

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### CONVERGING

Convergence of Abstract Conceptualization and Active Experimentation

Converging individuals tend to focus on doing and thinking while learning. Individuals with the converging learning style tend to prefer technical tasks they can engage in

directly while learning. Engagement can be as an individual or in a group setting. They also prefer practical uses for theory and ideas.

Converging learners appreciate:

- Workbooks for learners to complete – structured with clear directions
- Interactive activities – practical and hands-on
- Building products
- Analogies
- Handouts to complete

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## ACCOMMODATING

Convergence of Concrete Experience and Active Experimentation

Accommodating individuals tend to focus on doing and thinking while learning. Individuals with the accommodating learning style tend to prefer practical approaches and rely on intuition when learning over logic.

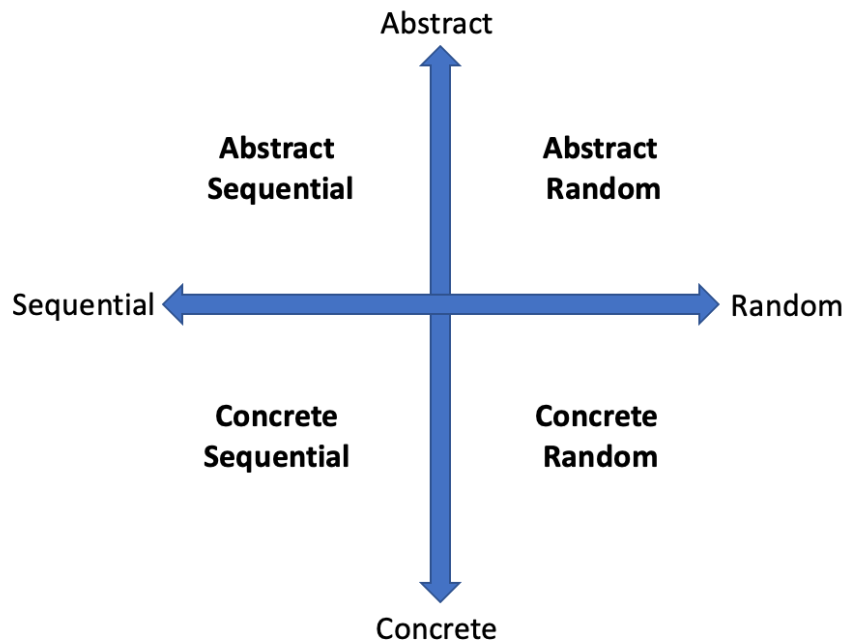
Accommodating learners appreciate:

- Independent discovery
- Active engagement, real world investigation
- Discussion and dialogue
- Case studies
- Projects – less structured
- Action oriented group activities

## GREGORC STYLE DELINEATOR

Another popular way to measure and describe learning styles is using the Gregorc Style Delineator. The Gregorc Style Delineator model uses two axes: **Perceptual**, or preference for receiving information ranging from *Abstract* to *Concrete*, and **Ordering**, or preference for ordering information ranging from *Random* to *Sequential*. This model also offers a matrix within which to situate learning style preferences. Within each quadrant of the matrix there are descriptors of general learning style preferences (Figure 2).

**FIGURE 2: GREGORC STYLE DELINEATOR**



Each of the four primary learning styles within the Gregorc Style Delineator model (concrete sequential, concrete random, abstract sequential, abstract random) are described below with educational activities/strategies that appeal to the type of learner identified.

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### CONCRETE SEQUENTIAL

Individuals with the concrete sequential learning style tend to prefer to learn by being introduced to new information using ordered, logical sequences of information. They also prefer step-by-step instructions.

Concrete sequential learners appreciate:

- Being able to follow directions
- When support is readily available

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### CONCRETE RANDOM

Individuals with the concrete random learning style tend to prefer to learn by experimenting and taking risks. They like using their intuition and engaging in activities that require creative thinking.

