

# Integrating Critical Thinking into Extension Programming #2: Developing Critical Thinking Skills<sup>1</sup>

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## Introduction

Critical thinking is broadly recognized as an important skill to master, and one that has the potential to lead to an individual's success (Lamm et al., 2011). As such, Extension professionals are encouraged to engage clientele in experiences that not only teach subject matter but also develop critical thinking skills. This EDIS document is the second in a series on integrating critical thinking into Extension programming, and examines the virtues of critical thinking to offer suggestions for integrating activities that encourage critical thinking into Extension programming. The entire series includes the following EDIS documents:

1. *Critical Thinking Defined* (<http://www.edis.ifas.ufl.edu/wc206>)
2. *Developing Critical Thinking Skills* (<http://www.edis.ifas.ufl.edu/wc207>)
3. *Critical Thinking Style* (<http://www.edis.ifas.ufl.edu/wc208>)
4. *Measuring Critical Thinking Styles Using the UFCTI* (<http://www.edis.ifas.ufl.edu/wc209>)
5. *Using Critical Thinking Styles to Enhance Team Work* (<http://www.edis.ifas.ufl.edu/wc210>)

## The Virtues of Critical Thinking

The American Philosophical Association (1990) brought together a group of experts in the form of a Delphi panel to come up with a set of intellectual virtues or habits that reflect a disposition toward thinking critically. This group believed that by developing an ability to engage in this set of virtues while thinking, ideal critical thinkers could be created. Each virtue is discussed below along with ideas about how to incorporate the development of the virtue in an Extension program. It is important to recognize that it would be difficult to integrate all 15 virtues into a single program or activity, but rather to keep them all in mind when developing educational experiences so that participants gain critical thinking skills over time.

**Habitually inquisitive**—This virtue suggests that an ideal critical thinker makes a habit out of being inquisitive. To form habits, a participant must be engaged in environments where being inquisitive is encouraged and rewarded. For example, presenting information in a lecture-style PowerPoint where the learner sits and listens while the presenter provides information does not encourage one to be inquisitive. Rather, offering hands-on activities where learners are required to seek out information or find the answers to a problem from among several options encourages the learner to be inquisitive.

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**Well-informed**—An ideal critical thinker has the information they need to think deeply about a problem. To encourage learners to be well informed, Extension professionals can offer opportunities for deep learning. This may include offering additional resources through reading materials, websites, videos, or other formats in which a learner can become well informed.

**Trustful of reason**—An individual must not only be able to use logic to reason through a problem, but must trust that they have the ability to do it correctly and believe the answer they come up with is the correct one. Building confidence is not an easy task, but Extension professionals can offer opportunities where learners have to come up with solutions to a problem and then present not only the solution they arrived at but also how they came up with the solution. By presenting their process along with their solution, the learner has an opportunity to commit to their reasoning and begin to trust their own process.

**Open-minded**—While a learner must trust their own reasoning, they should also be open to other possibilities. Answers to complex problems are rarely black and white, and we must be open to the grey area in between, where solutions that work typically exist. Using problems in educational experiences that do not have concrete answers offer participants the opportunity to come up with their own solutions that may or may not agree with the responses of other participants. Discussing these openly and freely without judgment can assist in allowing participants an opportunity to be open-minded about possibilities they may not have considered on their own.

**Flexible**—Extension professionals have numerous opportunities to allow participants to practice being flexible. Group activities where leaders take turns making decisions, or providing opportunities where members of groups have to come to consensus on a contentious topic, are great ways to encourage flexibility while building rapport and learning to work in teams.

**Fair-minded in evaluation**—An ideal critical thinker is educated about a topic and trusts their own reasoning but is also fair-minded in their evaluation. To encourage participants of Extension programs to be fair-minded in evaluation means they need to see all sides of a discussion before making a decision. Simply encouraging participants in a program to engage in defining the pros and cons of a solution prior to choosing a path to follow can encourage them to be fair minded in their evaluation of a solution.

