

## A Critical Review of Korean Home Economics Education Research Based on a Critical Science Perspective

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### Abstract

This study critically appraised the accumulated articles based on the critical science perspective on Korea's home economics education. The 55 articles published from 1993 to 2011 were identified and placed into three categories: Critical science paradigm, practical problem-focused curriculum, and systems of action. The common result across categories was that some authors did not fully understand the concepts of practice, a practical problem-focused curriculum, the practical reasoning process, and the systems of action. A positive outcome of including a critical science perspective in the Korean national curriculum will be seen when systems supporting this perspective, such as those providing more specific information on a critical science perspective and the relevant textbook accreditation standards, are available. We present a proposal based on considerations of a national curriculum, teacher education, relevant philosophical perspectives, and classroom practice.

### Keywords

Critical science perspective, practical problem-focused curriculum, systems of action, Korean home economics education

The American Home Economics Association (AHEA) commissioned Marjorie M. Brown and Beatrice Paolucci to develop a definition of home economics. Brown and Paolucci (1979) asserted the need for a critical science perspective (CSP) in home economics. This need was related to the social realities involved in the ideological framing of actions performed by the individuals and families served by home economics. Brown and Paolucci (1979) relied heavily on the critical theory developed by Jürgen Habermas. They (1979) explained the meta-scientific background of critical science as follows: "Critical science seeks to recover . . . self-reflection on the uniting of theory and practice, of fact and value, of science and philosophy . . . Critical science has a practical concern of improving human existence by enabling human kind to determine, consciously and actively, its own way of life. . ." (p. 46). Kister (1981) added, "An important feature of critical science is its orientation toward the praxis of life through the emancipation of individual from the hypostatized force of society and the emancipation of mankind by becoming more aware of structures that bind them" (p. 27). Brown and Paolucci (1979) argued that if home economics were a critical science, then home

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economics professionals would have a mission to help individuals and families be critically conscious of the distortion of ideological beliefs, be free from oppressive realities, be self-formative, be able to participate in setting social goals, and take critical social action. Many studies (Baldwin, 1985, 1991; Brown, 1980; Brown, 1993; Johnson & Fedje, 1999; Vaines, 1993; Vincenti & Smith, 2004; Laster, 2008) on the CSP in home economics have been published since then.

As frequently mentioned in McGregor's (2009) meta-review of book reviews, philosopher Jürgen Habermas has frequently been cited in home economics literature that uses a critical theory to explain the major concepts included in a mission statement of home economics developed by Brown and Paolucci (1979), i.e., concepts of action systems, self-formation, emancipation, social goals, and so on.

Thus, the notion of a CSP used in this study, which was drawn from Habermas (1971), is one of three science paradigms widely adopted in the curriculum development field; the other two are the technical and interpretive paradigms. In his theory of knowledge, Habermas (1971) exhaustively examined the interrelated notions of fundamental human interests, rational modes of knowledge, and types of action. He claimed that humans have three kinds of knowledge-guiding interests: Technical, interpretive, and emancipatory. Knowledge-guiding interests formalize three kinds of sciences (empirical-analytical science, historical-hermeneutic science, and critical science) and three systems of action (technical action, interpretive action, and emancipatory action). His three-paradigm structure is widely applied in home economics curriculum models used by Baldwin (1985, 1991), Brown (1978), Hultgren & Wilkosz (1989), and Laster (2008).

Brown (1978) contends that the content of a home economics curriculum based on a critical science perspective should be selected from and organized around, the perennial practical problems of individuals and families. As Hultgren and Wilkosz (1986) stated, "Since the publication of *Home Economics: A Definition* (Brown & Paolucci, 1979), various states have undergone a reconceptualization of home economics curricula from a CSP (p. 148)." As documented in numerous influential articles in the home economics field, a practical problem-focused curriculum has become synonymous with a critical science-based

curriculum in US home economics education. Montgomery (2008) used the term "critical science-based curriculum perspective" in explaining the nature of a perennial practical problem. Smith (2012) noted "The critical science approach (practical problem-based) . . . helps students learn to think, reason, reflect and take action through the study of recurring practical problems" (p. 5).

More recently, in 2008, the National Association of State Administrators for Family and Consumer Sciences (NASAFCS) developed the *National Standards for Family and Consumer Sciences Education*, which adopts a CSP (Family and Consumer Sciences is the new name for home economics in US). But this trend is not limited to the US. The position of the International Federation for Home Economics (IFHE, 2008) on home economics in the 21<sup>st</sup> century announced at the centennial congress was based on a CSP.

