# Development of a Web-Based Evaluation System: A Tool for Measuring Life Skills in Youth and Family Programs*

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*The need for evaluation of youth and family programming has never been more acute, yet practitioners often do not have the tools to conduct effective evaluations. We present the development and piloting of a web-based evaluation system as a tool for evaluating participant outcomes in Cooperative Extension programming. Results of a peer review of the system and pilot test of the instrument are presented. Implications for implementing evaluations for youth and family programs are discussed.*

The merging of practitioners and researchers to conduct evaluations of family programs has been described as an "odd couple" relationship by Myers-Walls (2000) because each group has different goals and responsibilities. At the same time, there has been an increased need for the evaluation of such programs, and often those in the field of human development and family are called upon to design and carry out evaluation research, frequently taxing the patience of each group. Myers-Walls suggested the difference is that researchers strive to acquire knowledge through scientific testing, whereas practitioners know their programs are effective through interactions with participants.

One reason researchers may have a difficult time with program evaluation results from the nature of this model of applied research. Evaluation does not fit neatly into the traditional research paradigm of testing theory and establishing truth that can be generalized to larger populations. Instead, evaluation is designed to help programs "inform decisions, clarify options, identify improvements, and provide information about programs and policies within the contextual boundaries of time, place, values, and politics" (Patton, 1997, p. 24).

One setting for this "odd couple" relationship of researchers and practitioners is on the campuses of land grant universities. According to provisions of the Smith-Lever Act (1991), Cooperative Extension is a partner with land grant universities whose purpose is to extend results of research through the extension system (practitioners) to address the practical needs of urban and rural residents of each state. Implementing this charge creates a challenge because researchers and practitioners have conflicting responsibilities. At our university, the authors, a teaching and research faculty member, and a Cooperative Extension specialist from the Department of Human Development came together to develop a system to evaluate youth development and family living programs. This collaboration emerged in response to the increased need for documentation that these programs are making a difference in the lives of the people served.

Here, the development of a statewide web-based evaluation system as a tool for measuring life skill outcomes in Cooperative Extension youth and family programs are outlined. First, the overall evaluation in Cooperative Extension programming is discussed. Then a background of the evaluation philosophy used in developing the project and the literature on life skills is provided. Next, the process used in developing the web-based Life Skills Evaluation System and the results of a pilot test of the system and instrument are discussed. Implications for use in other settings are discussed also.

## Evaluation in Cooperative Extension Programming

The need for evaluation of Cooperative Extension 4-H Youth Development and Family Living programs has never been more acute. Funders, decision-makers, government agencies, and constituent groups now require outcome-based or impact evaluations of major program efforts in light of fewer resources and greater demand on the resources that remain. Simultaneously, numerous Cooperative Extension programs have lost budgetary resources and evaluation specialist support that county faculty and staff depended on to assist them with evaluation processes, instruments, and reporting. This shortage of resources results in a lack of evaluation training or assistance for county-level personnel. Moreover, Cooperative Extension has seen a reduction in personnel with masters' degrees at the county level and depends greatly on program assistants to conduct and evaluate programs. Program assistants often have no background or experience in program evaluation, with the result being that, although the need for evaluation has grown, the resources have diminished. Consequently, in response to this need, a statewide evaluation system to measure and compile data on life skill outcomes for 4-H Youth Development and Family Living Programs was developed.

There were three primary objectives for the Life Skills Eval-

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uation project. The first objective was to test the assumption that Cooperative Extension 4-H Youth Development and Family Living programs teach life skills. The intent was to create a valid, reliable instrument that could measure growth in life skills as a result of participation in programs serving youth (6th grade and older) and adults. The second objective was to develop an evaluation system to provide outcome data that could be aggregated on local, county, and statewide levels for use in program improvement, accountability reports, and funding proposals. The final objective was to create an evaluation system that could be used by and be useful to all Cooperative Extension personnel. This included faculty, staff, and volunteers who have varying experience and knowledge in program evaluation.

In many states Cooperative Extension programs are beginning to use the logic model as a framework for program planning and evaluation. A logic model is a format for explaining program performance (McLaughlin & Jordan, 1998). The logic model focuses on inputs (resources), activities (what the program does), outputs (accounting of activities such as number of classes offered), and outcomes (short- and long-term impacts; United Way of America, 1996). Cooperative Extension personnel traditionally have reported on inputs, activities, and outputs when planning and assessing their programs. However, many fail to report outcomes—the summative level of evaluation.

The Life Skills Evaluation System was designed to measure life skill outcomes, thus addressing the outcome component of the logic model. We drew upon the Targeting Life Skills Model (Hendricks, 1998) to develop an instrument to measure program outcome in the Life Skills Evaluation System because it was either used by or familiar to Cooperative Extension personnel in their program planning for both youth and family. The Targeting Life skills Model was designed to assist staff in planning, teaching, and assessing life skill outcomes taught in their programs. Although the model was originally designed for use in 4-H Youth Development programs, several states also use the concepts in adult programming. The model is illustrated using the 4-H clover's logo containing four skill-building components: head, heart, hands, and health. Within the four components, Hendricks identified 35 life skills taught in 4-H Youth Development programs.

## Evaluation Process Framework

According to Preskill (1991), an understanding of an organization's culture may lead to more useful evaluations. Preskill asserted that knowing an organization's culture provides a framework by which one can determine methods that will influence the use of the evaluation and will provide insights to factors that determine the ultimate value of evaluation results. Rossi and Freeman (1993) postulated that to be successful at conducting evaluations, the social ecology of the organization must be assessed continually. Also, Stecher and Davis (1987) suggested evaluators pay attention to organizational factors and political influences within an organization to be effective.

Schein (1996) defined culture as "a set of basic tacit assumptions about how the world is and ought to be that a group of people share and that determines their perceptions, thoughts, feelings, and to some degree, their overt behavior" (p. 11). Schein (1992) further described organizational culture as having three levels: artifacts, values, and basic assumptions. By studying the three levels of organizational culture, evaluators can best design a process that meets the needs of stakeholders and increases the probability that evaluation results will be used.

The first of these levels, artifacts, consist of the culture's physical space, the technological output, written and spoken language, artistic products, and the overt behavior of its members. This level of an organization includes all that can be seen, heard, or felt when one encounters a new culture for the first time (Schein, 1992).

