Enhancing Interdisciplinary Communication: Collaborative Engaged Research on Food Systems for Health and Well-Being

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Collaborative engaged research (CER) depends on and enhances communication with decision makers across disciplines. CER for sustainability of food systems to enhance health and well-being is conducted by interdisciplinary team members, including family and community food systems stakeholders, practitioners, and academic researchers. The CER members are leaders in food decision making. Complex and multifaceted, CER facilitates dynamic communication patterns and develops interactions among the members, with external stakeholders, and within families and communities for collective decision making. This chapter discusses CER as applied in food systems and health research and practice, and describes two cases—one focused on family food decision making, and the other on community food decision making. It concludes with an analysis of challenges, guidelines for applying CER methodology, and opportunities for further development.

Introduction

It is well established that communication across academic disciplines is complex and time-consuming. In the context of the emerging field of food systems for health, achieving productive communication is further complicated by the need to incorporate multiple community stakeholders in the process. For the theory and practice of community-based food systems to grow, new strategies must evolve that address these inherent communication challenges and opportunities. Development of the CER approach has begun to tackle this challenge. CER is an asset-based approach (i.e., it identifies and builds on strengths and resources rather than focusing on problem solving) that engages food systems stakeholders, local practitioners, and researchers in a collective decision-making process. It requires a high level of communication competence to support that process. CER addresses the roles of both information flow and food decision making in mediating the impact of community food systems on health and well-being. After introducing food decision-making research and cross-perspective communication for CER, we describe the CER methodology and two CER case studies. We discuss findings, from these and other CER cases, and opportunities for continued development of CER methodology. Finally, we conclude with guidelines for fostering communication competence and summarize CER as an alternative approach to understanding and facilitating systems and behavioral change to improve public health and family and community well-being.

Food Systems for Health and Well-Being

Food is essential for survival; it is not only the key source of our nutrition but also a source of pleasure and recreation. It is often a part of building and maintaining relationships—creating a context for socialization

and interpersonal communication. Food consumption, including acquisition, preparation, eating, and disposal, can be a major topic in daily communication, as can debate at all scales up to national and international food or natural resources policy. Food systems are inherently complex, embedded in social and biophysical ecosystems with related cause-and-effect relationships (Gillespie & Gillespie, 2007). Food production, for example, can both contribute to and be impacted by climate change. Thus, food systems are best understood from multidisciplinary and multisectoral[1] perspectives.

Considered the primary food decision-making unit, a family is defined as any configuration of people who regularly eat together or eat from the same household food resources and who mutually influence decisions about their food. Families typically collaborate to make decisions about purchasing and preparing food and may also discuss issues related to nutrition and diet. Families interact at the community level with institutions that offer food, health care, education, and transportation. Community food systems, made up of farmers, consumer markets, retailers, distributors, processors, and other institutions and businesses, are collaborations with communication patterns that have evolved over centuries in North America. Community food decision makers, such as school nutritionists, planners, emergency food assistance program staff, and even supermarket managers, determine what foods are "practically available" to families (Gillespie & Gillespie, 2007). Thus, beyond the family and within the community context, the discourse around food becomes even more complex.

Community food systems, in turn, are shaped by national and global food systems, which are themselves shaped in large measure by national government and trade policy. Researchers from a broad range of disciplines and perspectives are contributing to understanding (1) the societal and natural impacts on food systems and (2) the potential for food systems research to contribute to community development, sustainability, biodiversity, land use, climate change, and more. More and more, these two perspectives must come together to create systems change and, thus, decision-making processes that engage or at least influence multiple stakeholders in communities.

Communication for collective decision making is complex, in part because of the complexity of food systems, eating behaviors, and variations in stakeholders' perspectives or worldviews. CER learning teams reflect this complexity. In addition to researchers, they include *change agents* and *connectors* who can represent a wide range of perspectives. Change agents may be educators but also include a broad spectrum of individuals and organizations working to change individual behavior as well as social and biophysical systems (family, community, and beyond). Connectors are people who bring together team members with common interests and facilitate communication to integrate multiple perspectives. Contrary to popular practice, participants in a learning team are not expected to "represent" their organization or "kind" but, rather, to bring their own perspectives—shared in part with their organization or kind—into genuine dialogue.

Cross-Perspective Communication and CER

"Cross-perspectives refers to the notion that individual 'frames of reference,' and perspective[s], are inevitable

and lead to different 'stories' and different 'social realities' about what would on the surface appear to be the same thing" (G. Gillespie, personal communication, July 12, 2012). Starting from this position, we focus on cross-perspective communication, which includes communication across disciplines, sectors, and dimensions of food systems.

The CER approach integrates principles and practices of appreciative inquiry (AI; Watkins, Mohr, & Kelly, 2011) and open space technology (OST; Owen, 1997) to create a context for transparent communication, transformative learning (Taylor, 2000), and establishing communication competence (Thompson, 2009). A pattern of egalitarian communication, the dyadic dialogue method (DDM),[2] which involves two individuals taking turns as leader and respondent, is introduced. Together with AI, DDM can build and strengthen trusting relationships among CER members and further advance the CER approach.

CER methodology not only opens doors inviting those from various disciplines to (re)consider their expectations on "the same thing" but also facilitates achieving "the same thing" effectively. The CER methodology guides the generation of change initiatives and the formation of CER learning teams as change initiatives are generated. In the Food Decision-Making (FDM) Program, initiatives for change include those for engaging in community improvement; for being supported by sustainable, just, and equitable community food systems; for developing healthy attitudes toward food and eating; for making thoughtful food decisions; and for helping each individual align his or her behaviors with personal understandings, goals, and current scientific knowledge.[3]

The following sections offer a window into the evolution of CER communication for food systems research and practice by the FDM Program. The two cases discussed give a sense of both how the CER methodology has been applied and how it is evolving.

