eLearning and Nutrition Education for Lower-Income Audiences

Society for Nutrition Education and Behavior Conference

July 23, 2017

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Program Overview

Development of eLearning Nutrition Education Programs

Implementation of eLearning Nutrition Education Programs

Evaluation of eLearning Nutrition Education Programs

Questions and Answers

Development of eLearning Nutrition Education Programs

Development of Online Nutrition Education Program for EFNEP Audience

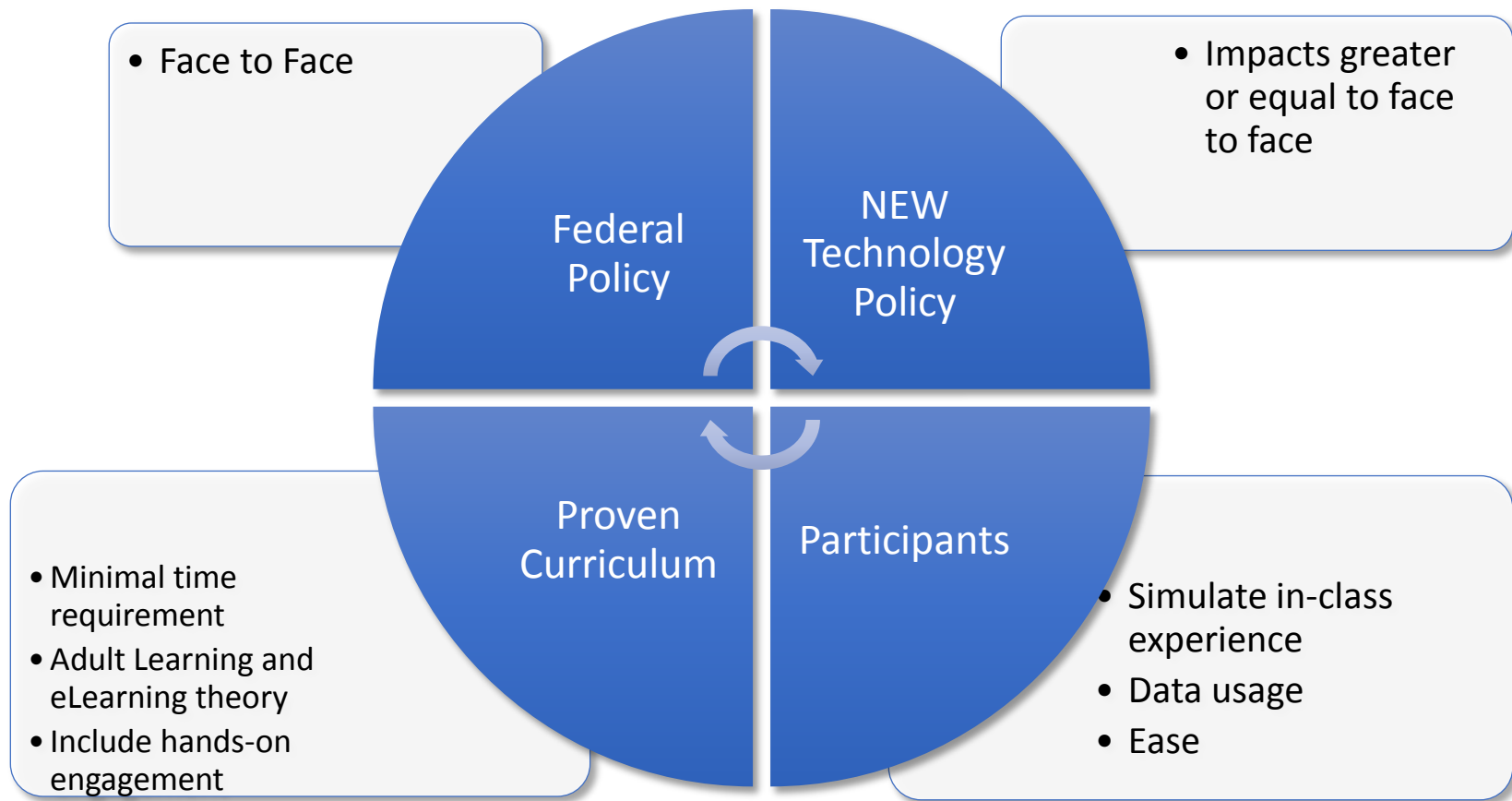Lorelei Jones

EFNEP Coordinator

North Carolina State University

5 Tips to eLearning Development Success

1. Know your audience

2. Be aware of the costs

3. Not all LMS are created equal

4. Identify data that will need to be collected

5. Technicians do not know nutrition – devote enough time to refine apps, games, etc.
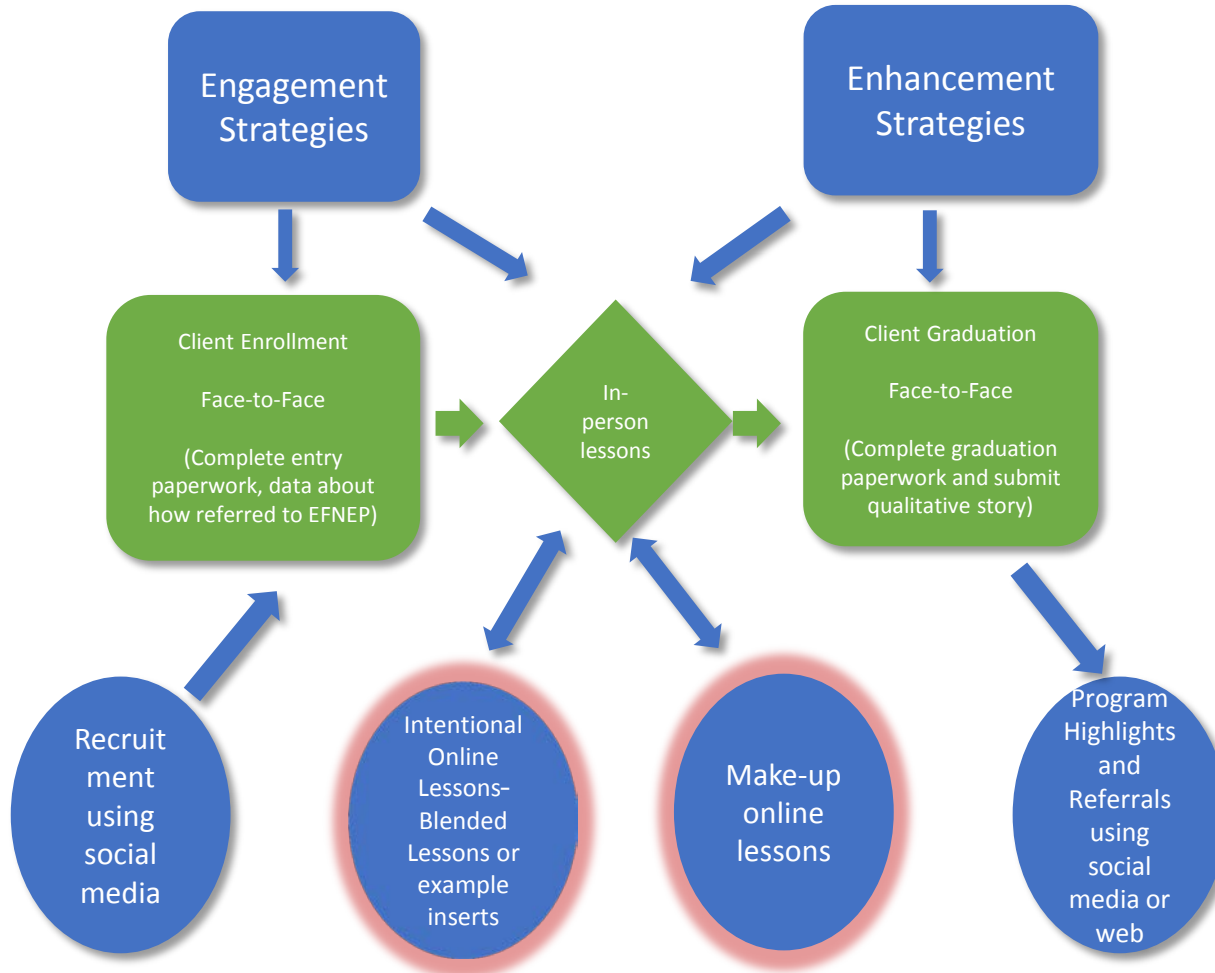
Planning