The second level, concerned with values, is portrayed in the organization's philosophy, mission, and vision that conveys the members' ideas about what they want the organization to represent (Schein, 1992). The rules derived from the organization's mission and vision are well documented and serve as guidelines for behavior for new and continuing members (Schein, 1992).

The third and final level, the basic assumptions of an organization, are the beliefs that become integrated into the behavior of members and are sometimes taken for granted (Schein, 1992). Basic assumptions are those beliefs that an organization does not debate or confront. They are the part of the organizational culture that defines what things mean for members and what actions are to be taken in difficult, unfamiliar situations (Schein, 1992).

Schein's (1992, 1996) organizational culture is applicable to Cooperative Extension programming. Key to the structure of Cooperative Extension is the location of offices in each county of the state and the provision to local constituents of the latest technological systems. These two elements, components of Schein's (1992) artifacts of organizational culture, are vital in understanding how to create and use a statewide evaluation system. The location of Extension offices in every county in the state promotes the idea that programs be based on the strengths and needs of the local communities rather than being mandated from a statewide administrative group. Telfair (1999) proposed that this creates a unique setting for evaluators that requires them to understand the cultural reality of the community. The strengths of local input and the availability of technology to communicate statewide had not previously been used in creating and sustaining statewide evaluations. Until recently the advantages of creating an evaluation from local input that could be aggregated statewide were untapped. As community stakeholders became aware that data could be aggregated locally and statewide to inform them of the impact of their work, the demand for such evaluation increased.

As values of organizational culture (Schein, 1992), Cooperative Extension sees the inclusion of university faculty, staff, volunteers, and participants as essential in the creation and implementation of new programs and the enhancement of ongoing programs. These groups represent multiple stakeholders, an essential factor to be considered when designing and implementing evaluations (Rossi & Freeman, 1993). Cousins and Whitmore (1998) proposed that this stakeholder involvement, also known as participatory evaluation, occurs along a continuum, depending on who controls and participates in the evaluation process. Scholars in the field of evaluation research (Cousins & Earl, 1995; Greene, 1988; Patton, 1997) have asserted that evaluation results are more likely to be used if the users of the results are involved in the creation and implementation of the evaluation. Patton framed this as utilization-focused evaluation, emphasizing the importance of "intended use by intended users" (p. 20).

This principle of organizational culture matches the Cooperative Extension value of inclusion of stakeholders at all levels of program planning, implementation, and evaluation. Although

participation at all levels of the program is valued by Extension, the implementation of this value when conducting evaluations is often minimal. Community partners view the county extension personnel as having the expertise and responsibility for program evaluation, whereas county personnel are not provided a system or training with which to measure outcomes. A partnership of researchers and practitioners to address the implementation of stakeholder inclusion in program evaluation is needed. This collaboration can lead to high quality programs and evaluation; however, in doing so it also can cause conflicts because of the cultural differences between these two groups. Careful planning, good communications, and an understanding of the differences in the two cultures can be used to avert any potential negative impact (Myers-Walls, 2000).

At Schein's (1992) third level of organizational culture, a basic assumption of the Cooperative Extension System is that all information used to achieve the organization's mission is relevant, research-based, of the highest standards, and useful to citizens of the state (Washington State University, 1998). This assumption is so profound that it is an accepted premise of the organization that is rarely questioned by members of Cooperative Extension or their community partners. However, at the local level most evaluation research has been conducted at what is termed the output level, which accounts for program activities and utilization (i.e., number of classes taught, number of participants). Outcome-based evaluation that might more strongly support the assumption of research-based programs is lacking.

The use of high-quality standards when developing and implementing evaluations and interpreting results has been promoted in the field of evaluation research (Patton, 1997). The Joint Committee on Standards for Educational Evaluation (1994) developed standards for quality evaluations encompassing four domains: utility, feasibility, propriety, and accuracy. This philosophy of high standards thus specifies that evaluation be useful, feasible, ethical, and accurate and provides support for the basic assumptions that Extension's work is research-based and useful to the users. The use of the evaluation standards supports Telfair's (1999) claim that the evaluator needs to be flexible while still employing a rigorous evaluation process. In turn, this supports Patton's position that utilization-focused evaluation is highly personal and situational. Overall, Patton's utilization-focused evaluation, based on the key premise that evaluations be user-friendly, useful, relevant, and valid, is pertinent to the organizational culture of the Cooperative Extension System and the goal of developing an evaluation to measure the development of life skills in youth and adults. Additionally, the guidance provided in the quality standards for program evaluation (Joint Committee on Standards for Educational Evaluation) completes the framework from which this project was developed.

## The Concept of Life Skills

Many youth and adult programs today attempt to assess participant growth in the area of basic life skills (Hendricks, 1998; Landman, Irvin, & Halpern, 1980; Olson & Smith, 1997; Seevers, Dormody, & Clason, 1995; Ward, 1996). Life skills are skills thought to be necessary for individuals to function competently in everyday life (Landman, et al.), including the ability to handle finances and other resources, work effectively with others, communicate well, and make effective decisions. Powell (1985) defined life skills as

> the life-coping life skills consonant with the developmental tasks of the basic human development processes, namely those life skills necessary to perform the tasks for a given age and sex in the following areas of human development: psychosocial, physical-sexual, vocational, cognitive, moral, ego, and emotional (p. 24)

Hendricks defined life skills as "the abilities individuals can learn that will help them to be successful in living a productive and satisfying life (p. 4). Scales (1986) claimed that the underlying feature of all life skills is to help people make thoughtful decisions. As such, life skills are important concepts to teach in educational programs offered through Cooperative Extension.

The life skills movement is an outgrowth of a variety of disciplines, including education and mental health (Gazda & Brooks, 1985). Although it is not possible to pinpoint precisely when it began, interest in life skills programming increased in the 1960s with the shift from a medical model in mental health to one of competency and effective functioning (Gazda & Brooks). Since then the movement to teach life skills expanded to the areas of antipoverty programs, adolescents in educational settings, assertiveness training (Gazda & Brooks), and individuals with developmental disabilities (Husted & Garland, 1977).