Concrete random learners appreciate:

- The use of trial-and-error approaches
- Competing with others as an individual
- Working independently

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### ABSTRACT SEQUENTIAL

Individuals with the abstract sequential learning style tend to prefer structure and well-organized information. They like opportunities that allow for the logical analysis of newly introduced ideas or concepts.

Abstract sequential learners appreciate:

- Access to experts and references
- Stimulating environments for the mind and body
- Independent work

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### ABSTRACT RANDOM

Individuals with the abstract random learning style tend to prefer using their imagination when learning. They like to build emotional connections with others so that they can think wholistically and develop interpersonal relationships that inspire change.

Abstract random learners appreciate:

- The use of broad or general guidelines
- Building friendly relationships
- Group activities
- Personalized learning experiences

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### VISUAL, AURAL, READ/WRITE, AND KINESTHETIC (VARK)

The Visual, Aural, Read/write, and Kinesthetic (VARK) learning preferences model is also one of the more common ways to classify and discuss learning style preferences. The VARK model introduces four types of learning preferences (visual, aural, read/write, and kinesthetic). The VARK model indicates that each learner prefers one type of learning over the other four.

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## VISUAL

Individuals with a visual learning preference like to see information depicted in graphics, figures, or symbols such as maps, charts, Venn diagrams, graphs, hierarchies, and so forth.

Visual learners prefer information depicted in graphics, figures, or symbols. They appreciate it when educators use:

- Sticky notes
- Graphs
- Whiteboard
- Pictures

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## AURAL

Individuals with an aural preference prefer information to be spoken or heard in discussions, lectures, speaking with others, and so forth. Even interactions such as email and chat may be more aural in nature as the interactions tend to emulate conversation, more so than formal written instructions.

Aural learners prefer information to be spoken or heard. They appreciate it when educators use:

- Lecture
- Discussions

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## READ/WRITE

Individuals with a read/write learning preference like information displayed in words. They prefer manuals, assignments, reports, and so forth.

Read/write learners prefer information displayed in words. They appreciate it when educators use:

- PowerPoint
- Charts
- Handouts

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## KINESTHETIC

Individuals with a kinesthetic preference like to experience information directly through demonstrations, practice, simulations, videos, and so forth.

Kinesthetic learners prefer to experience information directly. They appreciate it when educators use:

- Demonstrations
- Videos
- Lab environments

## MARKETING YOUR EDUCATIONAL PROGRAM

We tend to focus on **WHAT** we are teaching when introducing new information, such as a newly identified and proven sustainable agriculture best management practice. As a result, we develop and market our educational programs on the topic at hand. For example, our programs may highlight how to best utilize cover crops, how to integrate soil moisture sensors, or how to use the latest AI technology on farm to improve precision water application. While our prospective learners need to know *what* they will be learning about, marketing educational programs using this approach leaves it up to the potential learner's interpretation of *why* they need to learn this new skill, technique and/or technology. If an individual does not know why they need to adopt a new practice, they are unlikely to spend their time, energy, and finances to learn more about it.

Marketing your educational program by clearly stating **WHY** your information is important may assist with getting learners in the door and inspire them to engage and adopt your new practice/behavior. Simon Sinek identified the *why* as a concept fundamental to existence. We all need to feel purpose in everything we do. Meaning we need to know why we should show up, why we should listen and why it is important despite our learning styles.

## DEVELOPING A WHY STATEMENT FOR YOUR EDUCATIONAL PROGRAM

The best way to ensure we are focusing on the *why* of our educational program is to ask ourselves: What is the sustainable agriculture problem which potential learners are looking to solve by attending my program?



Sinek suggests phrasing our *why* statement in the format:

To \_\_\_\_\_, so that \_\_\_\_\_.

Using this format can help to provide some structure to the process. Some example statements using this format include:

1. To provide nursery greenhouse growers best management irrigation practices, so that they can be more profitable and environmentally sustainable.
2. To share calf creep feeding recommendations to beginning ranchers, so that they can make informed decisions about their operations and wean healthier calves.
3. To teach youth about sustainability, so that the next generation will be engaged in helping conserve and protect finite natural resources.

