

The Critical Science Approach to Reasoning for Action in Consumer Education

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Reasoning for action is an overarching standard in the national standards for Family and Consumer Sciences at the middle and high school levels (Fox & Laster, 2000; National Association of State Administrators for Family and Consumer Sciences [NASAFACS], 1998). Reasoned action is important to resolving consumer problems and concerns. Within consumer education, problem solving often is taught as a step-by-step decision making process. However, there are many different forms of problems ranging from more concrete problems (such as comparison of products or services), to complex ethical and value-related dilemmas (for example, what should be done about unfair labor practices and clothing production?). Not all problems, however, are best resolved using the standard decision-making process.

An alternative problem solving approach is the practical reasoning process. *Practical* means determining what to do with regard to a problem; *reasoning* means developing a thoughtful and reflective approach. Ethical and value-related problems are best resolved through practical reasoning, as emphasis is placed on forming a value-based judgment. The cyclical nature of the practical reasoning process helps to address complex problems which cannot be addressed in a step-by-step manner.

The decision making and practical reasoning processes each are grounded in alternative educational approaches: empirical-rational science and critical science. The purpose of this paper is to examine these approaches, highlight the practical reasoning process, and identify implications for teaching practical reasoning within the consumer education setting.

Alternative Curriculum Approaches

Traditionally, Family and Consumer Sciences (formerly Home Economics) education has been grounded within an empirical-rational science approach. An alternative curriculum approach is the critical science based approach (Brown, 1978; Brown, & Paolucci, 1979). The educational goals, the subject focus, and problem solving processes are different for each approach (see Table 1).

Table 1
Alternative Curriculum Approaches

Empirical-Rational Science	Critical Science
Students are prepared for their future roles in a single context (e.g. the family)	Students examine current and future roles within multiple contexts (e.g., the family, work and community settings)
Subject matter organized by topics with focus on factual information and technical skills	Subject matter organized by recurring concerns and questions; emphasis on real world problem solving
Problem solving based on the decision making process; emphasis on the completion of the goal	Problem solving based on the practical reasoning process; emphasis on reflective judgment and action

Empirical-Rational Science-Based Approach

Traditionally, in the empirical-rational curriculum approach, Family and Consumer Sciences prepare middle and high school level students for their future roles within the family. Subject matter is organized by a series of topics related to separate subject areas, such as parenting, clothing and textiles, or foods and nutrition. Emphasis is placed on learning facts and “how to” skills related to each subject area.

As a specific topic within Family and Consumer Sciences, consumer education also has followed the empirical-rational science approach. Within this approach, emphasis is placed on learning facts and “how to” skills, such as how to purchase food, clothing, shelter or technology. Students are prepared for their future roles as consumers. Subject matter is identified and organized by topics such as reconciling a bank statement, completing a budget, purchasing products or learning about consumer rights and responsibilities. Individual- or family-related consumer problems are addressed and the problem is considered resolved once the goal is reached.

Within the empirical-rational science-based approach, problem solving is accomplished through the decision-making process. Decision making is presented as a series of steps, with each step completed before the next is undertaken: (1) identify the problem and/or goal, (2) consider the alternatives and one’s own values, (3) choose the best option, (4) plan and implement that option, and (5) evaluate the decision (Hurst, Kinney, & Weiss, 1983; Lowe, Malouf, & Jacobson, 2003). There are several variations in the steps to the decision making process, but most versions follow the same general pattern. However, because of the focus on factual-based knowledge, the examination of values has not been emphasized greatly within the empirical-rational approach.

For middle school and high school students, the decision-making process is used to practice consumer problem solving such as making choices among products and services. The following case study is an example:

Melinda is a sixteen-year-old high school sophomore interested in yoga. At Wal-Mart she sees a yoga workout on DVD and video. She doesn’t know which one to buy. The video is \$10 and the DVD is \$20.00. What should she do?

After considering the problem, the student then would engage in the decision-making process. The problem and goal are focused on which product to buy, with options that include not purchasing anything, or purchasing either the video or DVD. An option is selected, the plan implemented (buy the video) and the decision is evaluated (the video was the better choice because it saved money). An awareness of one's own values is considered part of the process, but one's own values or the values of others are not examined deeply. Once the process has been completed, the problem is considered resolved. Within this curriculum approach, middle school and high school students may or may not engage in real-world problem solving.