Numerous articles and books based on the application of the CSP to home economics education have been published from the beginning of the 1990s in Korea. However, during the introductory phase, few scholars were acquainted with the CSP as they tried to apply it to the Korean home economics curriculum and teaching. Indeed, they translated the Ohio and Oregon's curriculum guides in the 1990s and used them without modification. At the beginning of the 21<sup>st</sup> Century, they tried to develop their own curriculum materials and to transform the traditional Korean curriculum into one based on critical science.

The growing interest in and evolution of the CSP became the motive for changing the overall paradigm for home economics education in Korea. Recently, the CSP was adopted in both the 2007 Revised (Ministry of Education and Human Resources Development [MEHRD], 2007) and 2011 Revised (Ministry of Education, Science and Technology [MEST], 2011) Korean National Home Economics Curricula. As Korea implements a national curriculum and has a textbook accreditation system administered by the MEST, the national standards for each subject matter are always emphasized in accreditation criteria. Consequently, home economics textbooks reflecting a CSP have been published (Lee, 2010; Lee & Yoo, 2010).

Some 20 years have passed since the introduction of the CSP to Korean home economics. Research based on the CSP has shown encouraging quantitative growth, but little attention has been paid

to the quality of the research. There has been some trial-and-error in the application and development of a CSP. This situation calls for the meta-review of previous works in this research area and a discussion of the implications for future directions of curriculum development, instruction, and teacher education. The purpose of this study was to identify the categories and trends of studies based on a CSP in Korea; to examine the concepts and knowledge related to the CSP whether those are well comprehended and delivered in each study; and to critically evaluate the strengths and weaknesses that have the potential to influence the future directions of home economics education in Korea.

## Method

A qualitative meta-review was performed for the analysis of CSP-based articles completed from 1993 to 2011 in Korea. “A meta-review is a process or technique of synthesizing research results to retrieve, select, and combine results from previous separate but related studies, leading to a summary of the pooled results (Chalmers, Hedges, & Cooper, 2002; McGregor, 2009, p. 515 recited). The meta-review aimed at exhaustively comprehending, synthesizing, and critically appraising the results of numerous related studies sharing a common purpose or research question. A common interest could be a focus on a specific variable, a research question, an issue, a perspective, or a paradigm. For this study, the common point was the focus on the CSP on home economics education.

An electronic database search was used for selecting articles. Only articles published in Korean academic journals were included in the qualitative meta-review. The DBpia (<http://www.dbpia.co.kr>), KISS (<http://kiss.kstudy.com>), and RISS (<http://www.riss.kr>) Korean electronic databases were used. An initial keyword search (using Korean characters) of “home economics” was carried out, and further searches were undertaken with the keywords “curriculum,” “critical science,” “perspective,” “paradigm,” “practical problem,” “practical reasoning,” and “systems of action” of the results of the initial search. The keywords, title, abstract, and contents of each article retrieved were thoroughly reviewed to re-confirm each article’s appropriateness as research based on a CSP. Final selection of each article is depended on whether its

theoretical background is related with a critical science perspective or not. A total of 55 articles out of 549 (387 from KISS, 84 from RISS, and 78 from DBpia electronic databases) articles from an initial search were finally selected for the qualitative meta-review.

Figure 1 shows the process of how the 55 articles were grouped into similar themes and into three categories. Themes integrating concepts related to the nature of critical science and curriculum paradigm preference were grouped into the critical science paradigm category (10 articles); those involving (1) analysis of curriculum guides/textbook reviews, (2) development/implementation of the curriculum/lesson plan development and the effects of practical reasoning instruction, and (3) evaluation of a practical problem-focused curriculum were grouped into the practical problem-focused curriculum category (39 articles); and those incorporating needs assessments related to educational objectives and the level of practice in the three systems of action were grouped into the systems of action category (6 articles).

A set of criteria for qualitative meta-review was established as shown in Table 1. The strengths and weaknesses of articles in each of the major categories and integrated themes are discussed.

## Results

### Research on the Critical Science Paradigm

Research on the critical science paradigm has dealt with core concepts, including the nature of home economics, curriculum paradigm preference, and competing curriculum paradigms. Of the total of 55 articles, 10 corresponded to this category, with four articles on concepts related to the nature of the critical science paradigm and six articles in the sub-category of curriculum paradigm preference (see Figure 1).