Collaborative Engaged Research

Adding practitioners and community stakeholders to multidisciplinary research teams multiplies the challenges but also the opportunities of such research. In particular, it creates opportunities for changing communication processes that help build community capacity. The CER approach connects community food decision makers with external resources to create a vision and accompanying strategies that build on community assets. CER helps cultivate thoughtful food decision making and create a culture of cooperation and communication competence. The methodology is based on findings from CER projects led by FDM teams, communication with informants, and innovative communication and education approaches.

The Cross-Disciplinary Communication Perspective in Nutrition

The initial application of communication theory to community nutrition and nutrition education[4] was built on the work of communication scholars at Iowa State University, notably Paul Yarbrough (1981) and associates.

Developers of the nutrition communication model (Gillespie & Yarbrough, 1984) recognized that, although mass media were more cost-effective information channels, interpersonal or relational communication was superior for changing behavior in food and nutrition education. Although the communication approach for CER has shifted from persuasive communication (Gillespie & Yarbrough, 1984) to communicative exchange, where each participant is a communicator as well as a receiver, the same theoretical underpinnings remain, including the following:

1. *Individual differences:* Different people respond differently to the same message, and a person responds differently to different messages (Hovland & Janis, 1959; Katz & Lazarsfeld, 1964; Lazarsfeld, 1949). Such predispositions are based on relationships with others, understanding, knowledge, and attitudes about what is considered food, acquiring food, its preparation, the way it is served and consumed, and eating contexts.

2. *Social status–based roles:* These influence responses by affecting predispositions and situations. For example, the role "mother" suggests certain food-preparation responsibilities.

3. *Social relations:* The social relations perspective (Katz & Lazarsfeld, 1964; Rogers, 1983) sees people as socially organized and membership in groups as influencing their responses to mass communications and adoption and diffusion of innovative approaches.

4. *Metacommunication:* Watzlawick, Bavelas, and Jackson (1967) introduced the notion of metacommunication, "communication *about* communication." They proposed that "communication dysfunction is more likely to occur because of the disagreement over the rules than over the manifest content" (p. 10). For example, when a program attempts to include fathers in considering food and eating practices, it may break down if the father does not believe that this is part of his parental role. For a description of these theories and the nutrition communication model, see Gillespie and Yarbrough (1984). Watzlawick and colleagues' work has been developed by other scholars and informs the current work in relational communication (Keyton, 1999). The CER process presented in the following pages embraces relational communication in groups.[5]

Influenced by these communication perspectives, CER presupposes that (1) humans are inherently good and seek community; (2) as members of society, people jointly construct a shared understanding of "reality" (social constructionism); (3) people actively interact with their environment in making decisions based on their understandings of reality (agency and free will); and (4) in addition to increasing the scientific understanding of change, research can and should facilitate social change.

Cross-Perspective Communication for CER: Dynamics and Challenges

Engagement in CER means developing communication competence for colearning, collective decision making, and cocreating a sustainable world in which people are nourished and nurtured. While the CER approach shares some processes and perspectives with intervention science, community-based participatory research, participatory action research, and other participatory methods (Greenwood & Levin, 1998; Israel et

al., 2003), it is characterized by a family and community development perspective that builds on assets and aspirations and identifies opportunities, in contrast to approaches that address problems to be solved.
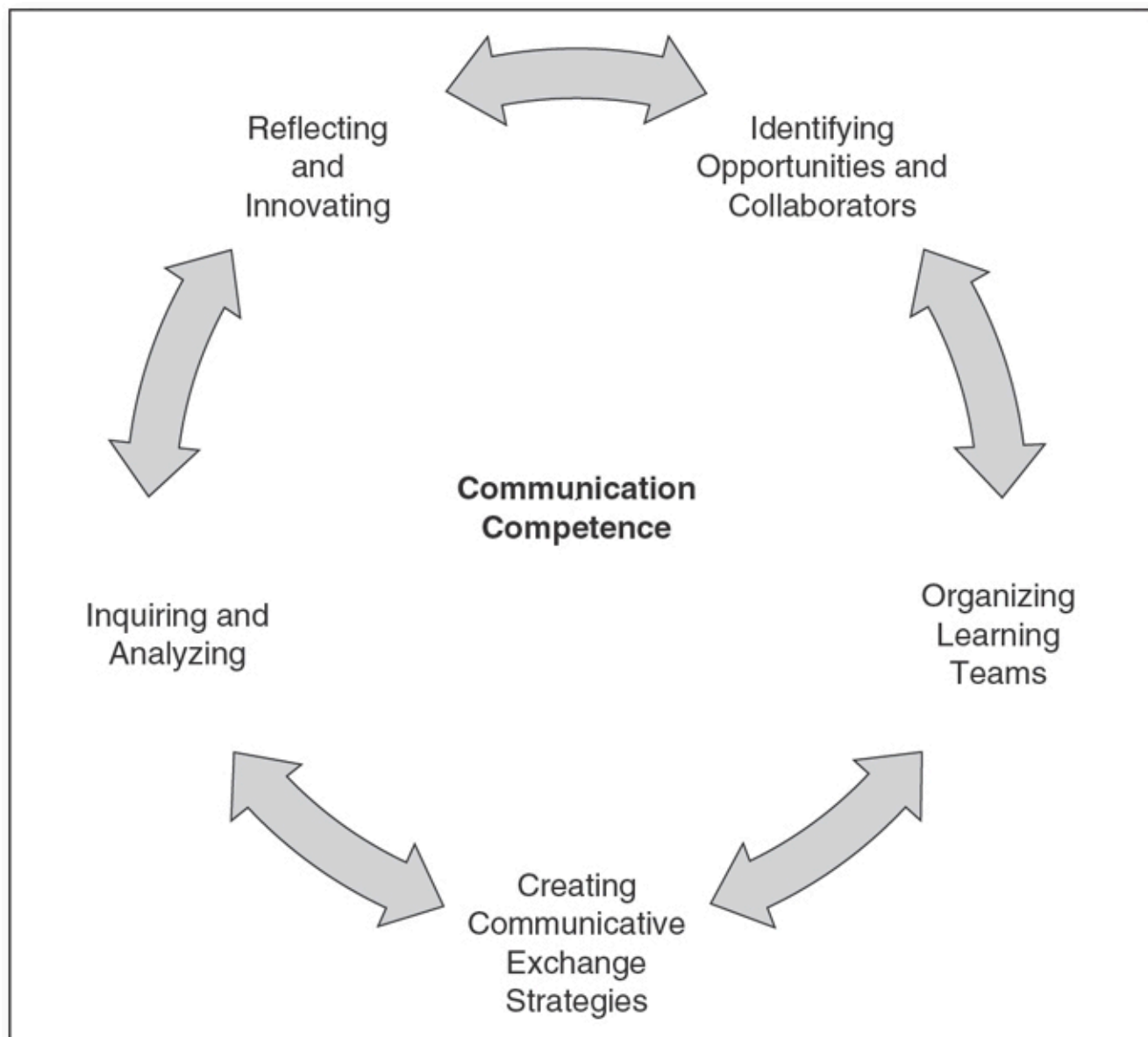
Part of identifying opportunities and collaborators is assessing whether the CER approach or an alternative approach best fits the particular situation. Each initiative is unique, and thus each team should seek an appropriate balance in priorities and processes that engage team members' and participating organizations' strengths and assets to create a context in which innovation thrives. The CER approach requires a considerable commitment of time and energy for engagement from all participants. The guidelines for engagement are that

