

TEACHING UNDERGRADUATE AND GRADUATE STUDENTS TO THINK LIKE FAMILY SCIENTISTS: FOSTERING CRITICAL THINKING AND SCIENTIFIC REASONING

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Interactive Workshop Overview

1. Brief overview of Critical Thinking Skills
2. Preview a beginning list of Family Science-specific thinking skills
3. Discuss Family Science-specific thinking skills
What's missing? What doesn't fit? What's most important?
4. Brainstorm instructional and assessment methods for each skill for different types of courses— introductory, substantive, applied, graduate substantive.



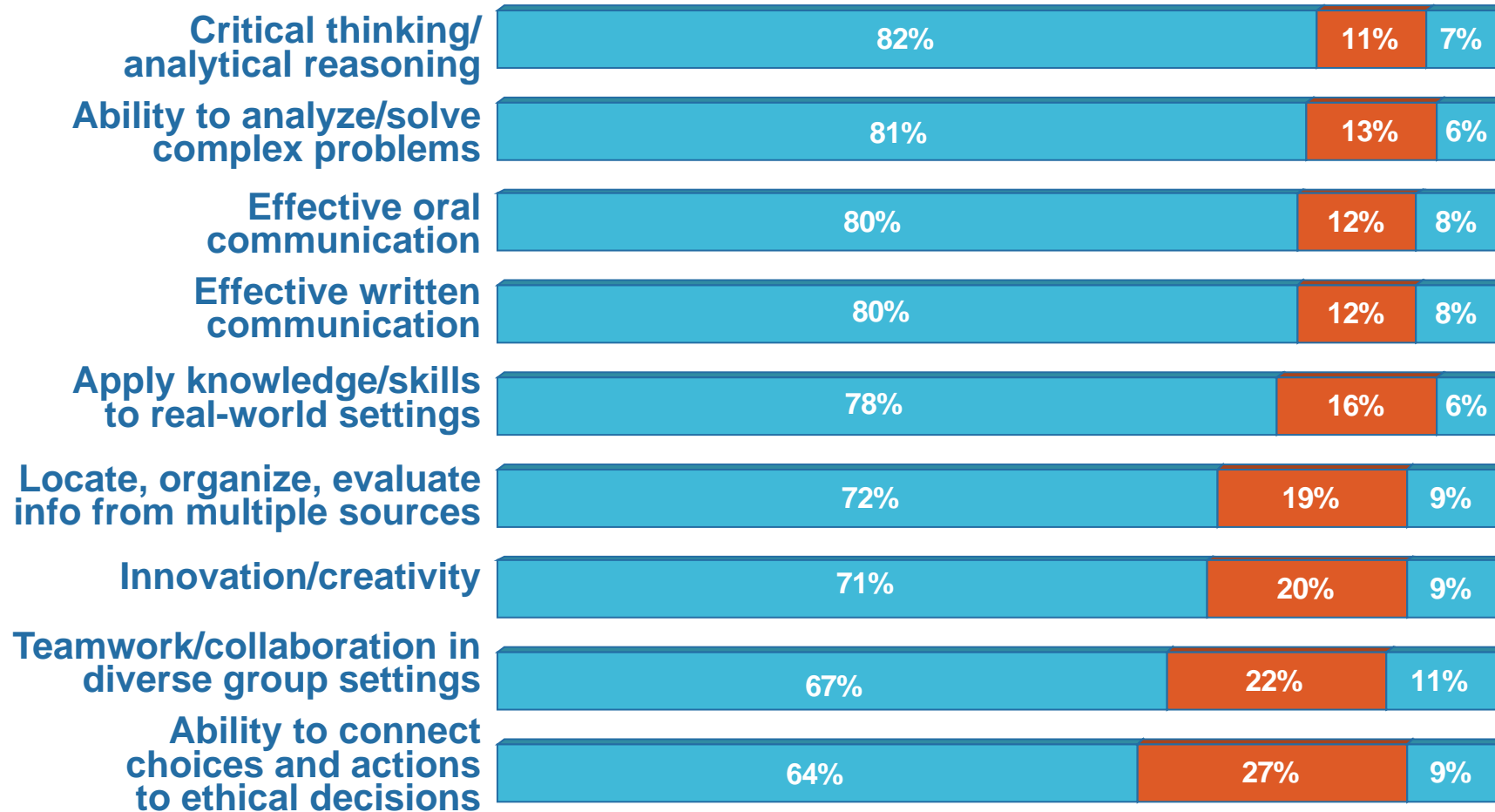
Faculty View of Goals for Family Science Students

“I want my students to be able to solve problems that families experience and to discover and apply scientific knowledge to these challenges in labs, classrooms, and clinical settings.”



Majorities of employers want colleges to place more emphasis on selected outcomes.

More emphasis than they do today The same emphasis Less emphasis



A majority of employers agree that both specific knowledge and a broad range of skills are necessary for advancement and long-term career success.

Which is more important for recent college graduates who want to pursue advancement and long-term career success at your company?

Having both field-specific knowledge and skills AND a broad range of skills and knowledge



Having a range of skills and knowledge that apply to a range of fields or positions



Having knowledge and skills that apply to a specific field or position



What is critical thinking?

“Critical thinking is the use of those cognitive skills or strategies that increase the probability of a desirable outcome. It is used to describe thinking that is **purposeful, reasoned, and goal directed**– the kind of thinking involved in **solving problems, formulating inferences, calculating likelihoods, and making decisions**, when the thinker is using skills that are thoughtful and effective for the particular context and type of thinking task.”

Diane Halpern, 2013, p. 8.



What is critical thinking?

Attitude + Knowledge + Thinking Skills = Critical Thinking

Bertrand Russell, 1960
as cited by D. Halpern, 2013.



Why teach critical thinking in family science courses?

To develop a scientific attitude in thinking about relationships and families.

To develop specific theoretical and substantive knowledge about relationships and families.

To learn and practice problem solving skills applied to relationship and family issues in labs, classrooms and clinical settings.



Beginning List of Family Science Thinking Skills

1. is open-minded about relationships & families;
2. seeks a scientific approach to understanding relationships & families;
3. desires to be, and is, well informed about relationships & families;
4. judges well the credibility of sources about relationships & families;
5. understands the complexity of relationships & families from a systems perspective that includes contexts;
6. identifies reasons, assumptions, evidence, and conclusions;
7. asks appropriate clarifying questions, especially about evidence;
8. judges well the quality of an argument, including its reasons, assumptions, and evidence, and their degree of support for the conclusion;



Beginning List of Family Science Thinking Skills con't

9. can well develop and defend a reasonable position regarding a belief or an action, doing justice to challenges;
10. defines terms in a way appropriate for the context;
11. formulates plausible hypotheses;
12. understands methods for testing hypotheses;
13. uses quantitative and qualitative data collection & analysis skills in developing evidence;
14. draws conclusions when warranted—but with caution;
15. can apply solutions to real relationship & family problems – with caution.
16. integrates all the above aspects of family science thinking.
17. is willing and able to challenge long-standing assumptions about relationships and families;
18. recognizes one's own biases in their understanding of relationships and families.



Discussion Questions

What would you add to this list of family science thinking skills?

Are there skills you would not include?

What skills on this list would you modify or clarify?

What are the most important skills on the list?



Family Science Thinking Skills Across the Curriculum: Instructional & Assessment Strategies

Thinking Skill	Types of Courses			
	Introductory	Substantive	Applied	Graduate Substantive
is open-minded about relationships & families;				
seeks a scientific approach to understanding relationships & families;				
desires to be, and is, well informed about relationships & families;				