#### *Concepts related to the critical science paradigm*

The studies corresponding to this category were reviewed according to the criterion of what kind of concepts or paradigms were discussed. Kim (1993) dealt with the four fundamental concepts of environment, integration, synthesis, and practice, which are used most frequently in identifying the nature of home economics in Korea. She noticed a lack of consensus on the core concepts of home economics among home economics educators

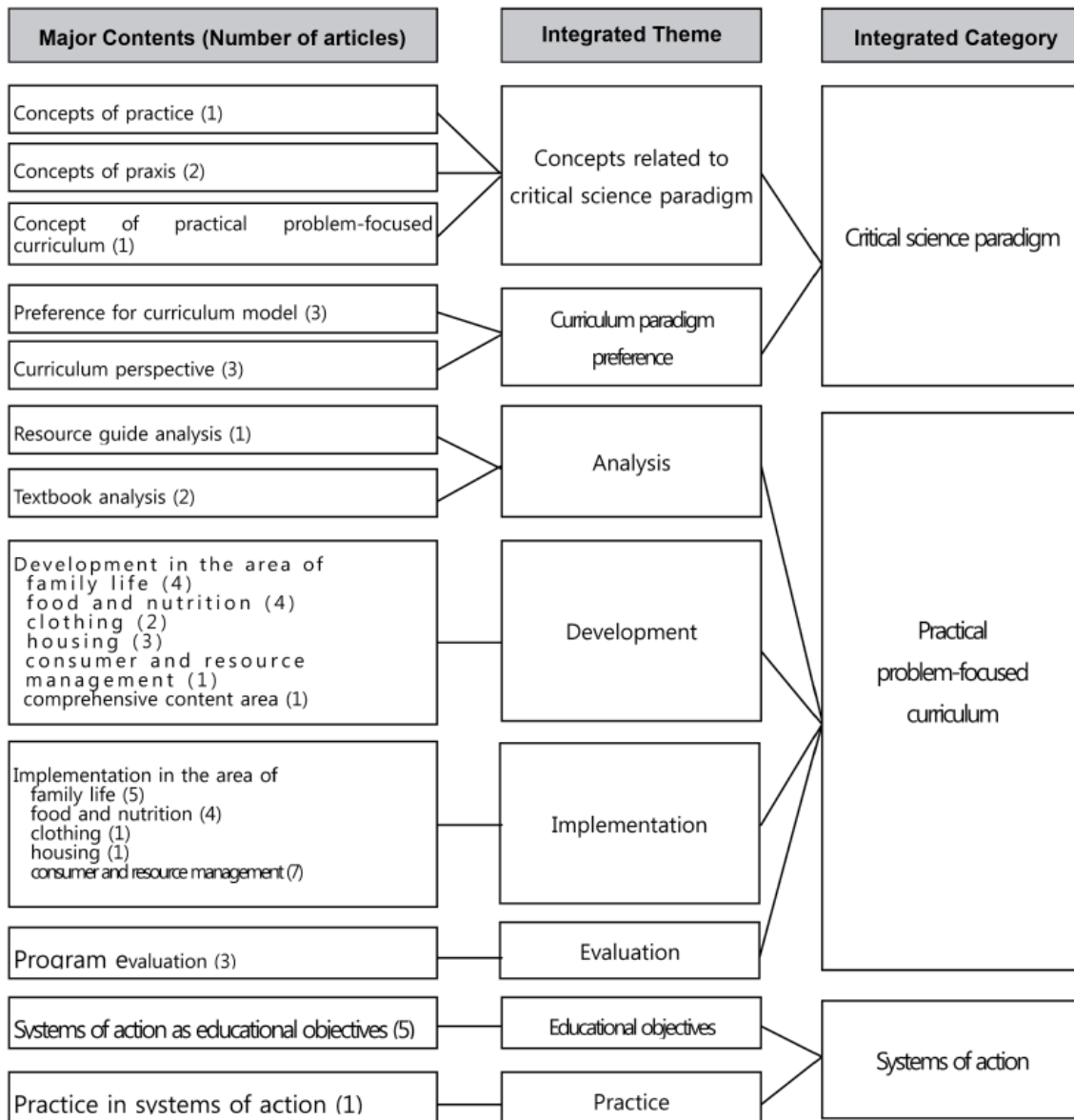


Figure 1. Process of Integrating Categories.

Table 1. Criteria for Qualitative Meta-review

Category	Integrated theme	Criteria for meta-review
Critical science paradigm	Concepts related to critical science paradigm	Concepts or paradigms addressed
	Curriculum paradigm preference	Three curriculum paradigms
Practical problem-focused curriculum	Analysis	Elements of curriculum guide/textbook
	Development/Implementation	Content area, school level, class hours, characteristics of practical problems, practical reasoning processes, effects of practical reasoning instruction
	Evaluation	Positive and strong points, negative and weak points
Systems of action	Educational objectives	Content area, educational objectives regarding three systems of action
	Practice	Level of practice in the areas of three systems of action

in Korea and suggested each set of concepts from the CSP. Byun, Lee, and Lee (2009) pointed out that the concept of “practice” for home economics education from a technical science perspective has been used at the primary school level. They suggested that the concept of ‘practice’ should instead be conceptualized as a concept of “praxis” from the CSP. Yoo (2006) raised the same issue of distortion of the meaning of “practice.” She argued that Korean home economics educators conceptualize practice from a technical perspective. She clarified a concept of practice from a CSP as a reasoned social action, which leads to human autonomy and a free society by maintaining systems of action in individual, family, and community life. A commonality among the papers of Byun *et al.* (2009), Kim (1993), and Yoo (2006) is that, owing to Korean home economists’ unclear use of terms relating to various concepts and paradigms, a wide range of interpretations of the meanings of the concepts and paradigms underpinning home economics is evident. Thus, the direction of home economics itself has become vague.

