Nutrition Educator Adoption and Implementation of an Experiential Foods Curriculum

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ABSTRACT
Objective: Describe changes in Nutrition Educator (NE) and Extension Agent (EA) motivation, self-efficacy, and behavioral capability over time after experiential food tasting curriculum training. Identify promoters of curriculum adoption, implementation, and future use.

Design: Mixed methods design including surveys, lesson implementation reports, and interviews.

Setting: New Mexico limited-resource schools.

Participants: Convenience sample of New Mexico Extension NE (n = 42) and their EA supervisors (n = 21).


Main Outcome Measures: Perceived change in motivation, self-efficacy, and behavioral capability from post-training through 8-month post-training; promoters and challenges to curriculum adoption, implementation, and future use.

Analysis: Repeated-measures ANOVA analyzed perceived behavior change over time. Significance was set at $P \leq .05$. Qualitative responses were categorized by theme.

Results: Gains in NE motivation, self-efficacy, and behavioral capability were sustained at 8 months post-training. High adoption/implementation rates (79%) were attributed to strong implementation expectations, observational learning, experiential training elements, and perceived curriculum compatibility. Environmental factors including time constraints, personnel turnover, and scheduling conflicts proved challenging.

Conclusions and Implications: Maximizing curriculum simplicity and compatibility and incorporating behavioral capability, observational learning, and expectations into training support adoption and use. Adaptations and techniques to problem-solve challenges should be provided to new curricula implementers.

Key Words: self-efficacy, experiential, observational learning, nutrition curriculum, Diffusion of Innovations, Social Cognitive Theory (J Nutr Educ Behav. 2013;1-11.)

INTRODUCTION
Numerous school health education programs exist, including delivery of nutrition education curricula. A program's impact is a function of its reach, effectiveness, adoption, implementation, and maintenance over time.1 To improve wider-scale program adoption and implementation, research is needed to identify and measure promoters and challenges.2,3 However, few studies have investigated qualitative aspects of program implementation4 or factors affecting dissemination, adoption, and implementation of nutrition education curricula.5-8

Social Cognitive Theory (SCT) is often used in behavior change interventions.9,10 This framework uses cognitive, environmental, and behavioral variables to explain and describe human behavior and learning.11 Social Cognitive Theory can inform individual behavior change as it relates to wider-scale program adoption and implementation.10 Diffusion of Innovations theory complements SCT by addressing the perceived attributes of the innovation (eg, new curriculum) that strongly affect its adoption and dissemination.12 The perceived attributes of relative advantage, compatibility, trialability, and observability positively influence an innovation's adoption and implementation.
Perceived complexity has a negative influence. A lack of complexity, or simplicity, therefore has a positive impact and will be used to describe this concept. Together, SCT and Diffusion of Innovations theory may help researchers, program planners, and trainers better understand reasons for innovation adoption or rejection.10,13

Cooking With Kids (CWK) is an experiential food and nutrition education program for elementary school students, based on nutrition education and food acceptance research and SCT constructs, that encourages healthy eating behaviors by engaging students' innate curiosity about food through direct experience with fresh, affordable foods.14 The bilingual (Spanish/English) curriculum includes 2-hour cooking lessons and 1-hour tasting lessons. Students prepare foods from cuisines of the world during cooking lessons. Tasting lessons engage students in sensory exploration of 4 fruit or vegetable varieties of the same type of fruit or vegetable; for example, in Apple Tasting, students sample 4 different varieties of apples. Tasting lessons require minimal food preparation and no cooking. Each tasting lesson includes a farmer letter; food history; nutrition information; discussion questions; a chart for fruit or vegetable drawings; and adjective recording, a bar graph to record food preferences. Some lessons include additional activities.15 Lessons align with state academic standards, providing applied learning opportunities in language arts, social studies, math, science, and health education.