If you struggle with the “so that” section of the statement, here is a list of critical issues facing agricultural and related industries identified from the literature.

- Animal and human health/well-being improve
- Climate and environmental factors are managed and do not cause as much damage
- Consumers are more educated about agricultural and natural resource issues
- Current and future workforce are prepared to take on sustainability challenges
- Disease and pests are more properly managed
- Economic sustainability is achieved
- Government regulation and policy are informed
- Labor challenges are reduced
- Natural resource availability is improved
- Production and distribution are more efficient
- Production challenges are alleviated, and innovations are accepted
- Public understanding of production practices is improved
- Quality control is improved

These represent many of the emotional, intuitive, or underlying needs which might inspire someone to participate in a SARE training. This list is not comprehensive, hopefully though the audience identification process you will know the unique desires that will inspire your intended audience.

## DESIGNING EFFECTIVE PROMOTIONAL MATERIALS

People are bombarded with massive amounts of information every day, so our minds naturally filter up to 95% of all information presented. It does this to help us by ensuring we do not live in a constant state of being perpetually overwhelmed.

As educators that want to get our promotional materials through this filter, we must design our marketing efforts to engage potential participants quickly and effectively. First, we must meet our audience where they are. Consider who you are trying to reach. Are they actively engaged on social media? Do they read certain print materials? Can you access them through e-mail? Either way, designing an effective flyer that can be printed or shared through e-mail/online sites is important.

Fundamental design elements to include in your promotional piece are showcased in an example flyer below. They should include:

- **A compelling headline or attention grabber.** This should reflect the *why* you identified previously. What problem will your educational program solve for learners?
- **Preview of content.** A brief overview of some of the content which will be covered. Leaving some content off the list will promote intrigue.
- **Expertise.** Testimonials or other credentials to establish expertise.
- **Branding.** If the program is affiliated with a university or other organization be sure to include appropriate brand images.
- **Next steps.** Your materials should allow someone to act right away. There is a very strong trend towards online registration and communication. Add contact information but also consider adding a link to an online registration system. For example, a QR code which takes individuals to the program registration page directly on their phones helps eliminate many of the logistical steps associated with registration. Your goal is to make the process as easy as possible.
- **Graphic design.** It is not necessary to be a graphic design expert to create professional promotional materials. Using basic graphic design strategies will help to improve the appeal. Specific suggestions include:
  - Use high quality images – avoid blurry, or pixilated images.

- Use white space – sometimes less is more, a general rule would be to have at least 50% of the page/screen without content – this will help to focus attention.
- Think about the medium – will your materials be printed, online, both? There are some colors and themes which look great online, but do not translate when printed. Use colors and patterns which will work based on your final output.
- Use templates and tools – there are many online tools available to help you design visually appealing flyers and promotional materials. For example, Canva provides many templates and graphical user interface tools to make designing materials efficient. This is just an example, as there are many other products and tools available.



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## KNOWING YOUR AUDIENCE

One of the most important considerations when it comes to developing educational programs is to know your target audience. It is easy to focus on our interests and needs as educators and to only think of participants and learners as recipients of knowledge. However, this perspective does not reflect reality where learners can choose what type of programming for which they participate.

There are many ways to consider thinking about your potential audience. For example, a common approach would be to simply examine who typically participates in similar programs. Are there general characteristics or needs which you can easily identify? Unfortunately, this approach has the potential downside of accidentally omitting or not considering those that may not already be participating because the programming does not suit their needs and preferred learning styles.

There are many ways in which educational programming can be intentionally structured to be as inclusive of diverse learning styles as possible. One way to do this is to segment your audience based on specific demographic characteristics. Audiences with different characteristics will have different needs and therefore should be considered and accommodated accordingly. Use these suggestions as a starting point. Then make your own observations and adjust the recommendations based on the specific needs of your target audience(s).

Many of the audience segments included below are based on demographic categories from the United States Census. The use of these specific audience segments may or may not be applicable to your specific educational program. Please ensure you are adjusting your approach based on the needs and segments appropriate for your educational program.