1. the primary goal is to build family and community capacity for thoughtful food decision making, resulting in sustained change;
2. research, education, and action are integrated, and the CER team shares responsibility for integration, decision making, and communicative exchange across perspectives;
3. emerging research findings influence practice and change initiatives; and
4. the CER approach is self-renewing through ongoing analysis, reflection, and evaluation.

By focusing on opportunities when considering individual and collective strengths and family and community assets and aspirations, the group moves in a positive direction. The CER methodology as summarized next serves as a guide for cross-perspective teams as they consider a CER approach.

The CER Methodology

Figure 8.1 depicts the CER methodology as a continuous loop. The components of the process are identifying opportunities and collaborators, organizing CER learning teams, creating communicative exchange strategies, inquiring and analyzing, and reflecting and innovating. As the process continues cycling, findings from a particular initiative are not the end but rather the beginning of another cycle of inquiry and innovation. Reflection, on an individual and collective basis, about changing meanings and mind-sets and thinking creatively about *what could be* moves the process toward realizing individual and collective aspirations. This process is bidirectional, as sometimes it is useful to go back to previous stages within a cycle. Furthermore, as the process continues cycling, the outcomes expand by building on the previous cycle.

Figure 8.1 CER Process

Reflecting and Innovating — Identifying Opportunities and Collaborators — Communication Competence — Organizing Learning Teams — Creating Communicative Exchange Strategies — Inquiring and Analyzing

Identifying Opportunities and Collaborators

Opportunities to collaborate may come out of strategic planning in which common and/or complementary goals are identified. Opportunities may also be identified as an outcome of previous projects, through existing collaborations, or from identified needs. Initiators may come from stakeholder groups, researchers, or practitioners. Part of identifying opportunities is garnering existing resources or acquiring new resources. Things to keep in mind when making decisions about proposed projects, members of the CER team, and funding sources include (1) compatibility among potential collaborators' values and principles of collaboration and about change strategies; (2) the relative priority of building capacity for sustainability and achieving shorter term, project-specific outcomes; and (3) the level of dependency on external funding and associated constraints.

These considerations often involve trade-offs—either among project priorities or among collaborating organizations' and/or funders' priorities. Differences in approaches and/or principles need to be resolved to reduce the risk of conflict as the project unfolds.

Organizing CER Learning Teams

CER teams form around common and complementary goals. Their aims are to (1) explore opportunities for improving the sustainability of food systems for health and well-being; (2) develop integrated research and practice agendas based on family and community priorities as well as research and intervention agendas; and (3) collaborate in data collection, analysis, interpretation, and application (Gillespie & Gillespie, 2006).

A foundational element of CER is engaging in genuine dialogue for colearning and cocreating. "The discipline of team learning starts with 'dialogue,' the capacity of members of the team to suspend assumptions and enter into a genuine 'thinking together. '… The discipline of dialogue also involves learning how to recognize the patterns of interaction in teams that undermine learning" (Senge, 1990, p. 10). Genuine dialogue fosters colearning, improves relational communication competence, and enhances collaborative practice for cocreating a sustainable world. Learning teams practice new techniques in a safe environment while sharing credit and risk, expanding human potential, and challenging each other on the road to discovery.

Through colearning, CER teams can construct their reality and create a preferred future within the limits imposed by social and biophysical system constraints. This strategy enhances opportunities for developing integrated research and practice agendas based on community priorities as well as external research and intervention agendas.

Creating Communicative Exchange Strategies

Communicative exchange strategies emphasize the role of relational as well as instrumental components of communication for creating a culture in which CER participants can engage in collaborative communication.

CER draws on work about relational communication in groups (Keyton, 1999) and metacommunication (Watzlawick et al., 1967) to facilitate collaboration and development of a shared vision and to foster communication competence. The communication process involves creating trusting interpersonal and interorganizational relationships and balancing and blending ways of thinking (mind-sets and perspectives; Gillespie, Ganter, Craig, Dischner, & Lansing, 2003). This relational component of communication complements the instrumental component of communication that focuses on issues such as developing protocols, the committing of necessary internal resources, identification of external funding sources as needed, and developing the CER plan.