Life skills are not distinct categories but rather describe a range of skills important for successful living. Although life skill concepts overlap, it is useful to identify and define which life skills a program targets (Hendricks, 1998). Life skill categories vary depending upon the needs of the target population. Some focus on life skills needed by adolescents (Gamon & Dehegedus-Hetzel, 1994; Picklesimer, Hooper, & Ginter, 1998; Poole & Evans, 1989), whereas others target adult populations (Olson & Smith, 1997). Often an instrument is developed by the evaluator to assess the life skills learned in the specific program being evaluated (e.g., see Seevers et al., 1995; Ward, 1996). We were unable to locate instruments for assessing growth in life skills by both youth and adults in education and skill building programs for the general public. Our project sought to develop a valid evaluation instrument to measure life skills for both youth (6th grade and older) and adult populations.

## Methods

The Life Skills Evaluation System uses 8 of the 35 life skills identified by Hendricks (1998) as necessary for individuals to lead a productive and satisfying life. The selected skills described in Table 1 are (a) decision making, (b) wise use of resources, (c) communication, (d) accepting differences, (e) leadership, (f) marketable skills, (g) healthy lifestyle choices, and (h) self-responsibility. 4-H Youth Development and Family Living personnel identified these as skills they hoped youth and adults were learning from their programs. The skill categories are further defined by 31 outcome indicators developed for the evaluation system to measure change in life skills as a result of participation in programs.

### *Instrument Development Process*

The Program Evaluation Standards (Joint Committee on Standards for Educational Evaluation, 1994) are intended to ensure that an evaluation will serve the information needs of intended users. The importance of designing an evaluation responsive to the needs and interests of stakeholders was of particular importance in the development of the life skills system. Major stakeholders (Cooperative Extension faculty and staff) met for 2 days to discuss the need for developing an evaluation system to

Table 1
*Selected Life Skills,* Definitions,* and Indicators*

| Life Skill | Definition | Indicators |
|---|---|---|
| Decision making | Choosing among several alternatives | • List my options before making a decision<br>• Think about what might happen because of my decision<br>• Evaluate decisions I have made |
| Wise use of resources | Using sound judgment, not wasteful, being responsible, setting priorities | • Wisely use the natural resources in my environment<br>• Plan how to use my financial resources<br>• Use my time wisely<br>• Take care of my personal belongings |
| Communication | The exchange of thoughts, information, or messages between individuals using speech, writing, gestures, and artistic expression | • Make a presentation<br>• Listen carefully to what others say<br>• Clearly state my thoughts, feelings, and ideas to others<br>• Settle disagreements in ways that are not hurtful |
| Accepting differences | To recognize and welcome factors that separate or distinguish one person from another | • Treat people who are different from me with respect<br>• Work/play with people who are different from me<br>• Have friendships with people who are different from me |
| Leadership | To assist a group in meeting its goals by showing or directing along the way; using personal influence to guide a group in reaching its goal | • Organize a group to reach its goal<br>• Use different leadership styles<br>• Get others to share in leadership |
| Useful/marketable life skills | To have the abilities wanted by employers and needed to hold a job | • Work out problems that are presented to me<br>• Follow instructions as they are given to me<br>• Contribute as a member of a team<br>• Accept responsibility for doing a job<br>• Keep accurate and useful records<br>• Apply for a job |
| Healthy lifestyle choices | Selecting a way of living that is in accord with sound condition of body and mind, prevention of disease and injury | • Make healthy food choices<br>• Choose activities that promote physical health and well being<br>• Manage stress positively in my life<br>• Avoid risky behaviors |
| Self-responsibility | Taking care of oneself; being accountable for one's behavior and obligations; choosing for oneself between right and wrong | • Do what is right for myself when with a group<br>• Admit to mistakes I make<br>• Understand it is important to follow through on commitments I have made<br>• Have control over my own personal goals/future |

*Hendricks (1998).

assess growth in life skills that could be used on a statewide basis with a broad, diverse population of youth and adults. It was not feasible or useful to develop indicators for all 35 of Hendricks' (1998) life skills. On the basis of her experience in introducing the model to statewide constituents, Hendricks (personal communication, January 6, 1999) recommended groups start with no more than eight life skills. She found using more than eight life skills in an initial evaluation effort proved to be cumbersome and inefficient. Therefore, prior to the meeting, the Cooperative Extension personnel were asked to review the life skills included in Hendricks' model and determine those that pertain to their programs. Also, they were asked to share the list of skills with their community stakeholders (volunteers, agency personnel, participants, and funders) and request their input on which skills were most important in addressing community needs.

At the meeting, two facilitators trained in the Technology of Participation (ToP; http://www.ica-usa.org/ToP) conducted a group process to select eight of the life skills for use in the Life Skills Evaluation System. ToP methods enable groups to come to common agreements that everyone can support. On the basis of techniques from Group Facilitation Methods and Participatory Strategic Planning (components of ToP), the group process engaged the participants in small group discussions and a consensus selection process. Each small group was able to select the five skills that were important to them and their stakeholders, and then they shared the list with the larger group. Next, the entire group came to consensus on the list produced through discussion and prioritization to determine eight life skills that were of key importance to them and their community stakeholders.

To continue the process of involving stakeholders and to assure that the information selected was pertinent and responsive to the needs and interests of those using the Life Skills System, Cooperative Extension personnel worked with us to design outcome indicator statements for each of the eight skills. Participants voluntarily divided into eight groups, each addressing one of the eight skills selected. The groups met to write statements to reflect certain life skills. To guide their development of the statements, the groups started with the Targeting Life Skills Model (Hendricks, 1998), first examining the definition of the particular life skill (see Table 1 for the definition of each life skill). In her model, Hendricks listed suggestions of observable indicators that practitioners might use to assess whether program participants were learning a life skill. Group members also reflected on their own programs and developed statements they saw as demonstrating whether an individual was learning a specific skill. This gave the practitioners an opportunity to articulate how they "know" their program is making a difference (Myers-Walls, 2000). After the groups developed their indicator statements, they were forwarded to the authors. We reviewed the potential ability of the statements to measure growth in life skills, based on our review of the literature (Hendricks; Landman et al., 1980; Olson & Smith, 1997; Scales, 1986; Seevers et al., 1995; Ward, 1996). After our review and refinement of the statements, we sent the list of indicators back to all counties for additional review and comment by stakeholders. In the final

form, each life skill was represented with 4–6 statements. A complete list of the statements appears in Table 1.