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### SEX/GENDER AND LEARNING STYLE PREFERENCE

Current scientific evidence has indicated there is very limited evidence indicating there are differences between individuals as it relates to learning style preference and sex/gender. However, the idea different sexes have different learning style preferences continues to be explored; therefore, the following suggestions are provided:

1. **Participation.** While designing educational programming consider the representation of different sexes participating.

*Recommendation:* If it is likely there will be a large majority of male participants and a smaller representation of female participants, it is important to ensure all audience members are able to fully participate in the program. Such as, if there is a hands-on component ensuring equal access to all participants to engage in the activity is recommended.

2. **Perceived barriers to participation.** Acknowledging there are no barriers to participation may assist in ensuring diverse learners engage.

*Recommendation:* integrating content into the educational program which specifically states that there are no reasons for any participants to not be able to fully participate may help to address and mitigate potential social norming.

3. **Pronouns.** Additionally, educators should be aware of tendencies to use pronouns which may or may not be applicable to all program participants.

*Recommendation:* recognizing there may be individuals which do not identify as either male or female is important to acknowledge and respect.

4. **Women producers.** Research has identified women producers face unique challenges.

*Recommendation:* Consider taking a more empathetic approach with educators actively projecting an approachable demeanor when working with women producers. Additionally, women producers may benefit from connecting with leadership mentors, envisioning themselves in leadership roles, and interacting and supporting one another.

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## AGE AND LEARNING STYLE PREFERENCE

The age of your potential participants should also be considered when promoting and developing your educational programs. For four decades the average age of agricultural producers has been increasing. In 2017, the USDA shared the average age of a producer was 58 compared to 50 in the 1978 census. The USDA also shared the average age of

beginning agricultural producers in 2017 was 46. They made up 27% of the country's 3.4 million producers.

1. **Audience segments based on age range.** There are not specific guidelines to inform how to break agricultural producers into distinct age groups. However, generational breakdowns can assist as those that have grown up as digital natives (Millennials and Gen Z) are more comfortable with, and expect the use of, technology when learning while those from the Baby Boomer and X Generation may not be as confident using and/or comfortable with training that requires the use of new technologies.

*Recommendation:* Ensure your programs are relevant to the age of your learners recognizing the average age of both traditional and beginning farmers lands on the extreme ends of Generation X.

Baby Boomers – Born during or before 1964 (59+ in 2023)

Generation X – Born from 1965 – 1980 (42 – 58 in 2023)

Millennial Generation – Born from 1981 – 1996 (27 – 41 in 2023)

Gen Z – Born from 1997 – 2012 (10 – 26 in 2023)

Generation Alpha – Born from 2013 – 2024 (0 – 9 in 2023)

2. **Motivating factors.** Throughout one's career there are trends regarding what motivates us based on our life circumstances. These motivations typically fall into two categories: 1) intrinsic or internal reasons versus 2) extrinsic or external reasons.

*Recommendation:* Program participants that fall into different age groups may have different things that motivate them which should inform your educational content. The following are general recommendations based on proposed age groupings:

*Youth* – Individuals under 18 years of age are typically extrinsically motivated because they desire education that will allow them to showcase their skills.

Members of the *Gen Z and Millennial Generation* are establishing themselves in their careers, so they are still motivated by proving their value. Therefore, they are extrinsically motivated to learn so they can showcase new skills or ideas that set them apart from their peers. They are also intrinsically motivated because

they feel social obligation and now desire meaning in their work beyond proving themselves worthy.

*Older Millennials and Members of Gen X* are extrinsically motivated because they want to avoid the perception that they are incompetent. They want to maintain what they have and desire a sense of security. They are also starting to develop a need for establishment so are also intrinsically motivated to learn and adapt so they can start to establish their own legacy.

*Baby Boomers* are intrinsically motivated to learn for a diverse set of reasons. They may want to leave a legacy. They are interested in novelty and finding meaning in the last years of their work. They are also wanting to find ways to remain active and engaged. Some may also be extrinsically motivated for security reasons.