- Face to Face

- Impacts greater or equal to face to face

Federal Policy

NEW Technology Policy

Proven Curriculum

Participants

- Minimal time requirement
- Adult Learning and eLearning theory
- Include hands-on engagement

- Simulate in-class experience
- Data usage
- Ease

Legend:

Green – Standard Programming

Blue – Potential technology additions

Yellow – Research foundation

Note: Technology does not replace standard programming; rather it complements it

Engagement Strategies

Enhancement Strategies

Client Enrollment

Face-to-Face

(Complete entry paperwork, data about how referred to EFNEP)

In-person lessons

Client Graduation

Face-to-Face

(Complete graduation paperwork and submit qualitative story)

Recruitment using social media

Intentional Online Lessons– Blended Lessons or example inserts

Make-up online lessons

Program Highlights and Referrals using social media or web

Strengthening the Evidence and Determining Best Practices through Research

EFNEP
EXPANDED FOOD AND NUTRITION EDUCATION PROGRAM

NC STATE UNIVERSITY
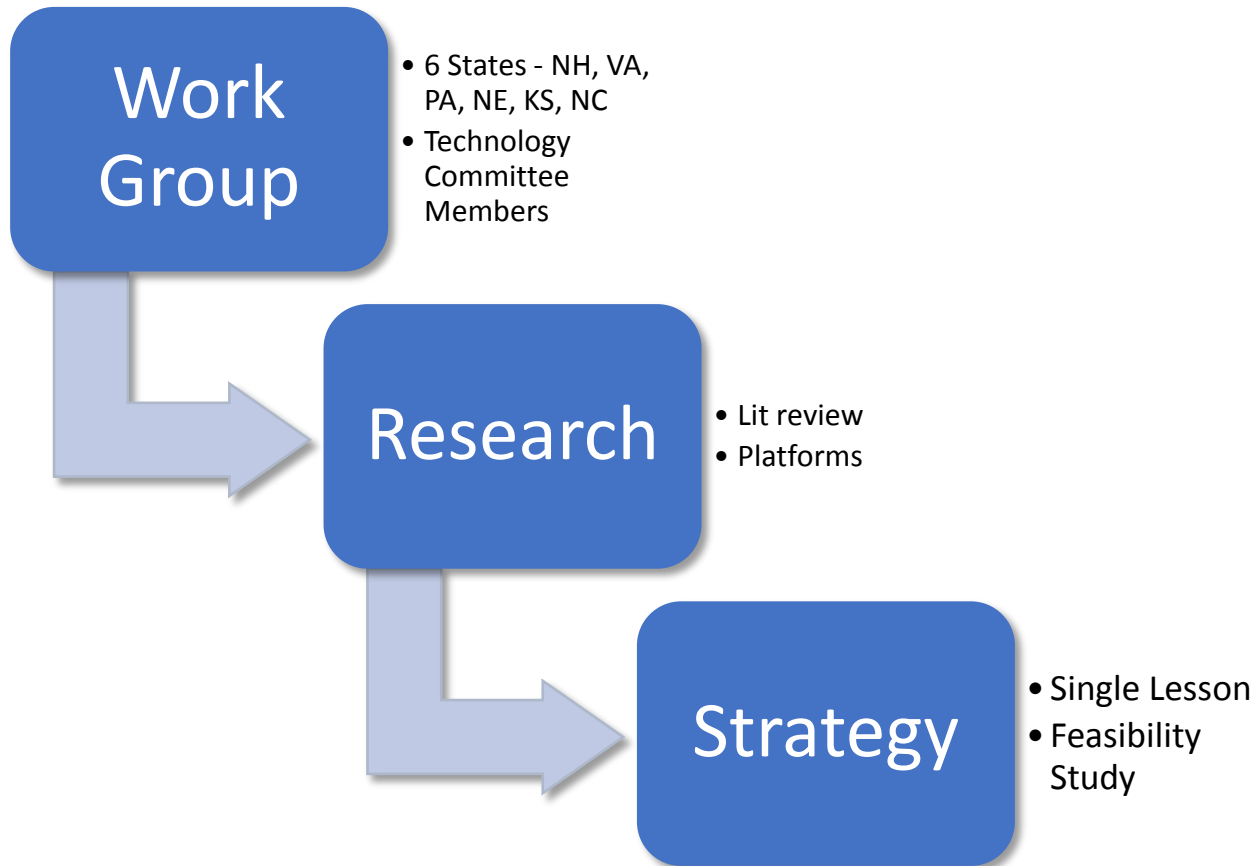
Development Process

- Curriculum elements that produce positive participant response
  - Videos
  - Conversational
- Smooth transition between face-to-face and online lessons
- Food and Physical Activity engagement included
- Behavior change/practice of learning encouraged