Meanwhile, Yoo (2007) adapted the notion of praxis from a work of Aristotle, analyzed and compared it with those of modern philosophers and home economics professionals, and drew implications. She conceptualized the person educated through a critical science paradigm of home economics education using the notion of practical wisdom.

The authors of articles in this sub-category tried to establish concepts and paradigms from a CSP. The authors also stressed that clarifying the core concepts of the critical science paradigm is essential for contributing to the promotion of social welfare as well as the well-being of individuals and families, which is a mission of home economics.

#### *Curriculum paradigm preference*

Studies in this category centered on the technical, interpretive, and emancipatory curriculum paradigms based on the theory of knowledge proposed by Habermas (1971). Instruments to investigate the tendencies toward the elements of the curriculum for each of the perspectives, which were reconstructed from previous studies by Baldwin (1985), Brown (1978), and Schubert (1986), were used in most of the articles. Also, because curriculum development is dependent upon the teachers who implement the curricula, the teacher’s belief in the curriculum is significant.

As Brown (1978) pointed out, the perspectives of curriculum developers on the elements constituting the curriculum, including the learner, society, and knowledge, all influence curriculum development. In this regard, the curriculum paradigms that teachers preferred were examined.

Our research showed that, except for Chae (1996a) and Baek and Chae (1998), studies in this sub-category indicated that the preferences of Korean home economics teachers with respect to curriculum paradigms were in the order of the interpretive, emancipatory, and technical paradigms. Greater preferences for the interpretive and emancipatory paradigms were more common among younger teachers with fewer years of teaching experience (Baek & Chae, 1998; Choi, Chae, & Park, 2009; Lee, Cho, & Chae, 2007; Park & Yoo, 2001). However, preferences for the sub-elements of a curriculum were not consistent. On the other hand, the more recent study by Kwon, Lee, & Lee (2011) was consistent in preferences for curriculum elements. The difference in “instructional culture” between the teacher group with clear curriculum preferences and that with vague curriculum preferences was statistically significant.

#### Research on a Practical Problem-Focused Curriculum

In this category, examinations of the sub-categories of analysis, development/implementation, and evaluation of practical problem-focused curricula were conducted (see Figure 1).

##### *Analysis*

We examined three papers (Kim & Yoo, 2007; Lee, 2010; Lee & Yoo, 2010) to determine the type of elements that the authors analyzed within the curriculum guides/textbooks.

Kim and Yoo (2007) compared the curricula of Ohio (Kister, Laurenson, & Boggs, 1994) and Oregon (Oregon Department of Education, 1996a, 1996b), which pioneered practical problem-focused curriculum development, and the home economics curriculum of Korea. In this process, the contents and practical problems addressed, the process and method of teaching-learning, and the evaluation methods of curriculum guides were compared. According to the study, the Ohio resource guide was relatively suitable to be adapted for use in Korea because the content structure of the Ohio resource guide and that of Korean curriculum

are similar. Korean home economics education could gain insights into and be aware of implications for setting future directions from the Oregon model.

A critical science-based analysis of textbooks used in the seventh grade in Korean junior high schools was conducted by Lee (2010) and Lee and Yoo (2010). Lee (2010) analyzed the 12 types of textbooks from a CSP and identified the following problems. The current textbooks are not designed to provide teachers with the appropriate orientation, encourage students to nurture complex high-level thinking abilities such as critical thinking, and urge students to employ practical reasoning in the context of society, history, and culture. Lee (2010) suggested alternative teaching-learning strategies for making the best use of the current textbooks: 1. focusing on “what-should-be” problems instead of “how-to” problems, which were the focus of traditional home economics instruction; 2. designing home economics instruction using broad concepts; 3. helping students to nurture the three systems of action in family life; 4. using practical reasoning; and 5. using more conceptual and critical questions rather than technical questions in home economics instruction.

Lee and Yoo (2010) referred to various previous studies (Johnson & Fedje, 1999; Knippel, 1998; NASAFCS, 2008; Oregon Department of Education, 1996a, 1996b) and suggested five elements of a practical reasoning process based on the results of a textbook review: Valued ends, context, alternatives and means, consequences, and action and reflection. In this process, it was discovered that not all Korean textbook authors fully understood practical reasoning processes (Lee & Yoo, 2010). For example, general problem-solving processes and practical reasoning processes were not clearly differentiated. Second, components of practical reasoning processes were reflected in home economics textbooks but were conflated with general problem-solving processes. Third, unit themes and contents were described using different curriculum perspectives.

