

PROGRAM MISCONCEPTIONS: BREAKING THE PATTERNS OF THINKING

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The 21st Century will provide the impetus for close examination of public education. Those reviews may lead to drastic changes. Family and Consumer Sciences (FCS) is experiencing change more than many fields, as its underlying purpose and educational goals for students shift to accommodate emerging American family structures and functions. According to Montgomery (1994), "Home Economics, the foundational field of what is now widely called family and consumer [sciences] education and a discipline within vocational education, is now undergoing its own reexamination." "In Wisconsin," she continued, "this reexamination has resulted in an attempt to move family and consumer education toward use of an underlying critical science perspective" (p. 3). In the process of this reexamination, parents, teachers, students, guidance counselors, and administrators have developed misconceptions concerning the critical science perspective. This article will examine those misconceptions and explore strategies for overcoming them as critical science is incorporated into the FCS curriculum.

Development of Misconceptions

Although many of us are unaware of our misconceptions, they are a part of our thinking throughout our lives. They can surface at any time, with ideas ranging from concrete to abstract. For example, a misconception arising from a concrete idea is that children are often taught they cannot have dessert until all the other food on their plate is eaten. A misconception associated with a more abstract idea, such as learning, might be that middle school learners are not capable of higher level thinking. Unfortunately, some people may cling to these misconceptions, not considering the impact of their beliefs and practices on others. According to Paul (1987), "Our primary nature is spontaneous, egocentric, and strongly prone to irrational belief formation" (p. 130). Therefore, misconceptions in our thinking are inevitable.

Misconceptions develop for a number of reasons and in a number of ways. For example,

1. Once we have an idea in our minds, it is difficult to erase. Meyer (1993) warned us that people will go to great lengths to avoid changing the way they think. Individuals naturally want to hold onto their beliefs tightly, especially if they serve their interests, preserve their sense of comfort and security, and minimize inconsistencies in their lives (Paul, 1987). Furthermore, according to Flavell (as cited in Nickerson, Perkins, & Smith, 1985), when misconceptions "... produce the same satisfied feeling (or lack of feeling) as correct understandings do" (p. 295), those misconceptions are difficult to dispel. For example, a misconception associated with parenting is that holding babies causes them to be "spoiled." Clinging to this misconception promotes a feeling of security and comfort, knowing that this idea has been passed down from one generation to another over time.

2. Misconceptions are often held in our minds unconsciously, especially if those ideas are continually reinforced by family members, friends, teachers, and other significant individuals in our lives. Furthermore, these same patterns of thinking may be reinforced, without us realizing it, by dominant forces in our society such as mass media, popular culture, corporations, and government. For example, parents may be constantly bombarded with the idea that acquiring and using numerous and complex technological devices will result in happier, more intelligent family members. Hearing an idea over and over again can result in that idea remaining a part of our thinking over a lifetime (Paul, 1987).

One example of this retention of misconceptions surfaced in my students' journals. When assigned to question their families' and friends' perceptions of the FCS major, many preservice students reported that those asked retained the traditional view of the major, equating it with cooking, sewing, and other family living skills. Teachers, also, are subject to misconceptions, underscored by the educational and promotional materials they receive (posters, brochures, etc.) developed for use in the classroom. At first glance, these materials seem appropriate teaching aids, but in reality, many of them are thinly-disguised advertisements from businesses. Such materials are well-designed, attractive, and informational, often projecting subtle messages that we ought to be teaching about pork, eggs, laundry products, and house cleaning procedures. Receiving these materials over time can easily persuade teachers to believe these topics ought to be the focus of FCS curriculum.