3. **Delivery methods.** Generally, it is not advisable to be overly dependent on generational/age differences when selecting the method of delivery for your educational program. In general, younger participants may be more comfortable using technology while older participants may prefer hands-on educational programming.

*Recommendation:* Provide a variety of options that allow learners to choose the delivery method they prefer. The delivery method selected should be informed by your intended outcome and the resources you have available.

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## UNDERREPRESENTED GROUPS AND LEARNING STYLE PREFERENCE

One of the primary audiences which needs to be considered when developing educational programs are underrepresented groups. The role culture and trust play in reaching URGs is of paramount importance when developing educational programs. Therefore, it is critical for educators to purposively develop programs which acknowledge and accommodate the needs of their specific audiences. Despite being grounded in research findings, the following recommendations should be used as a guideline only. These suggestions should be adapted to the specific needs and desires of each unique group and individual you intend to work with.

1. **Recognize all groups and individuals are unique.**



*Recommendation:* Each group or individual you want to work with will have differentiated needs, norms, protocols, cultures, levels of hierarchy, potential gatekeepers, and opinion leaders. As educators, it is important to ensure each potential audience is considered individually.

2. **Obtain permission and support.** One of the unique characteristics of many underrepresented groups is the need for permission and support when accessing and engaging with the group. For example, many groups will identify, either formally or informally, individuals to serve as gatekeepers and opinion leaders within their community. These individuals are critical partners that can enable and/or serve as a barrier to group participation.

*Recommendation:* Prior to developing any type of educational program intended for unique or otherwise underrepresented audiences, it is recommended to engage with leaders, opinion leaders, or gatekeepers who represent the needs and expectations for the group. Obtaining their support, ideally through a letter of support for your project prior to implementation, is critical to the subsequent success of your program.

3. **Cultural awareness.** One of the primary mechanisms for engaging with underrepresented audiences is to develop and cultivate a proactive orientation towards cultural awareness.

*Recommendation:* There are a wide variety of tools and techniques available to assist with developing cultural awareness, cultural understanding, cultural knowledge, cultural interaction, and cultural sensitivity. Primary themes include:

- Increasing awareness of personal and organizational cultures
- Enhancing ability to examine how personal and organizational cultures affect work
- Developing skills to increase competencies when working with others who are different

*Recommendations for training design:* In addition to those above, Hofstede offers tips on specific things to be aware of when designing educational trainings for unique audiences.

- Consider power distance. The educator/learner relationship may be based in culture that is specific to the group you are trying to reach. Learn what it is and adhere to what is culturally expected.
  - Perceptions of incompetence should be avoided. Know your audience, their context, what is important to them and what to avoid in your educational program. For example, using language you are not familiar with incorrectly during an educational program could immediately discredit you rather than showcase your willingness to incorporate their local dialect as intended.
  - Identify whether the group you are working with uses an individualistic or collectivist approach to life and learning. Ensure your programming is applicable to their societal perspective with a focus on group or individual work.
  - Recognize social roles within the community. Men and/or women will showcase masculinity/femininity in different ways depending upon the societal structure. Recognize and respect the social roles and societal structure within your educational programming.
  - Determine what the group considers a typical unit of time. Consider how they approach farming practices - whether they are short-term (in months or years) or long-term (in generations) – and plan your educational program accordingly.
4. **Recommendations for working with specific populations.** Each group and individual are unique; however, there are examples in the literature where previous experiences have been documented and summarized. The following are summaries of their recommendations:

#### **Tribal college programming**

- Humanist approach to learning.
- Value interdependence among students and teachers. They want students to inform the educational process.
- Instructor should reflect social order (e.g., learning from respected elders).
- Tribal values should inform the development of a culturally relevant learning environment.
- Specific educational strategies successfully employed include:
  - experiential learning,

- storytelling, tutoring,
- rituals and ceremonies,
- observation, and
- open conversations between teachers and learners.