The authors of all three papers sought to introduce teaching materials and teaching methods reflecting the critical science paradigm to classroom teachers and textbook writers. These authors explored the possibility of adapting a practical problem-focused curriculum in Korea and suggested implications for newly developed curricula.

#### *Development/Implementation*

We reviewed 33 papers, of which 15 were categorized as development of practical problem-focused curriculum and 18 as implementation of practical reasoning instruction based on the analysis criteria.

Our review of the target papers sought to determine whether the authors understood the characteristics of practical problems. Practical problems are complex, ethical, and value-related; are addressed as questions of “what to do” or “what action to take;” and require reasoned thought, judgment, and action. The key question is not “What will I do?” in the sense of “Knowing my motives and habits, what do I predict I will do?” Nor is it “What shall I do?” in the sense that it is directed at someone else with the expectation of receiving a command or being told what to do (Brown & Paolucci, 1979, p. 25). Instead, these practical problems have the following features (Brown & Paolucci, 1979; Hultgren & Wilkosz, 1986; Laster, 2008; Montgomery, 1999; Reid, 1979): They have to be solved; the bases on which decisions are made are ambiguous; some existing state of affairs must always be considered; they are unique in some way, existing in a particular time and context; they require choosing between competing goals and values; and the grounds for answering them lead us to suppose that the action taken will result in some desirable state of affairs.

Our review of the target articles revealed that the authors of 20 of the 33 had fully developed and implemented an understanding of the practical problems (Ban, Kim, & Lee, 2011; Chang & Yoo, 1994; Cho & Ahn, 2000; Choi & Chae, 2011; Kim & Chang, 2007; E. Kim & B. Cho, 2010; Y. Kim & J. Cho, 2010; Y. Kim & Y. Lee, 2010; Lee & Chae, 2008; Lee & Cho, 2011a, 2011b; Lee & Choi, 2011; Lee & Jang, 2010; Moon & Chae, 2001; Oh, Lee, & Lee, 2011; Park & Cho, 2010; Ryu, 2007a; Yoo *et al.*, 2000; Yoo & Lee, 2009; Yoo & Shin, 1997).

The remaining authors did not fully understand the nature of several aspects of the practical problems. First, several confused practical problems with theoretical or technical problems (Kang & Kim, 2010; Kim & Lee, 2009; H. Kim, Lee, & Y. Kim, 2004; Lee & Yang, 2010; Park & Cho, 2009; Ryu, 2007b; Yoon & Chae, 1998). Theoretical problems require explanation or description, avoid considering values, and not involve the particular situation in which the problem is to be solved (Hultgren & Wilkosz, 1986). The

following example of theoretical questions was drawn from target papers asking “What is the case?”: What should I do to know what genetically modified food is? (Kang & Kim, 2010).

Technical problems have the following features (Hultgren & Wilkosz, 1986; Montgomery, 1999): Primary emphasis is placed on the goal or product; only relevant resources, factors, or conditions are considered; and problems are solved through technical strategies. Examples of questions in our target papers included: What should I do to reduce food waste? (H. Kim, Lee, & Y. Kim, 2004; Ryu, 2007b); how should I prepare to become a parent? (Park & Cho, 2009). The problems are presented in a practical problem format (i.e., questions of “What should I do?”). However, they are addressed as technical “how-to” problems, such as how to reduce food waste, how to prepare for parenthood, and so on, and these problems are solved through technical strategies.

Several authors (Byun & Chae, 2002; Chae, 1999; M. Kim & H. Lee, 2010; Ryu, 2007b; Yoon & Chae, 1998) developed practical problems focusing on specific topics instead of broad concepts. Broad concepts are overarching ideas or words that can be connected to many other sub-concepts and are embedded in recurring concerns. For example, in home economics instruction, using a broader, more meaningful concept such as *relationships* rather than *dating*, students will lead students to look at building, maintaining, and ending relationships and then to compare and contrast specific types of relationships, such as parent-child, friendship, or romantic relationships. They will focus on the principles used to build relationships rather than simply look at the narrow topic of dating. In this way, students will learn how to build and maintain many different types of relationships throughout their lives (Hauxwell & Schmidt, 1999, p. 93).