3. Finally, the amount of traditional education received does not seem to make a difference in whether or not people consciously examine their thoughts and actions for misconceptions. Gardner (1991) indicated that as children proceed through school, misconceptions are not necessarily eliminated, or even addressed. Perkins (1986, 1991) and Brooks and Brooks (1993) agreed, claiming individuals often have only a superficial understanding of what has been taught in school. Perkins (1991) also maintained that individuals do not acquire what is called deep understanding or insight, which is dependent on “. . . thoughtful learning rich with connection-making”. (p.6)

Unfortunately, many students leave school without ever making connections between ideas. This superficial understanding, without insight, often leads to misconceptions. Paul (1987) was even more forceful in his indication that students graduate from high school and college/university “. . . with a great deal of inert knowledge and even more activated ignorance” (p. 137). Students, he insisted, often do not know what they believe, leading to even more unconsciously held misconceptions. Despite Shor's (1992) and Brown's (1985) insistence that the outcome of education should “develop critical consciousness and empowerment rather than knowledge accumulation,” (as cited in Montgomery, 1994, p. 15) with the teacher functioning as a facilitator and collaborator, Paul's claim that the misconceptions developed early in life are difficult to dispel suggested even traditional education does not encourage critical consciousness.

Misconceptions and the Critical Science Perspective

Over the past 20 years, the field of FCS has experienced dramatic change. The most extensive change has been a shift in the emphasis from an empirical, rational-based perspective

toward a critical science based perspective (Staaland, 1987). The previous view of FCS, which tended to focus on students gaining technical skills necessary to perform household tasks, is no longer appropriate for today's families and societies.

The shift has helped shape the FCS curriculum to address issues beyond technical skills to focusing on "helping students learn to think, reason, reflect, and take action through the study of recurring, practical problems" (Redick, 1998, p.1). This shift called for a transformation in views about teaching and learning, as well as in actual teaching practices. Most of the responsibility for the change will be taken by teachers, especially since they may find themselves struggling with contradictory demands and varying expectations from administrators, students, and parents. Since old ideas are often held unconsciously, and are difficult to dispel, teachers will most likely find themselves dealing with the dual responsibilities of both revitalizing the curriculum, and convincing others of the value of the new curriculum.

Essential to this educational change is the shift to the critical science perspective. In the critical science perspective, thought processes and students' personal meanings comprise the core of the curriculum. This view of knowledge and learning, which includes elements of constructivism, calls for teaching and learning situations enabling learners to construct their own understanding of ideas (Brooks & Brooks, 1993). Over time, new ideas are integrated with existing knowledge, which may or may not include: (a) erroneous information and (b) personal biases perceived as facts (Brooks & Brooks, 1993; Meyer, 1993; Wisconsin Department of Public Instruction, 1991).

Furthermore, as individuals grow and develop, new knowledge and experiences are examined and tested in light of old knowledge, and experiences and connections are made between ideas. Montgomery's (1994) interviews with FCS teachers netted responses indicative of reflection on curriculum, emphasizing their struggle to incorporate the critical science perspective in a field previously concerned with a technical approach to curriculum. One teacher summarized her attempts as follows:

you're evaluating and going back to the beginning and making sure they understand the concepts before you can go on, so it's a spiral curriculum because it builds . . . it's important to me . . . because it goes back to my change in thought about teaching them all these isolated concepts versus now a connectiveness is always, always in my head, about being able to tie one concept into the next, and trying to build on it . . . (p.56)

Sometimes these connections were successful (Pines & West, 1986), and provided opportunities for building powerful understanding (Meyer, 1993). However, the connections—or lack of them—can also lead to what Pines and West called "errors in understanding," or what have been referred to as misconceptions.

It is not unusual, for example, for students to equate the idea of "expert" with a person possessing a great deal of factual information. With this belief in mind, people were often led to believe that students must acquire facts first, and then think about them (Raths, Wassermann, Jonas, & Rothstein, 1986). Perkins' (1987) assertion that "knowing the facts is not enough" (p. 44), is especially true in FCS, since the field seeks to address and solve complex concerns of the family.

Even with a large body of knowledge, and memorized facts at their disposal, it would be unreasonable to expect FCS students to apply these facts to every family's situation. No two

families are alike, and differences among families will become even more pronounced as time goes on. One teacher summarized her attempts to overcome the reluctance of students and parents to accept her new approach to teaching and learning:

It took me an entire year to deal with the negativism of this and get them to understand it was the process that was more important than just memorization of facts . . . where if it was a process of communicating, the group sharing, the interaction, the examination, the reflection of their own feelings, and beliefs and attitudes, it was a lot harder for them to recognize they actually learned something. (Montgomery, 1994, p. 68 - 69).