### **Extension Native American programming.**

- Specific educational strategies successfully employed include:
  - listening to gather information,
  - learning by creating opportunities for professional development,
  - spending time building trusting relationships, and
  - encouraging mutually beneficial exchanges of knowledge and resources.

### **Pacific island-based programming.**

- Recognize the complex arrangements of space, culture, and perceptions in the Pacific.
- Examine the space for teaching and learning.
- Establish processes for self-identification and interaction between self-concept and history in a dynamic environment (Native Hawaiian, non-native Hawaiian, and so forth).

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## EDUCATION LEVEL AND LEARNING STYLE PREFERENCE

Many educational programs developed by university faculty and intended for agricultural producers may be developed at an education level inappropriate to the audience. Ensuring the content is appropriate for the education level of the audience is important to ensure the program will be effective.

1. **Keep it simple.** The ability to simply and clearly explain material is a sign of mastery and should be a guiding principle when developing educational programs.

*Recommendation:* When developing educational materials, regardless of the audience, try to:

- Keep jargon to a minimum

- Use visuals, when possible, and provide supporting text as supplements
- Focus on main points, not on minutia
- Clearly state educational program objectives before, during, and after the program

2. **Use technology to support educational programs, not as the reason for the program.** The novelty of new technologies and instructional design platforms can be exciting. However, the goal of educational programming is to address the needs of your audience.

*Recommendation:* When developing your educational program consider the technological expertise and comfort level of your audience. In general, specialized technology should be appropriate to the audience. For example, previous research has shown using wireless clickers was viewed as user-friendly and improved learner engagement and peer-to-peer instruction benefits among farmers, agricultural students, and master gardeners. Technology should help enable instruction, not be a distraction.

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## PHYSICAL LOCATION AND LEARNING STYLE PREFERENCE

One of the audience characteristics which should be considered when developing educational programs is the physical location of potential participants. Specifically, the infrastructure available in rural areas, especially those remotely located (e.g., islands, parts of Alaska), is different than that found in urban/suburban areas and should be planned for accordingly.

1. **Internet access.** There have been significant improvements in broadband Internet access across the United States, however, there are still large portions of the Western U.S. that do not have regular Internet access.

*Recommendation:* Depending upon your identified audience, it is important to develop educational materials which will work across a variety of conditions. For example, many videos require a high amount of bandwidth in order to function without latency and would not be available to those with limited, dial-up, or unsteady Internet access. On the contrary, static content and optimized graphic images can load more efficiently across various bandwidth conditions if they are

available. Always have an offline version of the educational materials available when working with audiences that may have limited Internet capabilities. Based on the needs of your specific audience you should plan to create and maintain materials as appropriate.

2. **Local infrastructure.** One of the more frequent barriers to producer adoption of sustainable agriculture best management practices, particularly of innovations developed in university environments, is that the infrastructure available on farm is not practical when attempting to implement the new changes.

*Recommendation:* Consider incompatibility issues that may exist in local environments when developing your educational programs. Be sure you can provide examples of alternative conditions for success. For example, if new irrigation technology requires broadband Internet access to successfully monitor, it may be appropriate to demonstrate how the use of low bandwidth cellular networks can also work with the technology. Thinking through the potential limitations a participant may face, and proactively addressing their concerns is important to improving the effectiveness of your educational program.

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## REGIONAL DIFFERENCES AND LEARNING STYLE PREFERENCES

Research has indicated some differences in social norms may exist based on geographic region within the United States, but they are limited and differences in learning style preferences have not been found. Since the toolkit is focused primarily on the western region of the United States the provided recommendations can be used as preliminary guidelines.

1. **Diversity within the western region.** Regional differences are rooted in historical and social change. Due to its diversity, there is no single cultural or social norm that exists within the Western-SARE region but rather a diversity. For example, the culture of the southwest (southern parts of Arizona, New Mexico, and California) are influenced by the Spanish which originally settled the area. The culture associated with coastal portions of California, Oregon, and Washington also exhibit a unique culture when compared to the more inland areas of the Western region. Furthermore, Alaska, Hawaii, and the Pacific Island

areas all also have unique cultures based on the native populations as well as historical settlements.