Finally, some authors have presented practical problems with predetermined detailed conditions (Chae & Yoo, 2006; Chae, Yoo, & Park, 2007; Chae, Yoo, Park, & Lee, 2003; M. Kim & H. Lee, 2010; Ryu, 2007b). Perennial practical problems are value-related, meaning that the solution may require choices between competing goals and values (Reid, 1979). The solution may not be pre-defined or readily visible, and the value is often determined by answering the question “What should be done?” about the problem (Montgomery, 1999). However, some of our target papers presented practical problems with predetermined detailed

conditions, of which the following are good examples: How can you follow a healthy diet and avoid harmful foods? (Ryu, 2007b); how can clothing requirements take the values of LOHAS into account and use natural materials? (M. Kim & H. Lee, 2010). Predetermined detailed conditions in the examples are “avoiding harmful foods” and “using natural materials.”

When a teacher presents a practical problem with specific details, students miss an opportunity to establish a goal or a valued end, which is a major part of the practical reasoning process. As in Rhu’s example (2007b), even though other valued ends, such as “to have a healthy diet/having a balanced diet” exist, students do not need to think about what constitutes a healthy diet. Additionally, even though various alternative actions could be taken in relation to the practical problem, the predetermined detailed conditions prevent students from choosing any of these alternatives. Problems have to be solved only via the technical strategy of “avoiding harmful foods” because the valued end (i.e. ‘having a healthy diet’) is replaced by the specific goal of “avoiding harmful foods.”

We also examined whether the lesson plans and curriculum were developed with a full understanding of the practical reasoning process. “*Practical* means determining what to do with regard to a problem and *reasoning* means developing a thoughtful and reflective approach (Montgomery, 2003, p. 1).” A practical reasoning process for addressing problems includes considerations of valued ends (goals or a state of affairs conceptualized as desirable), contexts (interpretations of information about the context of the practical problem), alternatives (technological information about possible ways or strategies to reach goals), consequences (considerations of the consequences of specific acts), and actions (what to do, a conclusion reached by reasoning based on the aforementioned information) (Laster, 2008; Montgomery, 2003).

Except for the paper by Oh *et al.* (2010), which proposed a practical problem-focused curriculum framework, 32 of the 33 papers in this sub-category were examined. Of these, 12 papers (Chang & Yoo, 1994; Ban *et al.*, 2011; Chae, 1999; Cho & Ahn, 2000; Lee & Cho, 2011a, 2011b; Lee & Choi, 2010; Moon & Chae, 2001; Ryu, 2007a, 2007b; Yoo & Lee, 2009; Yoo, *et al.*, 2000) showed a full understanding of the practical reasoning process.

**Table 2.** Effects of Practical Reasoning Instruction and Experimental Class Hours

Major Effect	Author (year)	Class Hours
Problem solving	Ryu (2007a)	20
	Ryu (2007b)	16
	Yoo & Lee (2009)	6
	Lee & Yang (2010)	10
Critical thinking	Byun & Chae (2002)	1 semester
Decision making	Kim & Chang (2007)	8
	Chae (1999)	1 semester
Morality	Moon & Chae (2001)	30
	Chae, Yoo, Park, & Lee (2003)	15
	Ryu (2007b)	16
Self-esteem/Self-efficacy	Chae & Yoo (2006)	10
	Lee & Yang (2010)	10
Self-leadership	Kim & Lee (2009)	6
Environmental literacy	Lee & Choi (2011)	8
Views of home economics	Chae, Yoo, & Park (2007)	10
General effects (knowledge, attitudes, participation, interest)	Yoon & Chae (1998)	28
	Cho & Ahn (2000)	5
	Park & Cho (2009)	6
	Kim & Lee (2010)	10
	Lee & Cho (2011b)	5

The remaining 20 papers did not fully understand several aspects of the nature of the practical reasoning process: They substituted the practical reasoning process with asking reasoning questions; they omitted elements of the reasoning process; and they misunderstood each element of the reasoning process. These interrelated problems led to the failure to achieve the intended goals of a practical problem-focused curriculum. For instance, it was difficult for students to clarify a goal or the desired states of affairs, to examine the context, to search for possible means or strategies, to examine consequences of actions, and to make a reasoned judgment about the actions to take in relation to a particular practical problem.

For the papers on the implementation of practical reasoning instruction, we reviewed the types of educational effects of practical reasoning instruction that were measured. Authors tested the effects of practical reasoning instruction on problem solving, morality, critical thinking, decision making, self-esteem/self-efficacy, self-leadership, environmental literacy, views on home economics, and general learning effects (see Table 2). Most

studies on effectiveness used an experimental research design and neglected other methods, such as participatory observation and student interviews.

#### *Evaluation*

We examined three papers (Go & Yu, 2011; Kim & Chae, 2001; Lee & Yoo, 2008) to evaluate positive and negative aspects of practical problem-focused instruction.