Inquiring and Analyzing

CER employs an asset-based approach to inquire about aspirations. That is, it asks what features are in place to support movement toward these aspirations and what underutilized resources might be invested

to speed this movement. Gillespie (2010) articulated three questions to be addressed in collective decision making about community food systems: *What do we want? What are our options? How do we decide among these?* Since CER teams can construct their own forward-looking reality, not just identify problems to be solved, these three questions are addressed by beginning with an *inquiry about what is*—what is in place that is working to advance sustainability of the food system and to support health and well-being—and then *analyzing what could be.*

By focusing on opportunities when considering individual and collective strengths and assets, the CER teams can move in a positive direction. This asset/strength-based inquiry identifies underutilized resources that could be invested to create community capital. Each of the seven types of community capital—human, social, cultural, natural, built, financial, and political—is relevant to food decision making (Flora & Gillespie, 2009). The community capital framework provides a way of assessing assets and the interchange among the types of capital. Through this interchange, multiple capitals may be increased, leading to a spiraling-up effect (Emery & Flora, 2006). This assessment provides a basis for collective decision making about priorities, trade-offs, and interrelationships within food systems.

Reflecting and Innovating

Senge, Kleiner, Roberts, Ross, and Smith (1994) suggest that individual and group reflection offers the opportunity for engaging in genuine dialogue, "the capacity of members of a team to suspend assumptions and enter into a genuine thinking together" (p. 10). Team members often bring different perspectives to the dialogue. When these perspectives bump up against each other and/or overlap at the edges *and* minds are open to rethinking and gaining new perspectives, the context is ripe for innovation. Barker (2008) describes this as "innovation at the verge of differences" (p. 155). He posits that thinking on the verge occurs more commonly at the fringes of established disciplines and organizational cultures in the work of those less constrained by these traditions. The innovative communication generated by CER reflects and fosters the cogeneration of theory and advances methodology.

Discovering Effective Cross-Perspective Communication Methods and Strategies

The two case studies presented here illustrate the application of the CER methodology to a family food decision-making project and a community food decision-making project. We describe the projects according to each element of the CER methodology as described earlier, followed by a discussion of the projects' communication dynamics and challenges. The CER teams in both cases included members from multiple perspectives (henceforth referred to as cross-perspective CER teams), and so these cases further our understanding of cross-perspective communication.

Case Study #1: Cooking Together for Family Meals

Cooking Together for Family Meals (CTFM) is an innovative childhood obesity prevention project for children and their families based on CER. It is a series of six weekly classes designed to help middle-school children and their parents work together to prepare quick, healthy, and low-cost vegetable-rich meals and enjoy eating them together. These hands-on classes focus on adding a variety of vegetables such as dark leafy greens, winter squashes, cruciferous vegetables, and beans to family meals. All participants develop cooking and food safety skills, and parents gain confidence in their children's abilities to help with food preparation. These classes enable children to take on new roles in family food decision making and preparation and help families develop more positive child–parent relationships involving food-related activities as the family also improves its communication competence.

The long-term goals for the program developed by a cross-perspective CER learning team were to (1) reduce the risk of childhood obesity by increasing appreciation, accessibility, and consumption of vegetables typically underused in family diets, and (2) experiment with and advance CER methodology and food decision-making communication competence.[6] Cornell Cooperative Extension (CCE) educators and Cornell University Division of Nutritional Sciences faculty and dietetic interns worked with children and their families to develop this pilot nutrition education and cooking program and inquire about family food decision making. Concurrently, the project leaders applied CER principles and strategies as they advanced the food decision-making CER communication process and methodology.

Identifying Opportunities and Collaborators

CTFM was initiated by CCE community nutritionists in the Finger Lakes region of New York to address the needs of children and their families. Through their experiences with nutrition education for families, they made the following observations:

1. Nutrition program participants lacked knowledge and skills in vegetable preparation.
2. Parents' food decision-making behaviors could affect their child's dietary risk factors for obesity.
3. There were no CCE nutrition programs targeting parents and their children together.

These observations suggested an opportunity for a new initiative that supported families in learning together with fewer constraints than the current CCE nutrition education models presented.

The CCE nutrition educators who initiated the program invited university faculty members leading the youth nutrition program and the food decision-making program to partner in a CER initiative to reduce the risk of childhood obesity by increasing vegetable consumption. This expanded team developed a proposal based on these presuppositions:

- Parents want to increase consumption of vegetables by their children but are constrained by limited availability (practically available in convenient retail markets), accessibility (cost, transportation, food preparation skills), and appreciation (preferences based on flavors, familiarity, and cultural

meanings).

- Knowledge about vegetables and recipes will lead to healthier and more varied food choices.
- Understanding and responding to individual differences among participants will improve program effectiveness.
- Replacing caloric-dense foods in family meals and encouraging eating routines with vegetables would contribute to healthy weights of children and their families.
- Improved food decision making about both processes and outcomes would nourish and nurture children now and for succeeding generations.

Organizing the CER Learning Team

The initiators[7] invited other extension nutritionists to join the team to develop a project proposal for classes for children and their parents learning together, including cooking and food safety skills, preparation methods for vegetables and dried beans, and ways to include vegetables in family meals. Because of the long-term goal of improving availability and accessibility of vegetables within the community food system, the proposal explicitly included families across the income spectrum.