*Recommendation:* Recognize and value the unique culture and heritage when developing educational programs. Taking the time to understand the norms, social customs, expectations, and language used within a specific area of the Western region is important to ensure the educational material is relevant and meaningful.

*Recommendation:* Within the Western region of the United States educational materials and approaches should be adapted to the local context. For example, expectations associated with the demonstration of technologies used on farm may be very different in Northern Colorado and the Central Coast of California. Educational programs should be developed to align with the local needs, contexts, and expectations of program participants whenever possible.

2. **Acknowledge your positionality in the region.** It may be appropriate and helpful to acknowledge your positionality within the region and your association with the program audience depending on your background.

*Recommendation:* Acknowledging whether you are from the local area or not can help to establish trust and integrity between educators and program participants. For example, sharing that you, as an educator, are not from the same geographic region as the program participants, may help to pre-emptively mitigate the potential to be dismissed as not locally relevant amongst program participants. Instead of trying to overreach and appear to be a local expert it is advisable to instead recognize how, and where, your suggestions and programming material may need to be adapted to local conditions.

## BUILDING TRUST

One of the unique things about adult learners (when compared to youth) is that they get to choose if they want to participate in a learning experience. The amount of trust an agricultural producer has in the individual delivering the information is one of the biggest things they consider when choosing to participate. Based on the wide range of individuals and organizations offering educational programs (universities, nonprofits, for profit enterprise) it is likely agricultural producers who have been in the industry for an extended period have had positive and negative experiences.

When developing educational programs, it is our responsibility to develop and cultivate trust with our potential program participants. This includes actively managing the nature of the relationship and to continuously reinforce trust and trustworthiness through actions and efforts. Generally, most individuals will approach new interactions with a preference towards trusting. However, once trust has been broken, it is very difficult, if not impossible, to repair. This dynamic is important to remember as it relates to working with groups which may have had previous negative experiences.

Nevertheless, there are several actions we can focus on to ensure we are actively developing trust with those we are hoping to serve through our educational programs that should be kept at the forefront in all our educational interactions:

- **Clarity.** Transparency builds trust, opaqueness builds mistrust.
- **Compassion.** There must be evidence that your motives are not just self-serving.
- **Character.** Walking the talk.
- **Competency.** You must establish your expertise to cultivate trust.
- **Commitment.** Showing up through adversity.
- **Connection.** Authentic relationships are mutually beneficial.
- **Contribution.** Providing value for others.
- **Consistency.** Adapting but not overreacting, staying the course.

## ADDITIONAL LEARNING STRATEGY CONSIDERATIONS

In general, adult learners need to:

- know **why** the training is important.
- have their **self-concept** acknowledged.
- have their **previous experiences** recognized.
- be ready to learn, oriented to the learning environment, and **motivated**.

Learning style preferences themselves are potentially less important than ensuring the content of your educational programs are of high quality, tailored to the needs of your audience, and developed with your specific audience in mind.

## USE MULTIPLE LEARNING STRATEGIES

If presenting information on a new piece of technology, an educational program should include:

1. A verbal description of the new technology
2. A written description of the new technology on a PowerPoint slide
3. A figure representing the key benefits of the new technology in graphical format (e.g., increased efficiency or economic benefit)
4. A video of the new technology in operation

By using all four, you will reach all types of learners!

#### ADVICE FOR ONLINE EDUCATIONAL PROGRAMMING

**Interactivity.** When possible, develop online programming to mimic many of the same learning strategies which may be used in-person. For example, don't focus on written content. Include visual representations, videos, discussion boards, and other types of interactivities.

**Clarity.** Depending on whether an online program is synchronous or asynchronous there may or may not be opportunities for learners to ask questions or get clarification on items. Spend extra time covering concepts which are most important.

**Timing.** Online environments will typically encounter more technical challenges than in-person programs. Be sure to plan for extra time to address and resolve such challenges with developing your program.