Extension programs administered through county offices bring land-grant college and university expertise and resources to the local level through non-formal, non-credit programs.16 The New Mexico Extension provides nutrition education to limited-resource youth and adults through the Ideas for Cooking and Nutrition (ICAN) program, funded by the Supplemental Nutrition Assistance Program Education and the Expanded Food and Nutrition Education Program. Cooking With Kids was well established in most of the Title I schools in Santa Fe, New Mexico by program developers, but statewide dissemination was requested by Extension leadership. The dissemination goal was to integrate CWK lessons into the established ICAN program. Based on the Diffusion of Innovations perceived attributes of relative advantage, compatibility, simplicity, and trialability, initial implementation focused on CWK tasting lesson dissemination through Extension-based paraprofessional Nutrition Educator (NE) training.

The objectives of this study were to (1) describe changes in NEs' and their Family and Consumer Science Extension Agent (EA) supervisors' perceived motivation, self-efficacy, and behavioral capability over time after experiential food tasting curriculum training; and (2) explore SCT constructs and Diffusion of Innovation perceived attributes as promoters of adoption, implementation, and future curriculum use. Social Cognitive Theory constructs of expectancy, self-regulation, behavioral capability, and self-efficacy as addressed through supervisor expectations for implementation, goal-setting, and learning through experiential and observational training elements were explored as promoters of adoption, implementation, and future use of nutrition education curricula. In addition, Diffusion of Innovations perceived attributes of compatibility and simplicity were revealed as promoters of adoption, implementation, and future curriculum use.

METHODS

Study Design and Participants

The study used a mixed-methods design and was approved by the Colorado State University Institutional Review Board. A convenience sample of all available New Mexico State University Extension Service paraprofessional NEs (n = 49) and EA supervisors (n = 21) participated in a CWK tasting lesson training. Written informed consent for follow-up surveys and/or interviews was obtained from 42 NEs (86%) and 21 EAs (100%). Training methods are described elsewhere17 and addressed Diffusion of Innovations perceived attributes and SCT constructs, as noted in Table 1. Training included an overview of CWK, viewing of a 10-minute video describing CWK tasting lesson components, review of the CWK tasting curriculum, and participation in experiential learning activities from the curriculum. Post-training, the 10-minute video and a 49-minute step-by-step video guide to conducting a lesson were sent to participants. The NEs were asked to teach at least 2 series of a blended nutrition education program that included 3 new CWK tasting lessons that focused on fruits and vegetables (eg, Apple Tasting, Root Vegetable Tasting, and Salad Tasting) and 3 traditionally taught ICAN lessons that focused on other food groups and physical activity (eg, Eat Smart, Play Hard lessons on MyPyramid, physical activity, and breakfast).

Instruments, Measures, and Procedures

Surveys. A series of 4 surveys (pre-, post-, 4-month post-, and 8-month post-training) were developed. Separate surveys were developed for NEs and EAs. Survey development, validity, and reliability are described elsewhere.17 The NE pre- and post-training surveys included 5 items addressing motivation, self-efficacy, and behavioral capability (perceived knowledge about teaching CWK tasting lessons, adequate information about the curriculum to teach lessons, and communication skills to manage a fourth-grade classroom) using a 6-point Likert-type scale. A total of 19 previously tested Diffusion of Innovations perceived attribute statements were included to assess potential predictors of future CWK use; these statements used a 5-point Likert-type scale. Additional survey items addressed participant demographic information (7 items), intended future CWK curriculum use (2 items), and thoughts about the CWK curriculum (2 items). Similar questions were asked of the EAs, but their thoughts about the CWK curriculum focused on their supervisory role, because EAs do not regularly teach nutrition education sessions. Participants also wrote self-identified short-term (1-month), medium-term (4-month), and long-term (8-month) goals for implementing CWK as part of the post-training survey.