A grant proposal for internal funding from the institution was developed by the county extension nutritionists in collaboration with faculty members on the team. The 3-year pilot project was funded by CCE administration and included staff from five counties in upstate New York: Kathleen Dischner and Cheryl Neal (Onondaga); Christine Gutelius and Rebecca Crawford (Cayuga); Helen Howard and Tina Foster (Tompkins); Loree Symonds and Jonathan Sterlace (Steuben); Paddy Redihan and Melissa Clary (Schuyler); and Holly Gump (Food and Nutrition Education in Communities, Finger Lakes Nutrition Region). Over the course of the 3 years, there was some turnover of staff, which changed the composition of the CER team and resulted in an increase in the number of perspectives and insights generated by the team and provided fertile ground for adopting CER perspectives and applying CER principles. The CER team members all contributed to CTFM program development, evaluation, and research. Additionally, learning team members created alliances with community organizations and agencies within each of their communities.

The team agreed on a systems approach with thoughtful reflection about collaboration and communication. They also created an atmosphere of trust using humor and an appreciation of others' contributions to learning and cocreation. The group developed protocols for communication at face-to-face meetings and by e-mail and telephone. The team members acknowledged the potential for conflict among team members with different goals. This diversity of approach was accepted, and team members worked together to develop a self-sustaining, family-responsive program. The learning team met periodically over the 3 years of development and testing of the curriculum and CER communication methodology.

The communication processes for food decision making of interest in this project were interactions among family members, between family members and change agents, and among CER team members. Primary theoretical perspectives involved individual differences, social roles and categories, and the notion of metacommunication as described above.

The CER team engaged in collaborative communication and decision making to develop an approach that would balance the multiple goals and priorities of families, practitioners, evaluators, and researchers. Based on relationships of trust, respect, and camaraderie developed in previous collective decision-making experiences, the initiators advanced their communication competence for collective decision making and expanded this colearning to new members of the CER team.

Figure 8.2 provides an overview of the communication events during the program development and testing.
Figure 8.2 Project Timeline of Communication Events for the CTFM Project
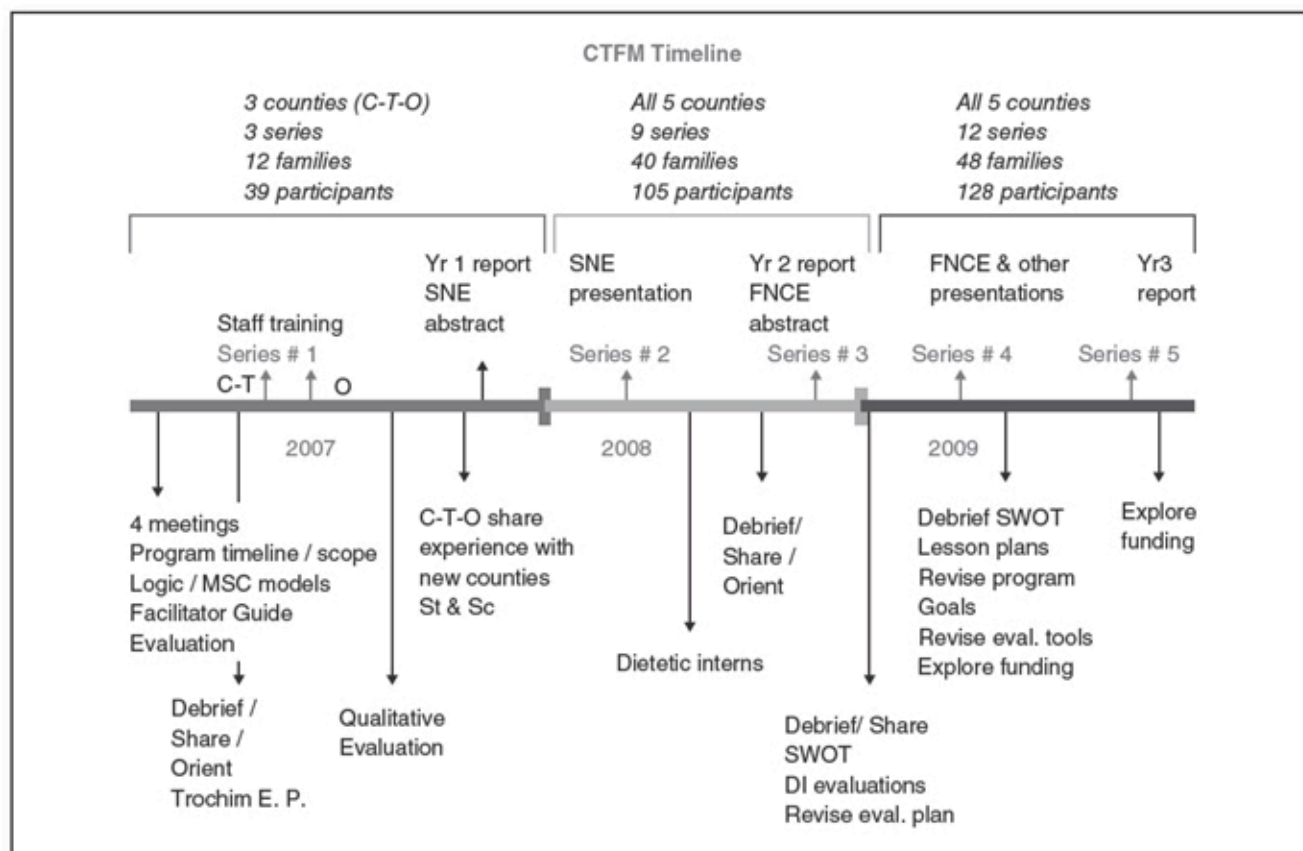
MSC = *Most significant change* is an evaluation approach in which significant changes that may or may not have been planned are identified and followed throughout the program. In CTFM, this was only minimally useful for the overall evaluation.