Kim and Chae (2001) interviewed home economics teachers and reported that they experienced difficulties in designing a practical problem-focused curriculum and needed to share teaching materials and information with their colleagues. They reported that paper-and-pencil tests and performance assessments were rarely given in the course of instruction on practical reasoning. Lee and Yoo (2008) conducted a focus group and reported positive reactions from home economics teachers who had experience with the practical problem-focused curriculum. However, teachers experienced difficulties in designing the process of practical reasoning and clarifying the practical problem, which



is a first step of practical reasoning instruction. These difficulties included integrating a theory and practice of practical reasoning instruction, motivating students to be engaged in logical thinking and discussion, developing test questions for both formative and summative assessments. Go and Yu (2011) examined the perception and practice of practical problem-focused curriculum by survey and interview. They found that more than 90% of respondents thought that practical problem-focused curriculum was needed, but only 25% of home economics teachers were actually practicing it in their classroom. They found difficulties in carrying out a practical problem-focused curriculum that were similar to those noted by Lee and Yoo (2008).

In summary, three studies in this sub-category found a growing need for understanding the theory and background knowledge of the practical problem-focused curriculum and for establishing a network for sharing teaching materials and teaching experiences. At the same time, it was consistently mentioned that strategies for improving teachers' capacities for developing evaluation instruments and stimulating students' thinking skills are badly needed.

The development of evaluation instruments for practical problem-focused curriculum/practical reasoning instruction is highly significant. It is especially critical as the changes in the new curricula of 2007 and 2011 have already been applied. Therefore, research on student evaluation and development of evaluation instruments for problem solving, decision making, critical thinking, morality, creativity, and so on are urgently needed.

### Research on the Three Systems of Action

Research on the three systems of action (six articles) was divided into two sub-categories: Five articles on needs assessment of educational objectives and one article on the level of practice in the three systems of action areas (see Figure 1). The criteria for the former sub-category were "In what content areas are needs assessments of educational objectives performed?" and "What is the ranking of educational objectives regarding the three systems of action?"

Chae (1996b), Ryu, Chong, and Chae (1997), Yoo and Kim (1997), Lee and Cho (2005), and Oh and Chae (2005) attempted to analyze priorities among the educational objectives of home

economics education in relation to the three systems of action. Five articles on needs assessment of educational objectives analyzed different content areas in home economics.

According to the results of this needs assessment, the studies of Chae (1996b), Ryu, *et al.* (1997), and Oh and Chae (2005) showed high demand among teachers for the emancipatory system of action, whereas the studies of Yoo and Kim (1997), and Lee and Cho (2005) showed high demand for educational objectives related to the interpretive system of action. The results of the studies varied. We speculate that the inconsistent findings in this sub-category were caused by research instruments that reflected misunderstandings of interpretive systems of action. The interpretive system of action involves cooperative dialogue among family members to reach mutual understanding and agreement about what to do. The purpose of this dialogue is to understand the intended meanings of ideas, as well as to uncover and to interpret the intentions, attitudes, goals, and values of individuals and groups of people (Laster, 2008; Montgomery, 2008; Thorsbakken & Schield, 1999). However, some authors confused the interpretive system of action (authentic understanding of meaning) with the technical system of action (understanding scientific terms; i.e., the function of nutrients). Oh and Chae (2005) and Lee and Cho (2005) reported that teacher groups that were female, were younger, or had less teaching experience and those that had taken home economics education/philosophy courses had higher demands for educational objectives related to the emancipatory system of action.

We consider the attempts at studying the systems of action in relationship to educational objectives to be quite meaningful because there is a consensus on the significance of systems of action in family life as educational objectives. As a result of growing recognition of this fact, the MEST (2011) explicitly stated in the national home economics curriculum document a desire to adapt the systems of action for designing teaching-learning strategies that embody the practical nature of home economics.

Only one study (Choi & Yoo, 1998) belongs in the sub-category of studies considering the level of practice of the systems of action areas. This certainly limits the possibility of a qualitative meta-review. However, we reviewed this paper to illustrate this sub-category of studies on the three systems of action areas. The correlation between systems of action and higher levels of practice

was examined.

Our results showed that the overall level of practice of the three systems of action in family life was in the order of the emancipatory, technical, and interpretive systems of action. The level of practice was lowest for the interpretive system of action because the volume of content on this topic in Korean home economics textbooks is relatively small, and a number of teachers misunderstood the interpretive system of action, conflating it with communication skills as a part of the technical system of action.

## Conclusion and Discussion

This study examined 55 articles on the critical science paradigm, practical problem-focused curricula, and the three systems of action. A qualitative meta-review led to valuable results and implications that suggest a future direction for Korean home economics education, as detailed below.

Achievements in this research area have been encouraging. One positive finding of this study was that numerous empirical studies with experimental research design testing the effectiveness of a practical reasoning instruction have been conducted, and its effectiveness in enhancing various higher-order thinking skills has been shown to be statistically significant. Moreover, the authors themselves, as teachers, developed their own teaching materials and experimented with their effectiveness in practical reasoning instruction. Professors, acting as researchers, and classroom teachers, acting as practitioners, collaborated in trying to put theories into practice.