**Honest in facing personal biases**—Everyone comes to the table with predisposed notions and thinks about an issue from their own perspective; this is human nature. An ideal critical thinker recognizes their own personal biases and is honest about them with others when discussing a problem and its potential solutions. By engaging participants in conversations about what drives their choices, Extension professionals can encourage participants to be honest about their personal biases.

**Prudent in making judgments**—Thinking about the impacts a decision can have on the future is an important part of being an ideal critical thinker. Encouraging participants of an Extension program to consider the long-term ramifications of a decision when making choices can encourage engagement in being prudent when making judgments.

**Willing to reconsider**—An ideal critical thinker needs to be willing to reconsider the choice they have made as additional information is collected. Just because a decision made sense at the time and they trusted their instincts does not mean the result will always be what is expected. Extension professionals should consider integrating simulation activities where participants are required to think about an issue, make an educated choice, and then have to deal with the negative consequences of that decision. Participants should then be offered the opportunity to correct their decision by being provided with an opportunity to reconsider and see how being open to new information can result in a positive response.

**Clear about issues**—Being well informed and clear are two separate concepts. Sometimes too much information can “muddy” the waters by creating analysis paralysis. An ideal critical thinker can easily see through all of the data they are presented with and clearly see what the issue is, so they can reach a solution that can be implemented. Extension professionals can encourage participants of their programs to clearly identify an issue before jumping into developing solutions. The simple action of making someone clearly describe an issue in a sentence or two can assist in clarifying the underlying issue they are addressing.

**Orderly in complex matters**—Many issues are extremely complex and require steps be followed to clearly identify the issue, determine solutions, come up with pros and cons that should be considered, and then select the best solution. In addition, after implementation a critical thinker will review their choice and reflect upon whether or not it should be reconsidered based on new information gathered. An ideal critical thinker will be able to organize this process to ensure they are approaching a problem from the best

angle possible. Extension professionals can assist learners in engaging in orderly processing by offering checklists that encourage order in their decision-making.

**Diligent in seeking relevant information**—An ideal critical thinker will be diligent in seeking relevant information and will not skip over ideas in order to make a decision. Extension professionals can encourage this diligence by making resources available and encouraging participants to engage in their own information-seeking before, during, and after a program. Engaging participants in pre-work can assist in showing learners how to seek information on their own.

**Reasonable in the selection of criteria**—Again, too much information can create a sense of analysis paralysis where a learner will not engage because the process of learning becomes overwhelming. Extension professionals should offer their participants opportunities to discuss the selection criteria they use when choosing which resources to use and which to ignore. The web offers so much information that it can become overwhelming. By teaching learners which resources are valuable and which sources can be trusted, Extension professionals can assist learners in being more reasonable in their selection of materials.

**Focused in inquiry**—An ideal critical thinker is focused when looking for a solution to a problem. They rarely get distracted from solving the problem in front of them and stay on task until a solution is reached. Extension professionals should offer learning opportunities that include distractions that can show learners first-hand just how easy it is to become distracted and then emphasize the importance of staying focused when making decisions.

**Persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit**—Solutions to complex issues are often reached that are broad and ambiguous. This can happen for a variety of reasons. Perhaps the only way to reach consensus within a group was to water down the resulting ideas to something everyone could agree upon, or the individual is unaware of how to properly implement an idea and therefore leaves it broad. An ideal critical thinker will be persistent and push for a result that is precise and allowable based on the circumstances. Extension professionals should encourage participants to be precise in their suggestions and encourage persistence in coming up with implementable solutions.

## Conclusions

The virtues of critical thinking can be integrated into existing Extension programs with effort placed on developing activities that engage learners in a specific way. By understanding what the virtues are and keeping them in mind when creating educational experiences, Extension professionals have the opportunity to teach critical thinking skills while transferring subject matter knowledge.

## References

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