C = Cayuga County, T = Tompkins County, O = Onondaga County, New York

Trochim = Bill Trochim, professor, Cornell University, and evaluation consultant for this project

SNE = Society for Nutrition Education; later added *behavior*, so currently SNEB

SWOT = Strengths, weaknesses, opportunities, threats identified by the CER team

FNCE = Food and Nutrition Conference and Expo 2011 of the American Dietetics Association (since renamed

Academy of Nutrition and Dietetics)

Some aspects of the CER approach emerging from the application of these theoretical perspectives and associated worldviews challenged the culture and approaches of the CCE system and its gatekeepers.

Inquiring and Analyzing

The team proposed the following questions for consideration using the CER methodology: What is happening? Why is it happening? How can we share it? What are we learning? And, as the project progressed, Why is everyone involved (children, parents, facilitators, CER team, volunteers, collaborating organizations) so enthusiastic about the program process? Multiple methods involving multiple team members were used to address these questions: a survey of participants, follow-up phone interviews, participant observation, and strategies to identify most significant change. At the completion of the program, families reflected on and reported changes in a post–pre–evaluation questionnaire that asked first what they were doing or thinking at the end of the program and then what they remembered doing or thinking before participating in the program. Although this approach is considered by some researchers as less rigorous than a pre-post design, it is advantageous for engaging participants in reflection about their own family's changes and intentions. It is also less burdensome on participants than completing surveys twice, as with pre-post designs (see "challenges" below for a discussion of the impact of research and evaluation designs on program effectiveness).

Following the completion of the 3-year project and follow-up, CER learning team members were interviewed for their perspectives on the CER methodology. Participating families who had completed the program at various times over the previous 4 years were gathered to reflect on their experiences; parents and children reported that memorable parts of the program included working with their family members, interacting with other families, and the good food. The children were now actively involved in family food decision making and food acquisition and preparation. Some families began eating meals together, which provided another context for family communication.

The team discovered that the structured yet flexible class routine was welcome in the chaotic lives of most families (particularly as it related to food and eating practices). The informal communication between children and their parents, with other families, and with class facilitators provided time and safe space for discussing parental concerns such as the weight of their child or eating issues.

The classes fostered teamwork and colearning within and among families and between families and change agents. There was also evidence that colearning and increased communication competence for thoughtful food decision making carried over to the home environment. For example, one mom reported: "Grocery shopping has become more interesting (and takes longer!), since we are reading more labels and discovering new veggies!" Another mother reported, "I enjoy cooking with my child now—I can't believe I am saying this!" and another, "My kids are helping more in the kitchen." Two children who had been part of the CTFM classes demonstrated "how to prepare fruits and vegetables to children in a Head Start class." One participant

wrote: "What I enjoyed most was our instructor. She helped us out so much and she was a great teacher for someone like me to understand who never cooks. The whole class was great!"

Reflecting and Innovating

By means of periodic meetings during the program development and evaluation process, the learning team reflected on what they were learning about CER, family communication with program leaders, and communication with each other. Facilitators/educators appreciated the flexibility of implementation and evolution of the curriculum as the pilot testing progressed. The CER team discussed ways the curriculum, including the leaders guide, could provide guidance for adapting lesson plans to respond to participant needs, or the particular group dynamics, and the setting for the class. The team decided that since the program is complex and interactive, rather than organizing the curriculum linearly, they would include a set of elements to assist program leaders and facilitators in designing, educating, and communicating strategies for a particular group of families and class-specific dynamics. Finally, the "flexible routine" of the classes was appreciated by facilitators as well as participants; some families reported that they carried this approach into their family food and eating routines.

Case Study #2: Leveraging the Locavore Movement: Exploring Family and Community Food Decision Making

The second case study illustrates community food decision making and its interaction with family food decision making in the context of increasing the availability, accessibility, and appreciation of locally harvested wild fish and game. This project provides an example of bringing together multiple perspectives on community food systems from within the community as well as from multiple disciplines. The first year of the 3-year project has been completed.

Identifying Opportunities

The idea for a project to connect hunters and fishers with local food advocates and families struggling to feed their children came out of a conversation over breakfast between a county-based extension nutritionist (Moira Tidball) and her husband (Keith Tidball), a senior extension associate in natural resources at the university. They identified potential for improving food security by increasing wild fish and game consumption, in turn influencing the recruitment and retention of hunters and anglers, and increasing the appreciation of fish and game as sources of protein in the local diet. Both K. and M. Tidball hunt and fish themselves and are well connected to the local hunting and fishing scene in Seneca County, New York, the site of the project. M. Tidball also teaches classes on safe preparation of wild fish and game, manages the Wild Harvest Table website (http://senecawildharvest.blogspot.com/), and teaches nutrition to low-income audiences. Thus, each represented community stakeholders and lived and worked in the county.

The working hypothesis is that consumption of wild fish and game plays a limited role in the diets of

New Yorkers due to a number of "barriers to consumption." The potential barriers identified by previous research and practice include cultural norms of what is considered "food," lack of available official information concerning nutritional content of relevant species, negative stereotypes regarding fish and game taste and quality, and limited information about, experience with, and access to fish and game procurement, processing, and preparation.

Three methods designed to assess barriers and opportunities include

1. interviews with extension community nutritionists engaged with families,
2. an open community workshop with the three stakeholder groups (fishers and hunters, "locavores,"[8] and low-income families), and
3. interviews with the three stakeholder groups.