Students in the FCS programs must also put aside their previous conceptions of the field to make room for the new focus. One preservice student, reflecting on her high school experience with FCS courses, complained of the absence of relevant material. Among the class assignments, she indicated, was to plan a style show, something she didn't feel was important to her at that time in her life. In addition, the students were required to memorize vast amounts of facts and terms, something she and her classmates found boring, especially since there were no follow-up activities where those facts could be applied.

This same student, when asked about the work of the family, was able to name many of the concerns facing her family while she was growing up, including financial crises, overcoming gender bias in assigning household tasks, and communication with each other. The absence of productive communication, she claimed, contributed to the family's struggle to adapt to a changing financial situation, yet her FCS courses offered little to aid them in their time of need.

Had this student's FCS courses addressed various aspects of the work of the family, her family may have found itself better equipped to deal with the crises at hand. What was absent from the FCS classroom, in this student's case, is what Erwin, Moran, and McInnis (1996) defined as the new focus of FCS courses: "The focus of home economics should be on preparing students to implement critical thinking, to practice self-evaluation, and to stress goal setting, all of which affect students' home and career lives" (p. 22). Smith (1992 as cited in Erwin et al., p.18) concluded that "home economics teachers are more often closer to their students' home situations than other teachers."

Keeping this observation in mind, FCS teachers may be in a better position to assist students and their families when they face domestic crises. The observation of the preservice student, who noted a lack of relevant and substantial material in her high school FCS course, may not apply to all students with prior FCS experience; however, her observations highlight the failure of these courses to take into account the most essential skills and tools needed to facilitate healthy family function. According to guidance counselors interviewed for Erwin et al., (1996) study, the two dominant themes FCS courses should address were improved relationship skills and personal financial management and budgeting. Both these themes would have assisted this student and her family, yet her FCS courses focused on the accumulation of facts and skills.

Learning to use and process information will always be more valuable than the acquisition of mere facts. Therefore, when a person is confronted with these ideas about facts and application, connections begin to form between the notions of learning facts and applying facts. An error in understanding can occur if the subject decides the facts have to come before the application. In reality, as learners work with examples and apply information, they learn facts through the process of application.

Since human beings are not born with natural abilities to think in a rational way, those abilities need to be developed over time with “extensive and systematic practice” (Paul, 1987, p. 130). This practice can occur in the classroom and at home with the aid of parents and teachers. However, a shift in the role of parents and teachers is necessary to facilitate this change. Parents and teachers can no longer function as mere dispensers of knowledge. In this view, the goal was for individuals “. . . to take responsibility for their own learning, to be autonomous thinkers, to develop integrated understandings of concepts, and to pose – and seek to answer - important questions” (Brooks & Brooks, 1993, p. 13).

In their efforts to achieve this goal, teachers must also become more aware of how they answer their students’ questions. Many teachers complain that their students only want to know the “right” answer, so they can write it down in their notes, and eventually, answer related test questions correctly. Teachers striving to develop autonomous thinkers will avoid giving the “right answer.” Instead, they may ask another question in an effort to facilitate conceptual thinking.

For example, in a unit on money management in a Consumer Economics course, a student may ask, What percentage of a person’s income should be spent on credit card debt? To encourage conceptual thinking, the teacher might ask, Why do people use credit cards? What are the advantages and disadvantages of credit cards? Whose interest is being served when credit cards are used? What consequences can occur when credit cards are over-extended? or What might happen if credit cards no longer existed? Such questions would demonstrate the role the teacher would play in the critical science approach.

Fox (1997) recognized the need for this type of questioning. She proposed that this technique would lead students to higher-level thinking, and for teachers, practice in facilitating discussion intended to instruct. In a discussion centering on work and the family, her classroom experience went as follows:

Students were again asked to consider the case study to help the family make a decision about their future. The answers were starting to change. Issues raised included the happiness of the children, the cohesiveness of the family, and what effects a job change for mom would have on the family. They then started to discuss the increased use of resources if dad commuted, and the additional housing needed if he lived away. Would the added pollution created by the commute be ethical? Students discussed the research that shows volunteers are disappearing as more families become dual-worker households and lose valuable time in long commutes. What are the moral and ethical implications of dad commuting and mom changing jobs? What will happen to the local schools if all the families moved away? The students were considering the effects on society as a whole rather than just the benefits to one family (p. 38).