Knowledge Vision

Digital Chalk

Moodle

Feasibility Testing

Participant attends current seated class

- Seated classes are recruited for study
- Identification system for study participants that separates data by state – Unique state login and WebNEERS identification number for participants

Participant asked to participate in online study and provided login information for online lesson

- Participants complete the "Plan: Know What's for Dinner" lesson and are asked to participate in online lesson following this pre-requisite
- EFNEP Educator provides instructions and link for online lesson to participant by email.
- EFNEP educators will collect and report number of participants who chose to participate and those who do NOT to participate.

Participant completes online lesson

- Branding by University
- Paraprofessional notified that participant has started lesson
- Knowledge check statistics
- Paraprofessional notified that participant has completed lesson
- Participant receives certificate of completion
- Time on task data

Post-lesson participant survey and evaluation

- Participants are asked to complete survey regarding their experience using online lesson.
- EFNEP evaluation data for online participants compared to traditional participants
- Results used to inform revision of pilot lesson and continuation of lesson translation

EFNEP
EXPANDED FOOD AND NUTRITION
EDUCATION PROGRAM

NC STATE
UNIVERSITY

Development and Formative Evaluation of an eLearning Nutrition Education Program for SNAP-Ed Eligible Adults

**Sarah Stotz, PhD, RD, CDE, LD,
Jung Sun Lee, PhD, RDN,
and for the University of Georgia SNAP-Ed Program**

Department of Foods and Nutrition
University of Georgia
July 23, 2017

University of Georgia SNAP-Ed eLearning Nutrition Education Program: *Food eTalk*

- Develop evidence-based smartphone-accessible nutrition education classes tailored to the unique needs of SNAP-Ed eligible Georgian adults
- Serve an increasingly tech savvy audience

University of Georgia SNAP-Ed:
Food eTalk

- Audience: SNAP-Ed eligible adult Georgians

- Content based on validated nutrition education curriculum in Georgia[1] (*Food Talk*, EFNEP)

- DASH diet, Health Belief Model, eLearning theory, adult learning theory

- Interactive, short lessons, user-friendly interface, mobile-first design, augmenting videos[2]

- Southern influence

[1]Hanula GM. (2009) Evaluation of a Community Nutrition Intervention to Decrease Hypertension Risk. Dissertation - The University of Georgia.

[2]Stotz SA, Lee JS. (2017) Development of an Online Smartphone-Based eLearning Nutrition Education Program for Low-Income Individuals. *Journal of Nutrition Education and Behavior*. (In Press)