The 4-month post- and 8-month post-training surveys were administered online (SurveyMonkey, Portland, OR, 2007). A participant was considered a nonresponder if the individual did not complete the survey after...
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<thead>
<tr>
<th>Theory</th>
<th>Element</th>
<th>Definition</th>
<th>Application for Curriculum Adoption and Implementation</th>
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<tbody>
<tr>
<td>Social Cognitive Theory</td>
<td>Behavioral Capability</td>
<td>The knowledge and skill needed to perform the behavior</td>
<td>Video of CWK tasting lesson elements; participation in experiential learning activities from curriculum; video distribution to counties post-training; support from EA and other NE</td>
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<td></td>
<td>Self-efficacy</td>
<td>Confidence in performing the behavior, taking action, and overcoming barriers</td>
<td>Initial implementation of CWK tasting lessons only; participation in experiential learning activities from curriculum; list of tips for working with children and using CWK tasting curriculum; support from EA and other NE; discussion on handling potential barriers</td>
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<td></td>
<td>Self-regulation</td>
<td>Controlling oneself through goal setting, self-monitoring, feedback, and enlistment of social support</td>
<td>Individual (self-identified) 1-, 4-, and 8-month goals for implementing CWK</td>
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<td>Expectancy</td>
<td>Value placed on behavioral outcome</td>
<td>Expectation of implementation from EA and Extension leadership; reports from pilot counties; student, parent, and teacher feedback to NE</td>
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<td>Observational Learning</td>
<td>Behavioral acquisition by watching actions, outcomes of others behavior</td>
<td>CWK tasting lesson elements video; modeling of learning activities from curriculum; video distribution to counties post-training</td>
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<td>Reinforcement</td>
<td>Responses to a person’s behavior that increases the likelihood of recurrence</td>
<td>Initial implementation of CWK tasting lessons only; recognition of accomplishments during and after training; feedback to NE from students, parents, and teachers</td>
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<td>Diffusion of Innovations</td>
<td>Relative Advantage</td>
<td>The degree to which an innovation is perceived as better than the idea it supersedes</td>
<td>Initial implementation of CWK tasting lessons only; establish CWK tasting lessons as exciting addition to current curriculum; no additional reporting required</td>
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<td>Compatibility</td>
<td>The degree to which an innovation is perceived as being consistent with existing values, past experiences, and needs of potential adopters</td>
<td>Initial implementation of CWK tasting lessons only; discussion of how CWK tasting lessons fit with and complemented current curriculum</td>
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<td>Simplicity</td>
<td>The degree to which an innovation is perceived as difficult to understand and use</td>
<td>Initial implementation of CWK tasting lessons only; review of CWK tasting lesson; Frequently Asked Questions list; participation in curriculum’s experiential learning activities</td>
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<td>Trialability</td>
<td>The degree to which an innovation may be experimented with on a limited basis</td>
<td>Initial implementation of CWK tasting lessons only; pilot study; encouragement to use 3 CWK tasting lessons in 2 class series; ability to team-teach 1 series</td>
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Table 1. Continued

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<td></td>
<td>Observability</td>
<td>The degree to which the results of an innovation are visible to others</td>
<td>Reports from pilot counties; CWK tasting lesson elements video; video distribution to counties post-training; feedback to NE from students, parents, and teachers</td>
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CWK indicates Cooking With Kids; EA, Extension Agent; NE, Nutrition Educator.

3 e-mails. Items addressing motivation, self-efficacy, behavioral capability, and thoughts about the CWK curriculum were repeated on follow-up surveys to measure change over time. Closed- and open-ended questions regarding accomplishment of short-term (1 month), medium-term (4 months), and long-term (8 months) goals individually set by NEs and EAs at the training were included in the appropriate post-training survey. In addition, participants reported post-training curriculum use and reasons for its use or nonuse.

Implementation reports. After delivery of each CWK tasting lesson, the NEs recorded the following quantitative variables in an implementation report: lesson duration, number of students present, and lesson plan adherence. Qualitative measures collected on the implementation report included lesson adaptations and reasons for adaptations as well as impressions of what went well and what could have gone better during lesson delivery.