The challenge was to create indicator statements that were adequately general to apply to all intended audiences, but specific enough to be meaningful and applicable to a variety of settings. However, doing so was vital to the design of an instrument that could address and serve the needs of a full range of participants. An assessment of the face and content validity of the instrument also resulted. In the final form 31 indicators were retained for the Life Skills Evaluation System. A Likert-type scale was used to measure each life skill outcome, with the following responses: 1 = *no*, 2 = *sometimes*, 3 = *usually*, and 4 = *yes*.

A retrospective pretest-posttest design was used for the Life Skills Evaluation instrument. This design was selected for three reasons. First, a retrospective pre/post design is useful in addressing response–shift bias, a source of contamination in self-report evaluations where the respondent's standard for the measurement of a concept changes after participation in the program or treatment (Howard, 1980; Pratt, McGuigan, & Katzev, 2000; Robinson & Doueck, 1994; Rockwell & Kohn, 1989). Second, Cooperative Extension 4-H Youth Development and Family Living programs have voluntary attendance; therefore, some participants may not be in attendance on the dates that assessment is made. The retrospective pretest–posttest design eliminates the need to match pretests and posttests. Finally, the retrospective pretest–posttest design is easy to administer, and Extension programs have limited staff to attend to evaluation needs. This addresses the quality criteria of incorporating practical procedures that lessen program disruption when conducting an evaluation (Joint Committee on Standards for Educational Evaluation, 1994).

Demographic information also is included as part of the instrument. Four demographic questions are asked that relate to age, sex, current residence, and ethnic origin. These categories were selected based on the reporting information required for the Cooperative Extension United States Department of Agriculture (USDA)-funded State Strengthening Grants. Responses to these and other questions are optional, but this information determines whom Extension programs reach. The nature of the funding of programs requires that certain populations are targeted and these data assist in meeting this requirement.

### *System Development*

In addition to the development of an instrument to measure growth in life skills, we sought to develop a system to guide Cooperative Extension personnel through the planning, implementation, and reporting of evaluation results. The quality domain of feasibility in program evaluation advocates for practical procedures for implementation and cost effectiveness (Joint Committee on Standards for Educational Evaluation, 1994). In an effort to design the Life Skills Evaluation System that is practical and cost effective, the system is web-based and readily accessible by Cooperative Extension personnel throughout the state through authorized users. Evaluation forms are created, data are entered, and summary reports are generated on line. Program identification information is requested before the instrument is created so (a) the form can be customized for specific programs and (b) the programs evaluated can be clearly identified. Program staff may then select from 5 (a suggested minimum) to 31 indicators for use in their evaluations and additionally may include self-specified indicators unique to their program. Data collected from these self-specified indicators cannot be entered into the Life Skills Evaluation System. Program staff must tabulate those data at their local site.

Summary reports of frequencies and means can be generated by Extension personnel on an individual, county, and statewide level as soon as the data are entered into the system at the local program site. This assures the program staff of a timely report that can be used to inform stakeholders and program participants. Additionally, more specific reports by program category and demographics, as well as more complex statistical analyses, can be conducted by the research faculty on the project. Additional analysis can enhance the effectiveness of the evaluation.

After the instrument and system were developed, approval was obtained by the university Institutional Review Board (IRB). The Life–Life Skills Evaluation System is defaulted so the informed consent statement appears at the top of each evaluation created. The IRB assessed that participation in the evaluation was of minimal risk, therefore allowing passive parental consent for youth under 18 years. When an evaluation form is being created, users are queried as to whether youth under 18 will be participating. If users respond "yes," they are taken to a screen containing the passive consent statement and instructions on how to disseminate it to parents prior to conducting the evaluation. Staff using self-specified indicators submit the indicators to the authors for IRB approval.

The number of contact hours offered in Cooperative Extension programming greatly varies. Research is absent on how many contact hours are needed to produce a change in participant knowledge and behavior. Personal communication with experienced evaluators (e.g., H. Preskill, February 15, 2001; S. K. Rockwell, January 24, 2001; E. Taylor-Powell, April 25, 2001) confirmed that no guideline exists for number of hours needed to expect change. Without empirical data to guide us, a decision was made that programs using the Life Skills Evaluation System should have a minimum of 6 contact hours. Although an arbitrary choice, the 6-hour minimum was based on the need to assess the effectiveness of short-term Cooperative Extension programs while taking into consideration that shorter-term programs are not likely to produce change in life skills.

## Results and Discussion

A piloting of the Life Skills Evaluation System including the instrument was necessary to determine its effectiveness and usefulness. This was done through reviews of the system by practitioners and Extension specialists familiar with evaluation research and a piloting of the instrument by local programs.

### *System and Instrument Review*

*Review by practitioners.* The review of the Life Skills Evaluation System by practitioners was conducted at two levels. The first level was accomplished by presenting the new evaluation tool to Cooperative Extension personnel at two regional program trainings within the state. An introduction to program evaluation was followed by a demonstration of the system. All stakeholders were encouraged to give feedback and suggestions during and after the training as to the feasibility and usefulness of the system. Training was provided about how to use the instrument and the system that emphasized the importance of respecting and protecting the rights and welfare of the participants. Feedback was positive. Cooperative Extension personnel expressed excite-

ment that an instrument had been developed to assist in measuring program outcomes.

The second level of review was by Cooperative Extension personnel from eight counties attending the training who volunteered to provide a more in-depth review. They reviewed the system using criteria provided by the authors. A questionnaire with open-ended questions was disseminated by email to the volunteers asking them to assess (a) the appearance of the web site, (b) the ease with which it could be maneuvered, (c) the potential usefulness of the system for their programs, and (d) both face and content validity of the indicator statements.

Response to the appearance of the web site and ease at which it could be maneuvered were generally positive. Users found the instructions to be clear, easy to follow, and the system user friendly. One reviewer commented, "Very attractive. Not cutesy, or technical. Reading is concise and easy to read." Suggestions for locations of "action buttons" to guide a user through the system were made. Another suggestion was to include a copy of a sample evaluation form for users to see before they tried to create their own. Both of these suggestions were incorporated.

Two major areas of improvement were identified. First, many were concerned with the informed consent paragraph that defaults to the top of any evaluation form created. Practitioners thought it appeared "threatening" and "governmental." Prior to the implementation of the Life Skills Evaluation System, most Cooperative Extension personnel had not conducted outcome evaluations and, therefore, had no experience with the requirements of informed consent. Revisions to the paragraph were made and approval obtained from the IRB to address this concern. Training on conducting quality evaluations and use of the system also assisted in helping practitioners to understand the necessity of obtaining informed consent.