Food eTalk Development: Iterative Design Approach
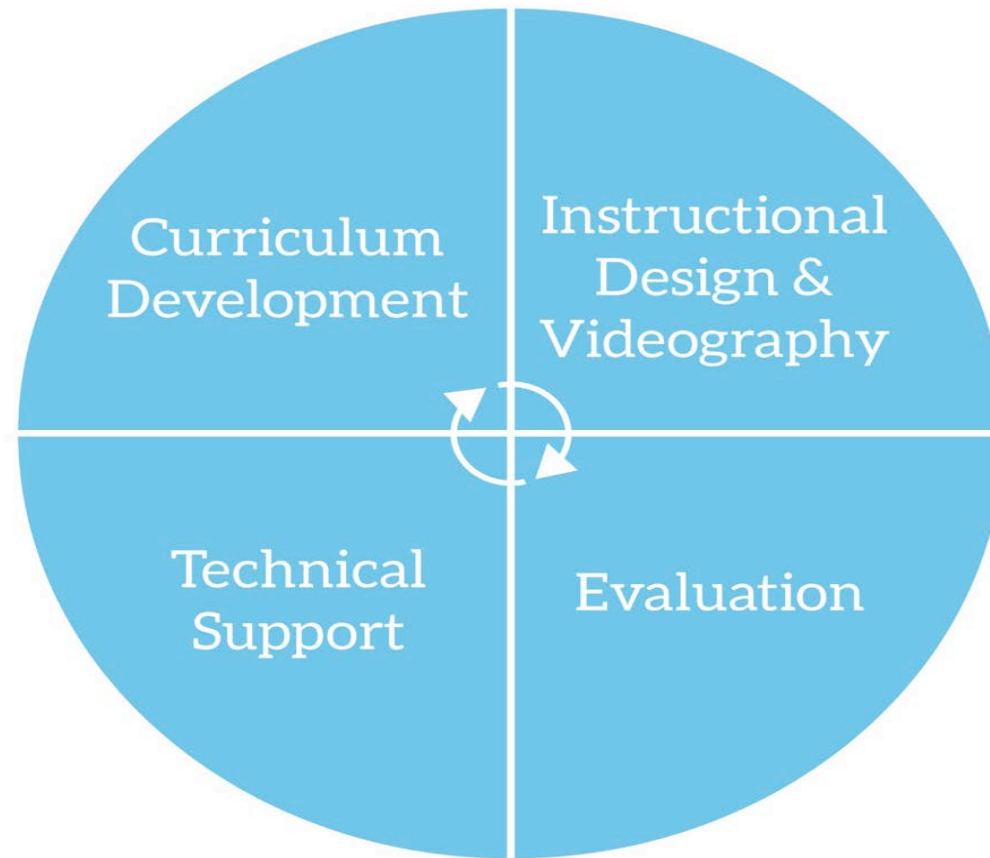
Food eTalk Development: Key Personnel and Resources Needed

- Nutrition education experts
- eLearning designer

- eLearning authoring tool
- Videography equipment
- Video editing software
- Video storage space

- eLearning designer
- Programmer
- Videographer
- Photographer
- Graphic artist/ logo artist
- Voiceover actor
- Actor (on-screen)

Curriculum Development

Instructional Design & Videography

Technical Support

Evaluation

- Website
  - Domain Name
  - Server Space
  - Website Maintenance Plan
- Learning Management System
- eLearning design maintenance plan

- Web developer
- Hosting website or Learning management system (LMS) expert
- Hosting server staff

- Equipment: Mobile devices (smartphone and/or tablet)
- Data plan for devices
- Incentive for participants
- Travel
- Data analysis software (e.g., Atlas.ti, SAS, etc)
- Assessment Tools
- Data Colletion Systems

- Evaluation experts
- Formative evaluation staff
- Process and outcome evaluation staff

Food eTalk Development: Budget

Item	Details	Cost
Personnel	Dietitian, eLearning designer, website developer, video production team	$106,000
Equipment	eLearning authoring program, website domain, video production equipment, video storage equipment, learning management system subscription	$9,576
Evaluation	Smartphones, tablets, cases, data plans, incentive gift cards	$12,400
Total		$127,976

Food eTalk Development: Funding

- Expensive, non-traditional budget items
- Justification to funder for unique resources and personnel
- Sources:
  - USDA SNAP-Ed
  - RNECE-South Innovation Sub-Award
  - Georgia Nutrition Council

Food eTalk Demonstration

Food eTalk Development: Timeline

Task	Time	Comments
Curriculum development	~ 1 month	Adapted from Food Talk
Hire project team	~ 2 years	Funding delays stymied hiring process
eLearning program development	~1.5 years	Iterative process
Prototype testing	~ 3 months	Collaboration with UGA Cooperative Extension
Revisions	~ 4 months	Based on prototype testing
Integration of eLearning program, website, LMS	~ 6 months	Crucial step not met for formative evaluation
Internal testing	~ 2 months	Graduate student support
Launch/maintenance	ongoing	Tech support staff