Interviews. At 9 months post-training, interviews with a subset of NEs and EAs were conducted using maximum variation purposeful sampling techniques. Attributes identified for maximum variation sampling included training site, implementation in rural vs urban settings, and level of implementation (none, low, moderate, or high). The semi-structured interview guide was developed to address promoters and challenges of adoption and implementation, as detailed in Table 2. Open-ended questions explored the perceived value of the CWK training, the motivation behind curriculum adoption, experiences using the curriculum, lesson adaptations, implementation promoters and challenges, and intended future curriculum use. A panel of experts reviewed the interview guide for content and face validity. All interviews were conducted by a researcher with experience facilitating interviews with the target audience. Interviews were recorded, transcribed, and uploaded into NVivo 8 (NVivo qualitative data analysis software, QSR International Pty Ltd, Doncaster, Victoria, Australia, 2008).

Data Analysis
Surveys. Descriptive statistics were calculated for demographic variables. Quantitative survey data were analyzed using SPSS (IBM SPSS Statistics, Version 21, IBM Corporation, Armonk, NY, 2012). Significance was set at $P \leq .05$. Examination of skewness and kurtosis indicated that all variables met normality assumptions required for statistical procedures. Independent $t$ tests assessed differences between NEs and EAs regarding future CWK curriculum use as measured by a 6-point Likert scale. Predictors of future CWK use were explored via Pearson correlations and stepwise multiple regression. Repeated-measures ANOVA analyzed perceived change in motivation, self-efficacy, and behavioral capability from post-training through 8 months post-training. Effect size was calculated as a measure of the findings’ practical significance. An effect size ($d$) of $0.20$ is smaller than typical, $0.50$ is typical, $0.80$ is larger than typical, and $\geq 1.00$ is much larger than typical. Qualitative survey responses related to comments and concerns with CWK over time, facilitators and barriers to accomplishing goals, and the likelihood of using CWK in the future were categorized by themes and analyzed concurrently with quantitative data.

Implementation reports. Descriptive statistics including means, frequencies, and ranges were calculated for lesson length, class size, percent of lesson implemented, number of NEs who implemented lessons, and number of CWK tasting lessons and series delivered. Qualitative responses regarding lesson adaptations, reasons for adaptations, and impressions of what went well and what could have gone better during lessons were categorized by themes and analyzed concurrently with quantitative data.

Interviews. Interview transcripts were coded inductively and deductively using directed content analysis. Coders came to consensus on interview question–level coding during an initial pass through each document, with a second pass for further coding refinement to address Diffusion of Innovations and SCT constructs. Two coders independently coded 6 transcripts to assess reliability. Inter-coder reliability was calculated using percentage agreement methods. Interview coding reliability using percent agreement was 86% to 100%, indicating good agreement.

Qualitative transcript data were analyzed concurrently with relevant quantitative data from surveys and implementation reports.

RESULTS
Training participant demographics are briefly described here. The NEs ($n = 42$) were female (100%) and predominantly Hispanic (55%), and typically had < 2 years of college education (60%). The EAs ($n = 21$) were female (100%), held graduate
degrees (80%), and were predominantly non-Hispanic (61%). Nine months post-training, a subset of NEs (n = 12) and EAs (n = 7) was interviewed. Interviewees were predominantly non-Hispanic (58% of NEs and 71% of EAs). The NE interviewees typically had < 2 years of college (58%), whereas the EAs interviewed held graduate degrees (100%). More complete demographic descriptions are available.  

Changes in Motivation, Self-efficacy, and Behavioral Capability

Motivation to use CWK, self-efficacy, and behavioral capability improved
in NE and EA as a result of a 3-hour face-to-face training. Increases in NE motivation, self-efficacy, and behavioral capability (perceived knowledge about teaching CWK tasting lessons, adequate information about the curriculum to teach lessons, and communication skills to manage a fourth-grade classroom), as measured through 6-point Likert-type scale survey questions, were sustained over 8 months post-training (Figure 1). The post-training linear trends for motivation ($F_{[1,26]} = 1.00; P = .33$), self-efficacy ($F_{[1,26]} = 2.81; P = .11$), adequate information to teach CWK tasting lessons ($F_{[1,26]} = 1.15; P = .29$), and communication skills ($F_{[1,26]} = .81; P = .38$) were not significant, which indicated that the improvements in these areas were sustained post-training. The positive post-training linear trend for perceived knowledge about teaching CWK tasting lessons was significant ($F_{[1,26]} = 5.38; P = .03$), which indicated continued improvement post-training. Increases in EAs' motivation, self-efficacy, and behavioral capability (including perceived knowledge about and adequate information to teach CWK tasting lessons) were also sustained over 8 months post-training (Figure 2). The post-training linear trends for motivation ($F_{[1,10]} = 3.55; P = .09$), self-efficacy ($F_{[1,10]} = 0.00; P = 1.00$), knowledge ($F_{[1,11]} = 2.57; P = .14$), and adequate information to teach CWK tasting lessons ($F_{[1,11]} = 0.00; P = 1.00$) were not significant, which indicated that the improvements in these areas were sustained post-training.