Organizing the CER Learning Team

To develop a CER team to improve the availability, accessibility, and appreciation of fish and game as sources of protein in the local diet, the Tidballs connected with Cornell researchers in natural resources (Paul Curtis) and the food decision-making program (Ardyth Gillespie), who were selected based on their work with natural resource and food system stakeholders in New York counties. The project leaders framed their project within the context of family and community food decision making and proposed a pilot project to engage individuals and families from the three stakeholder groups in a community workshop to discuss perspectives and opportunities to expand hunting and fishing as a recreational activity as well as the potential for making it more accessible to others in the local community. With the exception of Gillespie, the learning team had worked together on previous projects to further the goals of the Wild Harvest Table extension program and associated research projects.

Connections were made with faculty from other institutions (Iowa State University and the Pennsylvania State University) and state and federal agencies (New York Department of Natural Resources and the U.S. Department of Agriculture) interested in expanding fishing and hunting and the use of wild fish and game, and/ or decision-making processes within families and communities. As the project has progressed, others who learned about the project through various communication networks have offered ideas and/or assistance, for example adding specific expertise and perspectives to the workshop.

Developing Communication Processes

Members of the CER learning team were experienced with cross-disciplinary and cross-sector research and its application in extension programming. The team held several face-to-face sessions to discuss CER, their perspectives on research and practice, and their integration. A high level of communication competence for collective decision making facilitated moving through the elements in the CER framework. It also provided a basis for developing a workshop for members of the three targeted food system stakeholders (fishers and hunters, locavores, and low-income families) as part of the second phase of the project. Based on these

discussions, the objectives of the project, integrating natural resource education goals and food decision-making project goals, were identified. They are as follows:

1. Determine the importance of wild fish and game consumption to food security in rural local New York State communities
2. Evaluate why people are motivated to eat, or not eat, wild fish and game
3. Examine the importance of nutritional analysis for wild fish and game, and the way this information influences consumer choices
4. Determine how people acquire and adopt information about processing and preparing wild fish and game

To meet these objectives, during the first year of this 3-year project, three major tasks were undertaken:

- The team assisted M. Tidball in developing questions for semistructured interviews with 10 community nutrition practitioners to determine from their experience with families the contribution of fish and game to food security (Phase 1).
- M. Tidball orchestrated a time-sensitive collaboration among fishers and hunters to obtain, prepare, and transfer samples to the USDA and Penn State laboratories for nutritional analysis. Three wild species commonly harvested and consumed in the eastern United States (Canada goose, ruffed grouse, and brook trout) were analyzed to create a standard nutrition label for each species (Phase 2).
- The team developed and implemented an open space workshop using findings from Phase 1 to guide a discussion among workshop participants, facilitated by Gillespie and Flora (Phase 2).

Inquiring and Analyzing

The interviews conducted by M. Tidball (objectives 1 and 2) formed the first part of the inquiry into the contribution of fish and game to food security for the stakeholder group of low-income families. The rest of the team assisted with developing the interview questions and analyzing the interviews.

Building on what we learned from these interviews, the specific objectives for the workshop were to begin to discover the goals and aspirations for each stakeholder group, identify resources that might be invested by the community to promote these goals, and consider next steps.

The leaders recognized the importance of creating safe space for conversation among these diverse groups in the workshop setting. The initial idea was to hold it at a local hunting club with a chef who could prepare wild fish and game. However, it was decided that this location might be intimidating for the other two target groups, and so a local firehouse was secured. A chef new to preparing game and wild fish was secured. He shared his positive experience (as well as delicious food) with the workshop participants and acknowledged the expert assistance and coaching of M. Tidball. Some participants expressed interest in attending the next workshop that M. Tidball was offering. Additionally, the project leaders were called into service to help with

the food preparation and so got some hands-on experience as well.

Careful consideration was given to what might enhance or constrain open communication. For example, although state representatives of fish and wildlife agencies were an essential part of the conversation, they were asked to represent themselves as hunters and downplay their government role by wearing their hunting clothes rather than their uniforms. This worked well, as they blended into the workshop activities and then posed "what if" questions about making wild fish and game available in retail outlets for the group to consider. This issue was based on themes that had just been reported by the small groups and sparked an open discussion that revealed differing perspectives on the potential sale of wild fish and game—whether it is a good idea to make it more accessible or whether it would cause hunting for profit and destroy the rich wildlife in the community. One result of this conversation on challenges and opportunities was an initial proposal by K. Tidball to consider a state-managed program for the sale of venison, logistically similar to venison donation programs but steering some venison to the high-end meat market, the proceeds of which would be returned to habitat management rather than hunters' pockets. This proposal is currently under discussion by game management professionals in the state. The participant evaluations also indicated an interest in volunteering to help the community move these ideas into action.

Reflecting and Innovating

Individual and team reflection throughout the proposal development and first year of the project has led to an innovative integration of the two disciplinary perspectives and between extension education and academic research. The team successfully navigated a serious challenge to the concept of integration of research with practice when the funding decision makers required that the original CER proposal be split into two proposals (with no additional funding)—one for research and one for extension education. Although they were funded separately, the CER methodology has maintained the integration of the shared and complementary objectives of the two parts of the project.

In the development of the workshop, the team brought together their multiple perspectives, approaches, and expertise to create a program that integrated the principles of AI, OST, communication competence, and facilitated transformative learning. Team members each reflected on the workshop and will engage in group reflection and dialogue in the next phase of the project. M. Tidball noted, "The atmosphere of the workshop was very comfortable and welcoming, with all participants sharing in small group discussions. In this setting, people were willing to try new foods." The next step will be the team's analysis of and reflections on the workshop and a discussion of future directions and opportunities for advancing and utilizing this emerging CER method.