Food eTalk Development: Formative Evaluation

Mixed-methods formative evaluation to explore adult SNAP-Ed eligible Georgians' experience of an eLearning nutrition education program.[3]
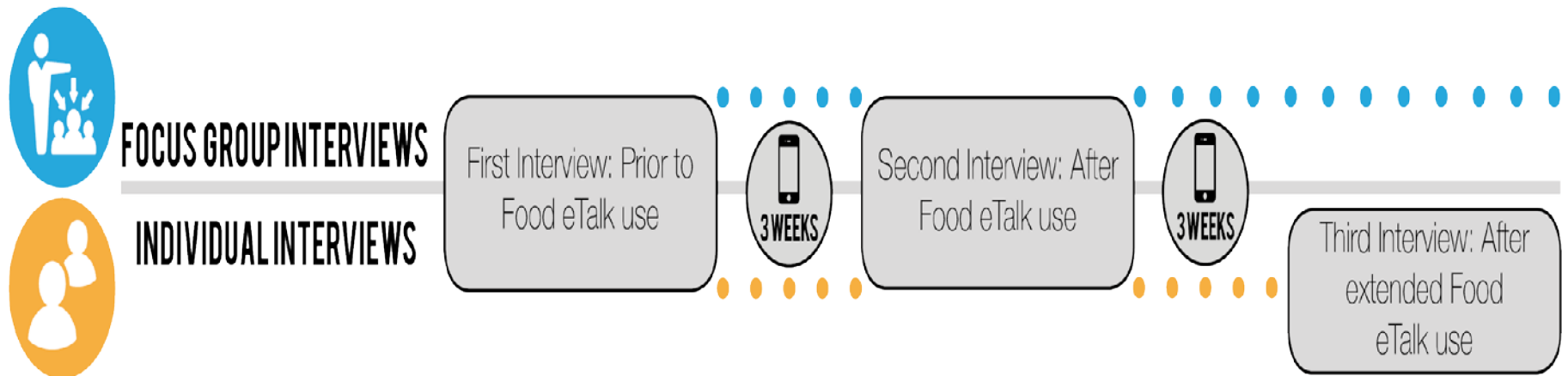
[3]Stotz SA, Hall J, Lee JS.*A Mixed Methods Formative Evaluation using SNAP-Ed eligible Adult Georgians' Experience with a Smartphone-Based eLearning Nutrition Education Program.* (Under Review). Journal of Nutrition Education and Behavior submitted May 25, 2017.

Food eTalk Development: Formative Evaluation Key Findings

- Traditional smartphone use to inform eLearning format
  - Short bouts of use
  - Specific learning topics
  - Video-based, entertaining
- Motivation and barriers
  - Voluntary nature of SNAP-Ed
  - Special consideration for relevant content to increase motivation to engage
  - Consider external incentives
  - Unique approaches to address barriers to healthful eating

5 Tips to eLearning Nutrition Education Development

1. Know your audience
2. Be aware of the costs
3. Development takes longer than you expect
4. Identify data that will need to be collected; not all LMS are created equal
5. Information tech experts do not know nutrition

Implementation of eLearning Nutrition Education Programs

Tips for Working with Developers

1. **Provide a lot of detailed direction about what you want** – look, feel, user flow, appropriateness of photos/imagery, voice talent, etc.

2. **Maintain open communication** with frequent check-ins (at least 1x/week)

3. **Work iteratively**, test often

4. **Expect tasks to take longer than estimated**

5. **Prioritize** tasks/features

EatFresh.org Mini Course
5-10 minute online SNAP-Ed lessons

- **Direct Education**: self-paced online course

- English & Spanish

- Mobile-friendly

- 15 total topics

- Pre/post questionnaires: confidence, intent to change
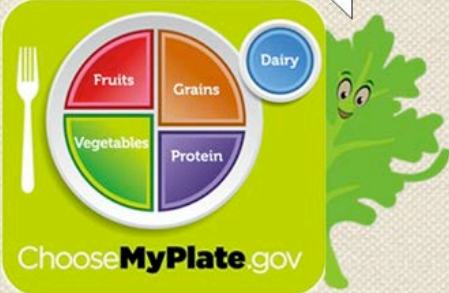
Users help characters overcome challenges in making healthy choices

Quick activities reinforce lessons learned in each topic

Bright Spots

- ## Use as pre-training tool to quickly ramp up staff
  - Able to dig deeper during an in-person training

- ## Provide technical assistance and presentations to partners
  - Webinars, calls, trainings, demo videos, guides/lesson plans

- ## Develop supportive resources for use in different settings
  - Ex: 60- and 90-minute lesson plans for computer labs

Bright Spots

- ## Include EatFresh.org Mini Course in county work plans
  - Ex: "Activity 3.1: Use existing and developing technology to reach 200 SNAP participants in Year 1. Messages will encourage participants to learn more at EatFresh.org and take the EatFresh.org Mini Course."