Critical Science-Based Approach

An alternative curriculum approach is the critical science-based approach. Using this approach, students examine their current and future roles within multiple settings, such as the family, workplace and community. The focus is placed on real-world problems or *recurring concerns*, rather than on specific topics. Recurring concerns are complex, ethical and value-related problems which continue from generation to generation and can be resolved only through reflective judgment and action (Montgomery, 1999). The concerns are usually stated in the form of a question, such as, "what should be done?" Examples of recurring concern questions include:

- What should be done about utilizing individual and family resources?
- What should be done to about becoming an informed consumer within the family and community?
- What should be done about gifts related to family celebrations (e.g., anniversaries, birthdays, or religious holidays)?

Subject matter is determined by the recurring concern question. For example, to investigate the question about gifts and family celebrations would require an understanding of

commercialism and alternative family rituals and traditions. Recurring concerns are not resolved once and for all time; rather, solutions to the problems may change over time.

Problem solving and taking action to resolve problems are emphasized within the critical-science approach. Problem solving through reasoned action is important as it helps students to think in rationale and ethical ways rather than through haphazard approaches. Practical reasoning is one process that can help students develop reasoned-action approaches.

Practical Reasoning Process

Practical reasoning is a non-linear process used to form a judgment about what should be done regarding a value-related or ethical problem (see Figure 1) (Olson, 1999; Reid, 1979). The components of this process include context, valued ends, alternative means, and consequences. Once the problem is identified, the student poses questions to further guide investigation of the problem.

- Context- What are the historical, social, economic, political, and cultural dimensions related to the problem?
- Valued ends (or ultimate goals)- What are the valued ends that all (individuals, family, community, society) could agree upon?
- Alternative means or actions- Multiple actions may be needed to move toward the resolution of a problem. What technical ("how to") actions could be taken? What communicative actions would lead to mutual understanding or shared beliefs? What actions would empower self or others?
- Consequences of the alternative means- What are the positive and negative consequences related to each action?
- Judgment- What action(s) should be taken?

To engage students in the practical reasoning process, problems may be presented in the form of a case study. For example, the following case study illustrates the recurring concern

of “what should be done about providing nutritious food to children”?

Eric and Maya were married two years ago and have a new baby six weeks old. Maya is breastfeeding and knows that breast milk is best for the baby but finds it time consuming. She has not talked about it with Eric but is considering buying formula. Should Maya continue to breastfeed or buy formula? What formula should she buy?

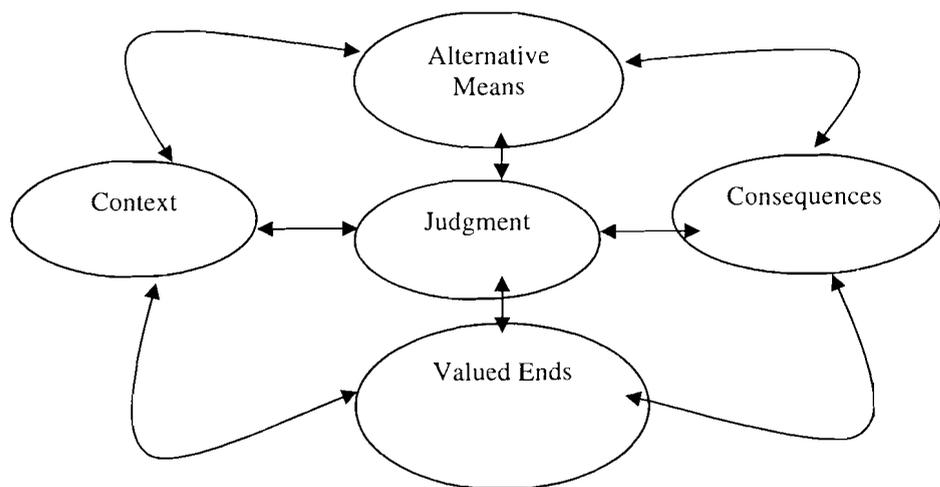


Figure 1: The Practical Reasoning Process

Using the case study as a foundation, practical reasoning questions then are developed by students and/or the teacher (see Table 2). These questions provide the basis for further inquiry, which can be accomplished through a number of strategies. After questions are posed, students may rewrite the case study to address the questions. The questions could serve as the foundation for research as students investigate alternative approaches to breast vs. bottle-feeding. Students could use the questions as the