Adoption

Table 3 lists lesson delivery details collected from implementation reports. Adopters ($n = 33; 79\%$) did not significantly differ from non-adopters in demographic characteristics. Decisions to adopt, as measured through survey and interview questions, were positively influenced by experiential and observational learning training elements, compatibility with NE values and needs, and implementation expectations from EAs and state-level program administrators. Reasons for non-adoptions included NE retirement or leaving the position, vacant EA position, training new NEs, inability to recruit, and family or personal issues.

Incorporate behavioral capability, observational learning, and expectancy elements into para-professional training on new curricula.
Implementation Promoters and Challenges

Training elements. Nine months post-training, NE and EA interviewees remembered many training elements including the CWK program overview and CWK curriculum manual review, and watching a DVD of a CWK tasting lesson being implemented with students in a fourth-grade classroom. Training that included NE and EA active participation in a tasting lesson was mentioned often as an implementation promoter. Interviewees referenced observational learning that occurred from viewing CWK DVDs. Viewing the DVD at training increased the curriculum’s perceived simplicity. One NE stated,

...I felt that the [10-minute] DVD was extremely powerful because I was watching it in action. When I was hearing about it prior to watching it, I felt that it was going to be this humongous curriculum that I would have to study in such detail so that I would be comfortable with it. Seeing how she did it, I realized that it was very doable...

Some NEs reported viewing the DVDs before teaching their first lesson as reinforcement of tasting lesson teaching methods.

The interviewed NEs and EAs generally felt that training prepared them for CWK tasting lesson implementation. However, some felt less prepared to teach lessons to children because the training was directed at adults; observation or practice with the fourth-grade target audience would have been ideal. In addition, some EAs commented that NE experience may have affected perceived curriculum simplicity. Nutrition Educators who were new to their jobs were also trying to learn other aspects of the position, whereas experienced NEs only had to learn the CWK curriculum.

Self-regulation and implementation expectations. Common NE short-term (1-month) goals included...
Maximize simplicity of new curricula and compatibility of curricula with organizational priorities before adoption and implementation.

The curriculum’s simplicity and compatibility with existing programming were high. The NEs and EAs thought the curriculum was well-organized, user-friendly, and easy to understand, and provided resources needed to conduct lessons. Simplicity increased with teaching repetition. However, interviews revealed that some curriculum elements, including the farmer letter and graphing exercise, which aligned with language arts and math educational standards, were sometimes perceived as complex. For example, student reading levels varied, which increased complexity for NEs in classrooms with weaker readers. Some NEs found it difficult to use the bar graph because students would vote for more than 1 favorite fruit or vegetable. Responses from surveys and interviews indicated that NEs and EAs felt that the CWK curriculum complemented existing programming owing to its experiential nature, simplicity, inclusion of food origins and production, and integration with academic subjects. In addition to compatibility with current programming, the CWK curriculum was compatible with NE values and views. During interviews, NEs with high implementation levels commented:

> It really fit me to do a presentation like this, me personally, with my aspiration in life.

> ...I remember thinking, “Oh my gosh, this is exactly up my aisle. This is the full experience of food.