Misconceptions and FCS Programs

During the dramatic change in FCS, ample opportunities for misconceptions to form have arisen. As knowledge and experiences regarding the critical science perspective have been tested in the classroom, connections have been made with existing knowledge. As these connections are made, new understandings emerge, along with errors in understanding (or misconceptions). As more and more FCS teachers transform their thinking, they are faced with confronting misconceptions regarding the critical science perspective. One misconception that has arisen in

the minds of FCS professionals, other teachers, parents, administrators, and students, is the notion that FCS programs with a critical science perspective do not include “hands-on” or laboratory experiences.

This misconception may have emerged because, in the critical science approach, laboratory classes such as food preparation and clothing construction are used for a different purpose than in the traditional approach. In the latter approach, laboratory classes are often used as an opportunity for practicing and perfecting technical skills related to food preparation and clothing construction. The act of making a “perfect” food or clothing product in a traditional approach is perceived as an “end,” with the emphasis on students acquiring technical skills.

This is not true of laboratory experiences in the critical science approach. In this view of teaching and learning, engaging in hands-on activities and learning technical skills is considered a means to an end. This view supports connecting everyday activities to broad concepts that are recurring concerns of today’s families. For example, Johnson (1998) explained that in the critical science classroom, students might be engaged in making a project related to concepts such as family culture and family traditions. She indicated,

The important learning in this case is not “how to make,” but rather the importance of culture, communicating that culture to future generations, the effects of culture on our lives, and the differences and similarities among families and people. This is a very different focus than the learning of how to cook and sew (p. 93).

As the focus of the curriculum continues to ask the practical moral questions of “what do we do about a given situation?” new knowledge can be applied in almost any setting and subject area. In a textiles course, according to Fox (1997),

. . . one could discuss the moral and ethical implications of sweat shops: “What should I do to ensure the clothing I purchase has been produced by workers in healthy working conditions?” If this question were asked of many college students, and consumers in general, the answer would probably be that is not the responsibility of the consumer. If our curriculum is to help students develop morally and ethically, we have a responsibility to help them change that view. (p. 40)

Fox (1997) also commented on the issue of food waste, and how a discussion of that topic could be integrated into a course on food preparation. “With statistics on the considerable amount of food waste generated by restaurants and private households,” she suggested, “it could be possible to discuss the unmet food needs of the homeless” (p. 40). Questions a teacher could ask of students might include, Who is affected when food is wasted? Is it moral to throw away food? What resources has the family lost? What are the consequences for the family? The neighborhood? The town? The state? In light of these questions, Fox hoped students would eventually gravitate toward higher-level questions concerning what could be done to gather food that would otherwise be thrown out, leading to a discussion of social injustices leading to food waste. Her suggestions highlighted the possibilities in critical science laboratories. Both traditional and critical science approaches to FCS offer a variety of possible laboratory experiences; the only difference between the approaches would be the focus of the activities.

A common observation among preservice FCS students is the misconception that their chosen field of study is less significant than other subject areas. One student observed that her friends, family, and peers held the misconception that FCS was “not as important as math, science, English, and the other ‘core’ subjects.” With her new understanding of the critical science perspective, however, she came to the conclusion that the skills taught are “more important than ever, in the day and age in which we live.” The skills she refers to -- setting personal and group goals, learning to assess your standards and values, cooperation, and focusing on process instead of product -- are taught in food and clothing laboratories.