The second major area of concern was the wording of the indicators. Although stakeholders had been involved throughout the process in the development of the indicators, some who reviewed and piloted the system wanted to change the wording of certain indicators to be specific to their program. For example, one indicator under the life skill of communication is worded, "I listen carefully to what others say." A practitioner using the instrument to evaluate training for adults, who would be handling telephone calls related to food preservation, wanted to change the wording to, "I listen carefully to what callers say." Another concern was the use of the indicators for both youth and adult audiences. One reviewer commented, "I work mostly with adults and the indicators are so simplified they are a bit on the condescending side." However, another suggested that because the indicators need to be broad for use with a variety of youth and family programming, they might be difficult for youth to understand. Data from the pilot study of the instrument, discussed in the next section, indicate the wording of indicators is appropriate for youth and adult audiences. We continue to address this issue, realizing that some of the life skills and some of the indicators may be more appropriate for one age group over another. One way in which this will be addressed is that specific programs offered in counties throughout the state, such as the youth "Challenge" program, are being encouraged to work together to determine which life skills and indicators they want to measure at all of their sites. We plan to work with these groups to add or adapt indicators.

Practitioners also were asked to assess the usefulness of the instrument and the system. The greatest advantages of the system were that it was quick and user friendly, there was a consistent tool for measuring outcomes across the counties, and program staff could add self-specified indicators to their evaluations when needed. One individual also commented on how the use of a retrospective pretest format worked better for the type of programming she offered:

> When I piloted this, I found asking the "before" and "after" at the end of a training series (rather than doing a traditional pre- and posttest) resulted in more accurate responses. In a pretest, participants may think they know something so the posttest does not actually show an improvement.

The limitations focused on not being able to use the system with youth who are below 6th grade and concerns about using some of the indicators with adult audiences. Much of 4-H youth programming involves younger children, and we are currently working on a Life Skills Evaluation tool for younger ages.

*Peer review.* The system was peer reviewed by Cooperative Extension state specialists from universities located in three states outside of Washington who are familiar with evaluation research and the Targeting Life Skills Model reviewed the system. The specialists were given background information on how the evaluation system was designed and asked to review the system and the instrument. The same questionnaire given to the practitioners was sent to the specialists conducting the peer review with additional open-ended questions asking them to assess the theoretical base, methodology, face and content validity of the instrument, and strengths/limitations of the system. The reported strengths were the "user friendly" nature of the system, the ability to customize to individual needs while allowing the ability to gather statewide data, and professional look of the instrument printout. The specialists felt Patton's (1997) utilization-focus combined with Schein's (1996) organizational culture was an appropriate approach to the development of the system. Furthermore, the use of Hendricks' (1998) Targeting Life Skills Model as the framework for the instrument was appropriate; however, one specialist expressed concern that there was lack of prior empirical testing of the Hendricks' model. Additionally, one reviewer questioned the applicability of the indicators to both youth and adult audiences, a concern also raised by practitioners. Both of these issues were addressed in the pilot of the instrument.

We were cautioned by one reviewer that safeguards were necessary to assure accurate data entry at the local program sites. Two safeguards were implemented. One is that the number of program participants is entered before an individual can enter data. Then a "counter" indicates how many evaluation forms have been entered into the database. This was done to provide information on the response rate for a specific evaluation and to assist data entry personnel, if interrupted when entering data. The second safeguard is that when entering data for the outcome indicators, only numerical values associated with the Likert-type scale can be entered. If an individual accidentally enters a number outside of the range 1–4, an error message appears.

This same reviewer expressed the importance for practitioners to realize the value of connecting program objectives (teaching life skills) to the actual learning, regardless of the content. This has been one of our greater challenges, because it represents a shift in the way Cooperative Extension personnel think. That is, the shift requires that in their planning they go beyond examining learning objectives related to program content to understanding the life skills they teach in the process. In the past, most Extension evaluations consisted of measuring increases in

Table 2
*Pilot Sample Demographics (n = 369)*

| Characteristic | Frequency | Percentage of Sample |
|---|---|---|
| Gender | | |
| Female | 255 | 69.1 |
| Male | 105 | 28.5 |
| No response | 9 | 2.4 |
| Age | | |
| 11–13 years | 138 | 37.4 |
| 14–17 years | 111 | 30.1 |
| 18–25 years | 25 | 6.8 |
| 26–35 years | 19 | 5.1 |
| 36–45 years | 39 | 10.6 |
| 46–55 years | 22 | 6.0 |
| 55+ years | 6 | 1.6 |
| No response | 9 | 2.4 |
| Race/Ethnicity | | |
| African American | 19 | 5.1 |
| American Indian | 14 | 3.8 |
| Asian American | 14 | 3.8 |
| Hispanic | 19 | 5.1 |
| Caucasian | 249 | 67.5 |
| Racially mixed | 35 | 9.5 |
| No response | 19 | 5.1 |
| Place of Residency | | |
| Farm | 80 | 21.7 |
| Rural area (non-farm) | 59 | 16.0 |
| Community <50,000 | 125 | 33.9 |
| Community >50,000 | 88 | 23.8 |
| No response | 17 | 4.6 |

content knowledge and assessments of participant satisfaction. Taking the content of the program implemented (e.g., nutrition), and then trying to identify life skills that are learned is a new process for many Extension personnel. We continue to deal with this issue through training on evaluation and how to effectively use the Life Skills Evaluation System.

We also received a suggestion to include a space for a narrative or success story. Although we believe this would be beneficial, it is not feasible at this time for the system to collect qualitative data. Encouraging local program staff to include narratives in their summary reports could incorporate this suggestion.

A member of the Children, Youth, and Families Education and Research Network (CYFERNet) conducted a final review. This group manages the evaluation of USDA's federally funded state strengthening projects and is comprised of Extension professionals and evaluation researchers from six land-grant universities (U.S. Department of Agriculture, 1999). The reviewer concurred with the state specialists that the theoretical base was appropriate and useful for the intended users. The strengths of the system were reported to be: (a) the ease in which the system could be used, (b) the opportunity for a program to generate its own summary report and thus have quick feedback, (c) the ability to gather data on some common indicators, and (d) the option to customize the evaluation instrument to meet the specific program's needs.