The positive results of these studies have led many home economics teachers and educators to adapt a CSP on home economics instruction as a new paradigm in Korea. The interest in and enthusiasm of Korean home economics researchers regarding critical science are growing rapidly. The most significant achievement is that the CSP was reflected in both the 2007 Revised (MEHRD, 2007) and 2011 Revised (MEST, 2011) Korean National Home Economics Curricula, which adapted concepts of practical problems, practical reasoning, and three systems of action. Considerable growth in the number of papers has occurred during the last 5 years, from four in 1992-1996 to 12 in 1997-2001, seven in 2002-2006, and 32 in 2007-2011. As 22 of the 33 articles in the

category of development/implementation were written after the announcement of the 2007 Revised Korean National Curriculum in February 2007, interest in this topic must be closely related to the revision of the national curriculum.

Along with the achievements, problems were also identified through the qualitative meta-review. Although recent themes of conferences, research topics, and needs assessments for pre-service and in-service programs indicate a growing demand for philosophical studies in the field of home economics education, there were fewer philosophical studies on the fundamental nature of the critical science paradigm or on the systems of action than on the practical problem-focused curriculum. Most of the articles on the development and implementation of an integrated theme relied heavily on Ohio's and Oregon's curriculum guides. Surprisingly, not even one of the 55 articles addressed student evaluation, despite the huge demand for evaluation in classroom practice. Considering the competitiveness of student evaluation by grades and test scores in the Korean educational systems, more studies on student evaluation are needed.

A portion of the authors of the articles reviewed showed a lack of comprehensive understanding of core concepts in the CSP, including the concepts of practice, practical problems, the practical reasoning process, and systems of action. Practice is often conceptualized from a technical perspective in the Korean home economics literature. The conceptualization of practice as praxis by a CSP, which leads to reasoned social action and empowerment, is proposed. It is not that a certain position is right or wrong; however, a discussion about which position is more justifiable in terms of the future of Korean home economics education is needed. Of the several patterns underlying the misunderstanding of practical problems, the confusion between practical and theoretical or technical problems is most typical. This confusion tends to prevent home economics from being taught from a practical perspective. The review showed that the articles not only partially omitted elements of the practical reasoning process but also misunderstood each element of this process. As Korean home economists' are unfamiliar with the concept of three systems of action, clarification of this concept is most urgently needed, particularly with regard to interpretive systems of action. The primary reason for this confusion and/or misunderstanding is rooted in our indiscriminate

adaptation of a CSP from examples drawn from Ohio's and Oregon's curricula in the absence of grounding them in a sound theoretical foundation.

For a CSP in home economics education to be genuinely accepted and advanced in Korea, we must engage in an ongoing effort to build a well-planned support system for a national curriculum that rests on a sound philosophical foundation that operates in the context of integrated and ongoing teacher education designed to yield congruent classroom practices. Suggestions for the future direction of Korean home economics education as a critical science drawn from the results and implications of this study follow.

In a move that represents a most remarkable achievement, the Korean national home economics curriculum adapted a CSP in 2007 and 2009. However, the successful implementation of this critical science program requires support systems that provide more specific information on a CSP and textbook accreditation standards. Such supplementary systems will play a future role in determining which textbooks based on a CSP will be published.

Even though interest in the critical science paradigm is high in Korea, too few researchers are specializing in this field. A considerable number of studies are based on the critical science paradigm, but such research efforts are concentrated at the Master's level and in a few graduate schools. In terms of the theoretical and philosophical bases for a CSP, we highly recommend that philosophy courses or curriculum content on the critical science paradigm be included in teacher education programs, particularly in graduate programs. This will eventually contribute to the development of the philosophical grounds for and an enduring understanding of a CSP in home economics education.

We were very aware of the growing interest in and enthusiasm among Korean home economics teachers for applying a practical reasoning teaching-learning method in home economics instruction. However it was difficult for these teachers to apply this perspective because the curriculum was not developed with practical problems and a practical reasoning instructional approach in mind. Indeed, this approach differs substantially from a typical lecturing method. Therefore, we suggest that teaching materials and curriculum resource guides suited for Korean students be fully developed as a first step. As a second step, the development

of professional competence with regard to designing, developing, and re-organizing curricula and implementing a CSP in classrooms must be cultivated through both pre-service and in-service programs for teachers. This will enable home economics teachers to not simply borrow foreign curriculum models.

The prospect of the future of the home economics education field from the CSP is promising. This study focused on the strengths and weaknesses of home economics education as a critical science from a perspective rooted in the needs of Korean society. We suggest that future studies examine the opportunities and threats deriving from external educational influences.

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