Breaking Patterns of Thinking

Old patterns of thinking, sometimes acting as blocks to thinking in new ways, may be difficult to break. A social and intellectual process, called “developing critical awareness,” can help us examine misconceptions. This process consists of several elements. Among these is the conscious identification of fuzzy or unclear ideas. Individuals need to check ideas for accuracy, completeness, and validity. If there has been an error in understanding (or misconceiving), an idea must be clarified. Checking to see how others perceive ideas, situations, or conditions is another step in breaking patterns of thinking. Engaging in reflective and critical discourse can help to publicly test perceptions. This process must occur in the context of dialogue with others in order to discover, reconstruct, and ultimately transcend beliefs which are often internalized, both uncritically and unconsciously (Paul, 1987). This dialogue can take many forms, such as reading others’ writing, talking and listening to colleagues, and writing to clarify and convey ideas to others.

It is unlikely that administrators, guidance counselors, other teachers, parents, and students will break the old patterns of thinking; it will likely be the new generation of FCS teachers themselves who will illuminate the new focus of the program, and establish their own credibility as professionals whose principal objective is to assist families and consumers in communicating, decision making, and managing their resources.

According to Pines and West (1986), when people attempted to make a major shift from one belief system to another, they tended to hold on to their existing set of beliefs *while* learning about a new set. Holding two sets of beliefs may give a sense of security, but the integration of ideas may also lead to the emergence of misconceptions. This is especially true if the person holds a superficial understanding of the new beliefs. Those who have taught or experienced FCS courses based on a technical, product-focused view may adhere to that framework while they are learning about the critical science approach.

To counteract compartmentalization, according to Pines and West (1986), learners must gain in-depth knowledge of the new set of beliefs and have ample opportunities to apply that knowledge in a real-life setting. Therefore, it is important for FCS preservice and inservice teachers to have sufficient opportunities to observe other teachers and to engage in serious dialogue with them about their views of education and FCS curriculum.

Part of the work of the new generation of FCS teachers is to dispel some of these myths to all school personnel, as the skills taught in today’s FCS courses are universal, requiring re-emphasizing in many courses and at many times during our lives. Dispelling today’s misconceptions, and the many others that will emerge over time, involves a conscious effort on the part of FCS professionals. Questioning each others’ ideas, and explaining the relationship between beliefs and practices, will contribute to the development of a curriculum that will reflect the needs of our changing culture. As the teachers in the field are drawn together for inservice

education, they must be encouraged to question and scrutinize taken-for-granted ideas in order to perceive situations differently, and look at ideas from a variety of perspectives.

When teachers rethink the guiding assumptions of their teaching practices and actions, transformation in teaching and learning can occur (Fedje, 1992). The need for FCS as general education for all students, according to Erwin et al., (1996) is apparent. As the focus of secondary courses in the field is redefined, acceptance and appreciation of the need will hopefully follow. Breaking the old patterns of thinking on all levels will facilitate this change. Stout, Couch, and Fowler (1998) described a session at a national conference for FCS, where a teacher serving on a discussion panel demonstrated her conviction that the previous conception of the field must be dispelled before the new view gains acceptance:

We have a rich heritage. There was a time and place for the content that may take a bashing now. Why [should we] diminish the value of what was once a need of the community and society? I saw an article in the newspaper that said "This isn't the home economics that your mother took," and I thought, "Why would anyone expect it to be?" We do not study the same history . . . science . . . that our mothers studied . . . Knowledge of [our] history helps us keep things in perspective. (p.9)

Continuous dialogue among teachers, administrators, teacher educators, and preservice students must be encouraged and facilitated, as it may well prove to be the most valuable tool in advancing the new focus and function of FCS. As the field's teachers work with their students and students' families, they are working to accommodate the changing American family structure and function. This is the ultimate goal of the new FCS curriculum. In the words of one preservice student, "Perhaps as we turn out more responsible children, and statistics reflect better value choices, our profession will become more valued in the eyes of the public."

Change will be slow, and administrators' acceptance of the changes in the field's focus may be even slower, as their misconceptions of the critical science perspective will be as difficult to dispel as the public's and the students'. However, if FCS teachers continue to insist on the new curriculum, and continue to implement the changes, the misconceptions will fade. Once acceptance and recognition is gained, more diverse enrollment is likely to follow, and the skills taught in the course will be recognized as necessary and valuable for all students.

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