Last, both practitioner and peer reviewers had suggestions for enhancement of the web site appearance and location of action buttons and hyperlinks. Many of these suggestions were incorporated. The system is dynamic in nature, and user suggestions will continue to be considered in enhancing effectiveness and usefulness.

## *Results of Pilot Study of the Instrument*

During the spring and early summer of 2000, nine Cooperative Extension personnel throughout the state volunteered to test the instrument with one of their youth or family programs. Five of the volunteers also had previously reviewed the system for us. The pilot test was implemented on a volunteer basis as Cooperative Extension programming occurs throughout the year and is scheduled based on local needs. Not all counties had programs teaching life skills underway during the pilot study period and use of the system is voluntary.

Data from 369 participants who took part in 9 youth and family programs were included in the pilot study. Each of the nine programs developed a customized evaluation instrument by selecting outcome indicators from the Life Skills Evaluation System that their local stakeholders wanted measured. The selected indicators created program-specific subsets of indicators (PSSI) to assess participant growth in life skills learned in their respective programs.

Demographic data on these 369 participants appear in Table 2. Youth under 18 years represented 67.5% of the sample. The youth programs in the state of Washington typically have a larger number of participants than adult and family living programs. The ratio of female to male participants was approximately 2:1, again reflecting the profile statewide (Washington State University Cooperative Extension, 2000). The distribution of racial–ethnic patterns and place of residence distribution of the sample also reflect statewide trends.

Cronbach's alpha was used to test for internal consistency reliability and was calculated on each PSSI selected by the individual programs. Table 3 illustrates the results of these analyses by program title, an indication of whether the PSSI was used for youth and/or adults, and the number of indicators used. The examination of various PSSI from the instrument indicated that

Table 3
*Cronbach's Alpha and Paired t-tests of PSSI for Evaluations Used in Pilot Study*

| Program | Type of Participant | *n* | Number of Indicators Used | Cronbach's Alpha | Mean Difference | *SE* | *t* |
|---|---|---|---|---|---|---|---|
| Leadership program | Adult | 18 | 4 | .82 | .32 | .09 | 3.75** |
| 4-H club program | Youth/adult | 54 | 29 | .91 | .50 | .06 | 7.78*** |
| Money management | Adult | 11 | 6 | .84 | .95 | .16 | 6.06*** |
| Master food preparer | Adult | 7 | 8 | .78 | .25 | .13 | 1.19 |
| Strategic planning | Adult | 15 | 7 | .75 | .29 | .07 | 4.27*** |
| New volunteer leader training | Adult | 17 | 6 | .75 | .88 | .09 | 9.79*** |
| 4-H challenge | Youth | 108 | 8 | .85 | .33 | .04 | 7.77*** |
| 4-H state conference | Youth/adult | 108 | 7 | .80 | .34 | .05 | 6.44*** |
| 4-H science camp | Youth/adult | 22 | 8 | .86 | .18 | .05 | 3.22** |

*$p \leq .05$; **$p \leq .01$; ***$p \leq .001$

Table 4
*Results of Factor Analyses of PSSI for Evaluations in Pilot Study (n > 100)*

| Items | Factor 1 Loading |
|---|---|
| 4-H state conference life skills indicators ($n$ = 107) | |
| Think about what might happen because of my decisions | .71 |
| Clearly state my thoughts, feelings, and ideas to others | .66 |
| Have friendships with people that are different than me | .50 |
| Follow instructions as they are given to me | .57 |
| Contribute as a member of a team | .79 |
| Do what is right for myself when with a group | .78 |
| Understand it is important to follow through on commitments I have made | .73 |
| 4-H challenge program life skills indicators factor analysis ($n$ = 107) | |
| Think about what might happen because of my decisions | .71 |
| Listen carefully to what others say | .72 |
| Settle disagreements in ways that are not hurtful | .69 |
| Work/play with people who are different than me | .63 |
| Get others to share in leadership | .72 |
| Work out problems that are presented to me | .70 |
| Contribute as a member of a team | .77 |
| Do what is right for myself when with a group | .68 |

good internal reliability was evident, with alphas ranging from .75 to .91. Good internal reliability (.82) remained consistent even when as few as four indicators were used. However, fewer indicators in the PSSI resulted in the likelihood of the reliability being compromised.

According to Tabachnick and Fidell (1989), a sample size of 100–200 is adequate for a factor analysis. They also recommend at least five cases per variable for this statistical test. Two of the nine evaluations in the pilot test met both criteria (the 4-H Challenge Program and the 4-H State Conference). Principal component factor analyses were used to assess construct validity. Only the first factor in each had an eigenvalue > 1. The indicators loaded onto the single factor, indicating one construct, life skills (see Table 4). We interpret these results to mean that the evaluations consisted of PSSI that did not include all 31 indicators, thereby capturing the range of life skills into an overall dimension. Factor loadings were positive and high, with the lowest being .50. The eigenvalue for the 4-H Challenge Program was 3.94 and the factor explained 49% of the variance. For the 4-H State Conference, the eigenvalue for the single factor was 3.28; that explained 47% of the variance.

Paired *t*-tests were used with the summed PSSI for each of the nine evaluations using a probability level of .05 to determine changes in knowledge or performance of life skills. To handle missing data, we used a mean substitution when a participant answered at least 80% of the items. If this criterion was not met, the case was deleted from the analyses. All of the 31 life skill indicators were used by at least one program in the pilot study. Results of the paired *t*-tests for each of the evaluations in the pilot study are shown in Table 3.

The data from the Life Skills Evaluation System pilot study revealed that the instrument could be used for programs targeting both youth and adults. Statistically significant gains in life skills were found for both participants.

## *Lessons Learned From the Pilot Study*

We learned that challenges remain in our efforts to help practitioners understand the research aspects of evaluation. The need for continued training in evaluation and use of the Life Skills Evaluation System for Cooperative Extension personnel is apparent. Several examples illustrate this point. In one example, life skills were assessed for a youth conference, and problems occurred in data collection that resulted in our being unable to enter or use these data in the system. The staff member did not follow the guidelines to provide for passive parental consent; therefore, the data could not be used. This occurred even though the system reminds users to give parents a copy of the passive consent form prior to implementing the evaluation. The second problem arose in the distribution of the instrument. Youth were given the evaluation form at the end of the program during a luncheon; this timing resulted in discussion of the evaluation amongst the youth and, thus, contaminated the data.