#### GUIDELINES FOR THE USE OF SPECIFIC TEACHING STRATEGIES

**Lectures** should only be 15 to 20 minutes with active learning activities incorporated in between. They are good for providing current information, summarizing, and adapting information to the needs of your participants.

**Problem based learning** is useful for developing critical thinking and problem-solving skills.

**Case studies** are useful for analysis, critique, making judgements, bringing real world problems to the training.

**Educational games** can stimulate competition or achievement.

**Role play** can help learners experience feelings and practice skills in real time.

**Discussion** promotes active engagement, critical thinking.



## EDUCATING FARMERS

Farmers and ranchers are unique in the type of the work they do and the way they do it. John F. Kennedy famously said, “The farmer is the only man in our economy who buys everything at retail, sells everything at wholesale, and pays the freight both ways.”

Educators must acknowledge the nuance and context of working with farmers and ranchers when developing educational programming. The following are specific things to acknowledge and recommendations for educational practice:

**There are no clear learning style preferences within farmers and ranchers, specifically.**

*Recommendation:* Develop a range of educational activities and strategies to engage a range of learner profiles when working with farmers and ranchers

**Focus on experience.** Many farmers and ranchers have prior knowledge and experiences which can be valuable to engage during the educational process.

*Recommendation:* Do not try to education someone on that which they have been doing for several decades and probably have generations worth of knowledge. Determine the needs of your audience and recognize their background and experience.

**Many farmers and ranchers have off the farm jobs.** Many farmers and ranchers have professional roles outside of the farm in an industry that is constantly evolving and changing.

*Recommendation:* Acknowledge that constant change can cause stress and emphasize how educational programming may be able to help them both on and off the farm.

**Farmers and ranchers must solve complex problems every day.** Sometimes the information and innovations coming from the university are viewed as non-transferrable to the practical realities on the farm. Farmers think in systems and always consider what they currently have, what they are able to put in and what they need to get out of any new idea or technology. New technologies may not align with growing conditions, inputs, maintenance, etc. and, therefore, may not be practical.

*Recommendation:* Acknowledge the differences between environments and identify how the new approach might be adjusted to work in their situation. Also be open to feedback and consider their concerns when conducting research in the future.

**Time horizons and long-term goals.** Farmers and ranchers often exhibit a desire to maintain farming and ranching livelihoods and cultures for generations.

*Recommendation:* New ideas and technology adoption must align with the slow pace of ecological change and all changes in plant species and livestock performance being introduced must be financially viable to ensure long-term sustainability.

**Farmers and ranchers must be flexible.** Farmers and ranchers work in an ever-changing environment that is evolving and adapting based on external pressures (political, environmental, social change). They need to respond to local and market conditions

*Recommendation:* When educating farmers and ranchers you must value their local field-level knowledge and expertise. This also makes them primed for adaptive learning so incorporating a systems approach to your programs will keep them interested and engaged.

## MEASURING SUCCESS

To ensure a variety of learning styles are accommodated in educational programs the following evaluation statements can be used independently or with other content-focused evaluation questions to measure how well you are reaching all types of learners.

## EVALUATION STATEMENTS

Please indicate which of the following activities you were exposed to during this educational program by checking all that apply:

- Hear about the new technology/best management practice being introduced
- Read about the new technology/best management practice being introduced
- See the information and/or its impacts in new and unique ways (e.g., graphs, charts, other visual images).
- Interact with the information being presented (e.g., participate in a simulation, case study or hands on activities)
- Interact with other program participants through group work, discussions and/or sharing

Please indicate which of the following you experienced during the educational program by checking all that apply:

- I felt supported
- I could easily follow directions
- I was provided an opportunity to work independently
- I was provided an opportunity to work with others
- I felt the learning experience was personalized to my needs

## ANALYZING RESULTS

Analyze the results once you have feedback from the two statements listed above by giving yourself a point for each box checked. You should have a value between zero and 10. A zero indicates you did not use any learning strategies and a score of 10 indicates you reached all types of learners. The more boxes that are checked, the more your program is reaching your diverse audiences.