Findings and Opportunities for Continued Development of CER Methodology

Findings from the two case studies described above highlight communication dynamics and challenges

discovered in previous CER applications as well. While these studies represent important advances in CER methodology, challenges remain and there is more to learn about CER communication dynamics. At the systems level, embedded cultures, mind-sets, approaches to change, and philosophies make it difficult to introduce innovations—especially those generated in collaboration with family and community food system stakeholders. Within university cooperative extension systems, blending and balancing priorities and addressing trade-offs among multiple stakeholders is an ongoing challenge. Perhaps the most common tension university faculty experience involves engaging in ways that honor community priorities while at the same time meeting the publication and fundraising requirements for tenure and promotion. This issue goes beyond the academy—local leaders as well as scholars are increasingly pressed to raise money and produce high-profile outputs. These requirements often compete with the promotion of significant and sustainable systems as well as individual behavior changes.

In the CTFM case, as indicated earlier, communication between the CER team and nutrition program gatekeepers was a challenge because of the differing perspectives on research design and curriculum requirements and their impact on program effectiveness. The tension between system requirements and the findings regarding the importance of flexibility in the curriculum and its application is an example. The system required a traditional curriculum, which in this case had to receive approval from the academic institution before county or state program resources could be invested in the innovative family cooking program. Another constraint was that system resources could be used only for low-income families, whereas an important aspect of the cooking program was that it did not discriminate amongst participants based on their income.

Related to systems dynamics and constraints, collaborators in most CER initiatives as well as the families and food system stakeholders involved express concern about competition among multiple priorities for their time and other resources. They are stressed by the lack of time for basic food and eating activities along with reflection and renewal.

Conclusions and Opportunities for Further Development of CER

The communication framework described here combines theoretical insights and methodology from communication, human sciences, and our findings from food decision making CER. The basic communication process for CER is characterized by simultaneous sending and receiving, where every team member is a communicator. The relational component as well as the instrumental component of communication is emphasized. This dynamic cycle expands outward to connect other community members, professionals, practitioners, and/or researchers to enrich the ideas and information exchange beyond team members and to inspire innovative thinking.

Both of the case studies described, as well as previous CER, have shown us that effective food decision making CER communication requires sufficient time and safe space for developing communication competence for collective decision making rooted in trusting relationships. It also requires an approach to dialogue in which each participant is valued and a commitment to setting aside one's own perspectives and

mind-sets to explore new ways of thinking and acting. These findings have suggested additional opportunities for further development of CER for FDM and other community development research and practice. CER offers an alternative approach to understanding and facilitating systems and behavioral change to improve public health and family and community well-being by

- improving external validity,
- building family and community capacity for self-sustained improvements,
- guiding local team adaptations and specific applications that fit their particular situation,
- creating flexible research designs with minimal interference in program goals and strategies, and
- continually improving and expanding methods for the CER process, such as DDM, to build relationships within CER learning teams, families, and communities and with external stakeholders, which helps create contexts for community-initiated inquiry and innovation.

Some would argue that CER is a less rigorous approach to building evidence for changing food systems and improving diets. On the other hand, CER may be more externally valid, and in most cases, CER designs are less dependent on external resources (financial, human, social) and, thus, potentially more sustainable. CER teams have also found that this engaged approach inspires participants to share responsibility for their own change and for improving the systems that constrain them. CER methodology can more fully engage family and community members to build capacity and thus provide a better chance for sustainable change in family and community food decision-making processes and outcomes. These are some of the trade-offs to consider when deciding whether to use CER methodology. As our case studies have shown, this path toward a better future will require passion, commitment, and patience sustained by hope and belief in the goodness of mankind.

Take-Home Messages

CER communication competence for creating sustainable food systems that support health and well-being is fostered by the following activities:

- Committing sufficient time for face-to-face and distance communication to foster communication competence for collective decision making and for shifting mind-sets and cultures from competition toward collaboration, from dependency toward healthy interdependence
- Valuing each participant's perspective and understanding of the phenomenon and the local context
- Recognizing that CER is a long-term investment in health and well-being for children, families, and communities
- Facilitating communication competence for collective decision making by engaging in open dialogue aimed at colearning, changing mind-sets, ways of thinking, and innovation "on the verge"
- Building systems that foster collaboration, caring, and shared responsibility for making a difference
- Creating learning environments that expand human potential

Acknowledgments

[1]Sectors include community private, nonprofit, citizen groups or individuals who view issues and opportunities through a particular set of presuppositions.

[2]DDM was introduced in "Dialogue Method for Collaborative Communication: Adapting Qualitative Analysis Techniques for Enhancing Understanding," by Guan-Jen Sung, Holly D. Archer, and Ardyth MH Gillespie, at the conference "Enhancing Communication in Cross-Disciplinary Research," held at The Coeur d'Alene Resort in Coeur d'Alene, Idaho, September 30 through October 2, 2010.

[3]CER furthers the vision of the FDM Program for the health and well-being of all, where children and their families benefit from these initiatives for change (see http://familyfood.human.cornell.edu).

[4]Nutrition education emerged as a research area as well as a mode of practice and became a major strategy in community nutrition (see Gillespie, 2012).

[5]"Relational communication in groups refers to the verbal and nonverbal messages that create the social fabric of a group by promoting relationships between and among group members. It is the affect or expressive dimension of group communication, as opposed to the instrumental, or task-oriented dimension… . Thus, relational communication in groups encompasses both the structures and processes of a group social reality—that is, the connections, relations, and communication *among* members of the group" (Scheerhorn & Geist, as cited in Keyton, 1999, p. 192).

[6]Drawing from Thompson's description of collective communication competence and Senge et al.'s (1994) definition of dialogue, communication competence for CER is the extent to which team members are able to (1) reflect on and communicate their own presuppositions, (2) engage in productive dialogue by temporarily suspending assumptions to engage in "genuine thinking together," and (3) develop effective communication programs that support collective food decision making.

[7]The initiators were Kathleen Dischner, Holly Gump, and Helen Howard.

[8]*Locavores* is the term for people who seek locally produced foods.

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