Another example supports the importance of continued training and use of the Life Skills Evaluation instrument as designed by the evaluators. Results of the evaluation of the Master Food Preservers program found no statistically significant gains in life skills as measured by the Life Skills Evaluation System (see Table 3). There are several potential reasons for this, including the lack of statistical power due to the small number of participants in the evaluation ($n$ = 7). However, our concerns here are the reasons associated with use of the instrument. First, the program ended in October, and the evaluation was mailed to participants in February. Because the instrument is designed to be used during the last program session, it is possible that too much time elapsed for participants to assess how the program may have helped them learn the life skills, particularly with the retrospective pretest. Second, the participants may have had difficulty in linking life skills learned with the content of the program that focused on proper food handling and storage. As such, it is important that the instrument be used while the program is in session. Third, the instrument was not used as part of program planning and the life skills selected for assessment were determined after the program ended.

A third example illustrates the need for continued training on how to use evaluation data. One Life Skills Evaluation Systems user asked how she was to interpret the reports generated from her evaluation. She was unsure about how to take the information and compile a report. Clearly, this example points to the need for continued training on reporting of evaluation findings.

## *Limitations*

We recognize that limitations exist in the resulting design and data for an evaluation system that could be used by a variety of youth and family living programs. The system was designed from the assumption that Cooperative Extension programs are teaching life skills. Assessing the external validity of these results was not a goal and generalization of results from this study is not appropriate. The system is applicable only for programs serving adults and youth (at least 6th grade). It is not to be used by 4-H Youth Development programs serving younger children. The system measures perceived change only at the individual level and does not capture influences on the family and community levels of analysis. Finally, given that use of the system is voluntary, obtaining data on program effectiveness in teaching life skills across all Cooperative Extension programs in the state is not possible at this time. In spite of these limitations, the pilot test of the system and the instrument indicate that tool can be useful for practitioners in measuring life skill outcomes.

## Implications

The Life Skills Evaluation System pilot study has multiple implications for practitioners conducting evaluations on youth and family programs. First, the utilization approach of involving stakeholders in the evaluation process (Patton, 1997) was found to be useful and necessary. Cooperative Extension personnel in the state have shown an increased interest in program evaluation demonstrated by the use of the system and an increase in requests for more training and technical assistance. Several other state extension services also have requested training in the process of involving stakeholders in designing and implementing web-based evaluation systems. This increased interest demonstrates that the inclusion of stakeholders in the creation of the system supports the organizational level of cultural values (Schein, 1992). If the goal of evaluation is to assist program staff in determining what is working and how to improve the program, then the stakeholders must be actively involved in the evaluation process. Dumka, Roosa, Michaels, and Suh (1995) also support this implication through their five-stage model of program development that emphasizes the importance of collaborative relationships between researchers and stakeholders in planning and evaluating prevention programs. Too often evaluations are conducted using an external evaluator with the common result being a report that languishes on a shelf. The inclusion of Cooperative Extension personnel and related stakeholders in designing and implementing their own evaluations promotes the use of evaluation results on a local basis for program improvement and future planning.

Second, the results indicate that a general instrument can be developed to measure life skills that allows program staff to select a subset of indicators appropriate for specific programs. This means that individual evaluation instruments do not need to be designed and tested for each youth and family living program offered. Instead, data can be collected with an instrument providing a common construct that is agreed upon by all programs. This ability to create an evaluation that is valid and reliable yet specific to community programs aids the Cooperative Extension personnel in providing research-based results, an important basic assumption of the third level of the Cooperative Extension organizational culture (Schein, 1992).

Third, the results of the pilot study indicate that continued support and training is needed for program staffs who use the system. Although one goal of the project was to develop an evaluation instrument that could be used by staff with varying levels of expertise in evaluation, it is clear that continued training is needed.

Finally, the process demonstrates that evaluation is dynamic. In this case, eight life skills were selected by the 4-H Youth and Family Living faculty and staffs as life skills that they anticipated were being taught in their programs. However, as programs expand and change, so will the need to add more life skills and indicators to the system.

## Future Directions

The Life Skills Evaluation will continue to evolve in response to the needs of the 4-H Youth Development and Family Living programs. Future plans include a survey to determine where improvements and adaptations are needed. Program faculty and staff may find that more life skills and indicators are needed. The expanding Hispanic population in the state may make it useful to develop a Spanish version of the system as well. Because 4-H Youth Development programs serve youth younger than twelve, there is a need to develop an instrument that is valid for this age group. Although pilot data show that the indicators are relevant for youth and adult populations, continued assessment and possible revisions will be made to assure that the system is valid for both populations. Testing of the entire instrument with a larger sample will allow more complex analysis to determine which indicators are specific to a particular life skill, further refining the measure. Further testing of validity to include convergent and criterion-related validity would strengthen the instrument. Convergent validity could be examined by comparing the 31-item life skills instrument with other measures with which it should correlate, such as a measure of self-efficacy. Discriminant validity could be determined by measuring the instrument against one with which it should negatively correlate or show no correlation with life skills. Criterion-related validity could be assessed by examining whether those individuals who score higher on the measure are those youths who demonstrate better life skills in 4-H programs than those who do not. Last, empirical data also are needed to determine the minimum number of contact hours necessary before a change in life skill knowledge and behavior can be expected.

## Conclusion

The development of the Life Skills Evaluation System incorporated the four domains of quality evaluation (Joint Committee on Standards for Educational Evaluation, 1994); a utilization-focused framework (Patton, 1997); and the tenants of organizational culture as suggested by Preskill (1991), Stecher and Davis (1987), and Schein (1996). Together these provide a framework for designing a useful evaluation that is congruent with organizational factors and political influences.

Cooperative Extension personnel who participated in the system review and attended training for this system were excited about its potential for providing information about their programs. This was the first organized, statewide system developed to evaluate the impact of the 4-H Youth Development and Family Living Programs. Although the system could only evaluate outcomes based on the selected life skills, this was more information than previously provided. The pilot project for this system was found to be successful in many ways. First, evidence showed that the life skills instrument was valid and reliable for use with both youth and adult populations. Second, the self-reports of participants on the retrospective pretest–posttest indicators demonstrated that many increased their knowledge and behavior of life skills. Again, this was found for both youth and adult populations. Third, the utilization approach to program evaluation (Patton, 1997) was successful in the development and implementation of the Life Skills Evaluation System because faculty and staff had extensive input throughout the process. Finally, faculty and staff who pilot tested this system with their programs reported its ease of use.