Environmental factors. Support was a key implementation promoter revealed through survey, implementation report, and interview responses. Examples of support included teachers who actively participated in lessons, encouraged students to taste, and maintained classroom order. Some teachers informed students that the lesson activities would be included as a gradable item in a related subject or extended lessons into other academic subjects that supported success. Familiarity with a teacher or school made it easier to schedule lessons, request additional time or assistance, and recruit future classes. Support from EAs in the form of praise...
and lesson assistance was important. Support from other NEs typically involved lesson assistance or discussions to solve problems. Some NEs had greater support to procure specific fruit and vegetable varieties; lack of this support often led to fruit or vegetable substitutions.

Via implementation reports and interviews, NEs reported that lessons went well when students were helpful, familiar with the lesson process, and engaged. Nutrition Educator familiarity with lessons, arranging for adult assistance during lessons, preparing produce before lessons, and making extra time to set up and get organized also contributed to NE feelings of success.

When asked on implementation reports and during interviews what would aid implementation, NEs commonly responded that additional time in the classroom for each lesson would be helpful. Other suggestions included smaller class size, additional time between classes for preparation and organization, more attentive and motivated students, and greater teacher participation and support. Some NEs and EAs expressed concerns during interviews about long-term compatibility of the program. During the intervention, the blended program consisted of 3 ICAN lessons and 3 CWK tasting lessons, for 6 total contact hours. This exceeded the ICAN minimum of 4 contact hours. Without resolution of this disparity, long-term tasting curriculum implementation may diminish.

Curriculum Adaptations

Survey, implementation report, and interview responses revealed several curriculum adaptations. The NEs sometimes substituted different fruits or vegetables. For example, if purple carrots were unavailable NEs used another root vegetable, such as beets. Other NEs chose to incorporate different fruits or vegetables to provide new tasting experiences. Time constraints were the most common reason for other adaptations and typically included leaving out some writing, reading, or drawing activities from curriculum implementation. The NEs would often encourage students to complete these activities at home; some classroom teachers extended these activities into the academic curriculum and/or assigned them for homework. To increase time for classroom activities, some NEs prepared fruits and vegetables ahead of time. Other adaptations revealed during interviews included adding more information about history or nutrient content of fruits or vegetables, using local maps showing fruit or vegetable crop production, and adding a cooking component. Some NEs used CWK tasting components to adapt ICAN lessons for other age groups. For example, NEs sometimes incorporated bar graph or math or sensory exploration components into ICAN lessons for younger grades.

Future Curriculum Use

Mean post-training survey responses indicated that NEs and EAs were very likely to use CWK tasting lessons in the future (5.57 ± 0.67 and 5.11 ± 0.94, respectively, on a 6-point Likert scale). The NEs were more likely to use tasting lessons in the future compared with the EAs, t(59) = 2.22, P = .03, d = 2.22, indicating a much larger than typical effect. Qualitative survey and interview responses indicated that NEs and EAs were likely to use CWK tasting lessons in the future because lessons were enjoyed, enhanced current programming, and benefited students. Interview responses indicated varied future use of CWK tasting lessons including continuation with the blended CWK/ICAN format, implementation of CWK tasting lessons with adult audiences, and implementation of the full CWK curriculum (cooking and tasting lessons). Some survey and interview respondents were hesitant about using CWK in the future because of the longer time commitment required, perceived higher food costs, and uncertainty about future implementation expectations.

Summated scales were calculated from pre- and post-training survey responses to 19 Diffusion of Innovations perceived attribute statements. Some Diffusion of Innovations perceived attribute scales were correlated with likelihood of future curriculum use: relative advantage (r = 0.57; P = .002), simplicity (r = 0.37; P = .04), and trialability (r = 0.39; P = .03). Respondents with high summated scores for relative advantage, simplicity, and/or trialability indicated a high likelihood of using tasting lessons in the future. The relative advantage correlation is medium to large; simplicity and trialability correlations are small to medium.19 Stepwise multiple regression assessed the best predictors of future CWK tasting lesson use and revealed that relative advantage predicted likelihood of using tasting lessons (P = .003). Summated scales for relative advantage were negatively correlated with the number of CWK tasting lessons delivered by NEs (r = –0.39; P = .03), which indicated that respondents with high relative advantage scores implemented fewer tasting lessons. Stepwise multiple regression revealed no predictive factors for number of tasting lessons delivered by NEs.