Table 2
Practical Reasoning Question Types

<p><u>Valued Ends Questions</u> What are the goals of Eric and Maya as a family? What are their goals for their baby? What are societal goals regarding breastfeeding vs. bottle-feeding? Whose interests are best served in resolving this problem?</p>	<p><u>Context Questions</u> Do both Eric and Maya work outside the home? If they decide on formula can they afford it? Do Eric and Maya's cultural backgrounds influence their parenting beliefs?</p>
<p><u>Alternative Means Questions</u> What is the cost of formula? What are Eric and Maya's beliefs regarding breastfeeding vs. bottle-feeding? Have they come to a shared understanding? Could both breast- and bottle-feeding work? What actions would empower both Maya and Eric?</p>	<p><u>Consequences Questions</u> What are the financial consequences of buying formula? Of breastfeeding? What are the consequences of talking about one's beliefs? Would Eric feel empowered if he could bottle-feed? How will Maya feel if she is not breastfeeding?</p>

foundation for interviews with parents and their choices regarding caring for their children. Developing answers to these questions will require students to focus on consumer-related content as well as subject matter from other Family and Consumer Sciences areas. As a result of investigating the problem, students form a judgment about what should be done with regard to the problem. Ideally, students use practical reasoning to engage in real-world problem solving, develop a plan of action and implement the plan within the family, school or community settings.

Implications for Consumer Education

The critical science approach, and more specifically, practical reasoning, can help students learn to take reasoned action with regard to complex, ethical and valued-related problems. This is important in consumer education as many consumer problems cannot be addressed fully by using the step-by-step decision-making process. However, there are several implications for consumer education that need to be considered.

- Teachers need to ensure that students have experiences in developing reasoning with both concrete and complex problems. Real-life problems do not fit neatly into any category. Teachers need to help students understand and examine the consumer problem before they engage in problem solving. In addition, students need practice in solving problems in multiple contexts, such as the family, community and workplace.
- Ethical and value-based problem solving is important to consumer education and needs to be given explicit attention. Students need to have a full understanding of their own values in order to change consumer behaviors. In addition, understanding the values and perspectives of others is important in a culturally-diverse world.
- Consumer education teachers need to recognize that practical reasoning at first may be difficult to teach. It is difficult for people to teach things they have not yet experienced for themselves (Farber & Armaline, 1992). Teachers new to the approach may need to engage in the practical reasoning process using consumer problems before working with students.
- Students learn in different ways. While some students may learn best by using a step-by-step approach, others may learn best by using non-linear models, such as practical reasoning. Students need experiences using approaches which both match and stretch their thinking (Armstrong, 1994). It is important to address different ways of learning within

consumer education. This is a different focus from traditional consumer education, which has emphasized factual knowledge rather than learning styles.

- Teachers and curricula decision makers continually need to determine the concepts that should be taught in consumer education classrooms. For in-depth understanding to occur it is more important to focus on fewer concepts than to add more topics (Wiggins & McTighe, 1998). Practical reasoning should not be merely an "add on" to the curriculum. For students to gain an in-depth understanding of practical reasoning, teachers need to structure the investigative experience and provide class time to investigate the problem.
- Practical reasoning is not limited to the school classroom. Within community settings, consumer educators also may engage their clients in the practical reasoning process by asking practical reasoning based-questions or engaging participants in workshops. Clients may feel more empowered as they form their own reasoned judgments about what should be done with regard to a problem.

Summary

Reasoning for action is an important educational standard that deserves more attention. Consumer action can play a powerful role within the family, workplace and community to resolve consumer-related concerns. Critical science-based education using the practical reasoning process can facilitate a more in-depth examination of consumer problems. Middle school and high school students need opportunities to engage in reasoned action both within and outside the consumer education classroom. Community-based clientele also can benefit by using the practical reasoning process to address consumer issues. Consumer educators and teachers in Family and Consumer Sciences should give serious consideration to incorporating this approach into the classroom and consumer education programs.

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