The Life Skills Evaluation is the beginning step for Extension programs to assess program outcomes and the potential changes that have occurred in the participants. With the Life Skills Evaluation System, Cooperative Extension personnel can begin to gather and report outcome data on their youth and family programs in the area of life skills. This will provide them with needed information for sharing with staff, government agencies, funding agencies, and constituents, so better decisions

regarding the use of resources and future program directions result.

## References


Cousins, J. B., & Earl, L. M. (1995). Participatory evaluation: Enhancing evaluation use and organizational learning capacity. *The Evaluation Exchange, 1,* 2–3.

Cousins, J. B., & Whitmore, E. (1998). Framing participatory evaluation. *New Directions for Evaluation, 80,* 5–23.

Dumka, L. E., Roosa, M. W., Michaels, M. L., & Suh, K. W. (1995). Using research and theory to develop prevention programs for high-risk families. *Family Relations, 44,* 78–86.

Gamon, J., & Dehegedus-Hetzel, O. P. (1994). Swine project skill development. *Journal of Extension, 32*(1). Retrieved May 30, 2000, from http://www.joe.org/joe/1994june/rb5.html

Gazda, G. M., & Brooks, D. K., Jr. (1985). The development of the social/life-life skills training movement. *Journal of Group Psychotherapy, Psychodrama, & Sociometry, 38,* 1–10.

Greene, J. G. (1988). Stakeholder participation and utilization in program evaluation. *Evaluation Review, 12,* 91–116.

Hendricks, P. (1998). *Developing youth curriculum using the targeting life skills model: Incorporating developmentally appropriate learning opportunities to assess impact of life skill development* (Tech. Rep. No. 4H–137A). Ames: Iowa State University Extension.

Howard, G. S. (1980). Response-shift bias: A problem in evaluating interventions with pre/post self-reports. *Evaluation Review, 4,* 93–106.

Husted, J., & Garland, G. (1977). The validity of the TMR as a measure of achievement in life-adjustment skills. *Journal of Instructional Psychology, 4,* 28–32.

Joint Committee on Standards for Educational Evaluation (1994). *The program evaluation standards* (2nd ed.). Thousand Oaks, CA: Sage.

Landman, J. T., Irvin, L. K., & Halpern, A. S. (1980). Measuring life skills of adolescents: Tests for everyday living (TEL). *Measurement & Evaluation in Guidance, 13,* 95–106.

McLaughlin, J. A., & Jordan, G. B. (1998). Logic models: A tool for telling your program's performance story. *Evaluation and Program Planning, 21,* 191–197.

Myers-Walls, J. (2000). An odd couple with promise: Researchers and practitioners in evaluation settings. *Family Relations, 49,* 341–347.

Olson, J. S., & Smith, F. M. (1997). Assessing adult learners' interest in family and consumer science. *Journal of Family and Consumer Sciences, 89,* 8–12.

Patton, M. Q. (1997). *Utilization-focused evaluation* (3rd ed.). Thousand Oaks, CA: Sage.

Picklesimer, B. K., Hooper, D. R., & Ginter, E. J. (1998). Life skills, adolescents, and career choices. *Journal of Mental Health Counseling, 20,* 272–282.

Poole, M. E., & Evans, G. T. (1989). Adolescents' self-perceptions of competence in life skill areas. *Journal of Youth and Adolescence, 18,* 147–173.

Powell, M. F. (1985). A program of life-life skills training through interdisciplinary group processes. *Journal of Group Psychotherapy, Psychodrama, & Sociometry, 38,* 23–34.

Pratt, C. C., McGuigan, W. M., & Katzev, A. R. (2000). Measuring program outcomes: Using retrospective pretest methodology. *American Journal of Evaluation, 21,* 341–349.

Preskill, H. (1991). The cultural lens: Bringing utilization into focus. *New Directions for Program Evaluation, 49,* 5–15.

Robinson, E. A. R., & Doueck, H. J. (1994). Implications of the pre/post/then design for evaluating social group work. *Research on Social Work Practice, 4,* 224–239.

Rockwell, S. K., & Kohn, H. (1989). Post-then-pre-evaluation. *Journal of Extension, 27*(2). Retrieved February 25, 2000, from http://www.joe.org/joe/1989summer/a5.html

Rossi, P. H., & Freeman, H. E. (1993). *Evaluation: A systematic approach.* Newbury Park, CA: Sage.

Scales, P. (1986). Forward to the basics: Life skills education for today's youth. *Family Life Educator, 5,* 4–9.

Schein, E. (1992). *Organizational culture and leadership.* San Francisco: Jossey-Bass.

Schein, E. (1996). The three cultures of management: Implications for organizational learning. *Sloan Management Review, 38,* 9–20.

Seevers, B. S., Dormody, T. J., & Clason, D. L. (1995). Developing a scale to research and evaluate youth leadership life skills development. *Journal of Agricultural Education, 36,* 28–35.

Smith-Lever Act of 1914 as amended by the Food, Agriculture, Conservation, and Trade Act of 1990, Pub. L. No. 101–624, §1617, 104 Stat. 3732 (1991).

Stecher, B. M., & Davis, W. A. (1987). *How to focus an evaluation.* Newbury Park, CA: Sage.

Tabachnick, B. G., & Fidell, L. S. (1989). *Using multivariate statistics.* New York: HarperCollins.

Telfair, J. (1999). Improving the prospects for a successful relationship between community and evaluator. *New Directions for Evaluation, 83,* 55–65.

United Way of America. (1996). *Measuring program outcomes: A practical approach.* Arlington, VA: Author.

U.S. Department of Agriculture (1999). *CYFAR: Children, youth, and families at-risk annual report.* Washington, DC: Author.

Ward, C. K. (1996). Life skill development related to participation in 4-H animal science projects. *Journal of Extension, 34*(2). Retrieved February 9, 2000, from http://joe.org/joe/1996april/rb2.html

Washington State University. (1998). Washington State Cooperative Extension Mission and Vision. Pullman, WA: Author. Retrieved March 1, 2001, from http://ext.wsu.edu/ce.cahe/mvision/mvision.html

Washington State University Cooperative Extension. (2000). *1998–1999 4-H youth development statistical summary.* Pullman, WA: Washington State University, Cooperative Extension 4-H Youth Development Program.