DISCUSSION

Sustained change in NEs’ motivation, self-efficacy, and behavioral capability during follow-up and increased knowledge post-training is likely the result of the high NE adoption rate (79%) and continued implementation. Low adoption rates (35%) have been reported with passive dissemination plans.24 In contrast, this study used observational learning, interpersonal channels, and interactive training, all factors in increasing implementation rates.1,25

Adoption was likely influenced by implementation expectations of EAs and state-level program administrators as well as inclusion of experiential and observational learning training elements. Hands-on participation in a lesson, DVDs, and curriculum were highlighted during interviews as the most helpful resources, which supports earlier findings.17 High perceived compatibility of the CWK curriculum likely affected adoption, implementation, and plans for future use. In particular, compatibility with NE values and views on nutrition education positively influenced implementation, which supports others’ findings that perceived compatibility with an organization’s existing structure and individual teaching methods...
may affect adoption and implementation.24-27 Although implementation fidelity was high (93%), this finding was tempered because of the self-report nature of the measure.28

Goal setting can influence program implementation.9 However, this self-regulation technique alone did not appear to have a significant effect in this study because interviewees did not bring up goal setting as an implementation promoter. Nutrition Educator and EA individually set goals tended to mirror the implementation expectations set by state-level program administrators. Clearly defined implementation expectations set by supervisors may hinder individual goal setting for NE.

Stepwise multiple regression identified relative advantage as a predictor of future curriculum use. Relative advantage summed scales were negatively correlated with the number of CWK tasting lessons delivered. This means that the more strongly NEs agreed with the importance of experiential learning in nutrition education, the fewer CWK tasting lessons they delivered. It is possible that the statements that made up the relative advantage summed scale were not specific enough to detect differences between CWK and ICAN curricula, because both curricula are experiential. This finding may also be explained by NE preference for ICAN owing to familiarity with that program. Finally, this equivocal finding may be because during training, CWK was framed as compatible with the ICAN program, as opposed to competing with the existing program.

Time constraints were among the most common challenges encountered, which is consistent with others’ reports.25,29,33 Additional challenges included environmental factors such as scheduling conflicts, competition with other programming and standardized testing, and personnel turnover, which corroborate factors found by others.27,29,34 Study strengths include multiple sources of data and follow-up of NE and EA over 9 months, which helps provide a more comprehensive picture of adoption and implementation of a nutrition education curriculum. Limitations of the study include the use of a convenience sample and self-report measures. A power analysis to determine the number of participants needed to detect a significant difference, if there was one, was not conducted. Therefore, nonsignificant results should be interpreted with caution, because there may have been too few participants to detect a difference.

IMPLICATIONS FOR RESEARCH AND PRACTICE

These results highlight the importance of using appropriate theory and learning techniques during training. In this study, SCT constructs of behavioral capability, self-efficacy, observational learning, and expectancy influenced CWK curriculum adoption and implementation. Diffusion of Innovations perceived attributes of simplicity and compatibility affected adoption and implementation. Incorporating problem-solving techniques during training for common challenges may minimize their impact on implementation.

Recommendations for practitioners seeking to enhance curriculum adoption and implementation by paraprofessional educators include the following:

1. Incorporate behavioral capability, observational learning, and expectancy elements into training. Guided role-playing, lesson practice, and observation of implementation with the target audience are strategies that may increase behavioral capability and self-efficacy. Continued observational learning via DVDs for subsequent viewing may augment implementation. In addition, supervisor implementation expectations appear to influence paraprofessional educator behavior.

2. Maximize curriculum perceived attributes before adoption and implementation. To the extent possible, new curriculum and related reporting processes should be simplified. Framing new curriculum as compatible with existing organizational structure and/or curricula may be critical for successful adoption and implementation.

3. Supply implementers with potential adaptations and problem-solving techniques to minimize challenges. For example, furnish a list of adaptations for common challenges such as time limitations. Provide a recruitment letter detailing relative advantage, compatibility, and simplicity of the new curricula to assist in recruitment.

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