- ## Top-down approach
  - Ex: UC CalFresh, Catholic Charities of California, WIC (pending), Department of Aging and Adult Services training contract

Does your County IWP include EatFresh.org?

County with EatFresh.org included in FFY17-19 Integrated Work Plan (IWP)

Questions? Ideas? Contact Jessica Silldorff at jessica@leahspantrysf.org for support.
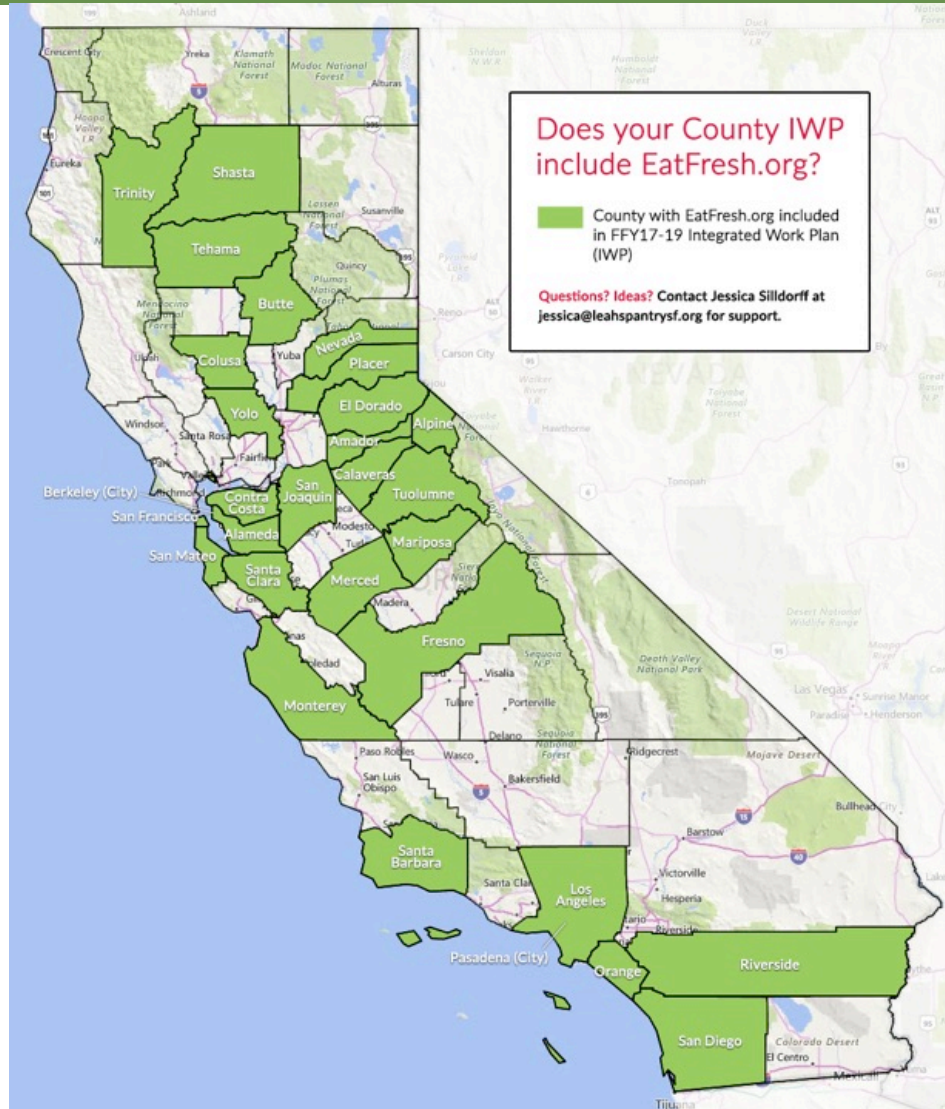
Challenges

- Voluntary, preventive intervention

- Computer skills barriers

- Low return rate
  - Incentives help!

- Lack of partner promotion follow-through
  - Stages of Change issue for both partners and our users

Partner with Us!

Contact us if you are interested in using the EatFresh.org Mini Course in your program or for a research project.

We would love to work with you!
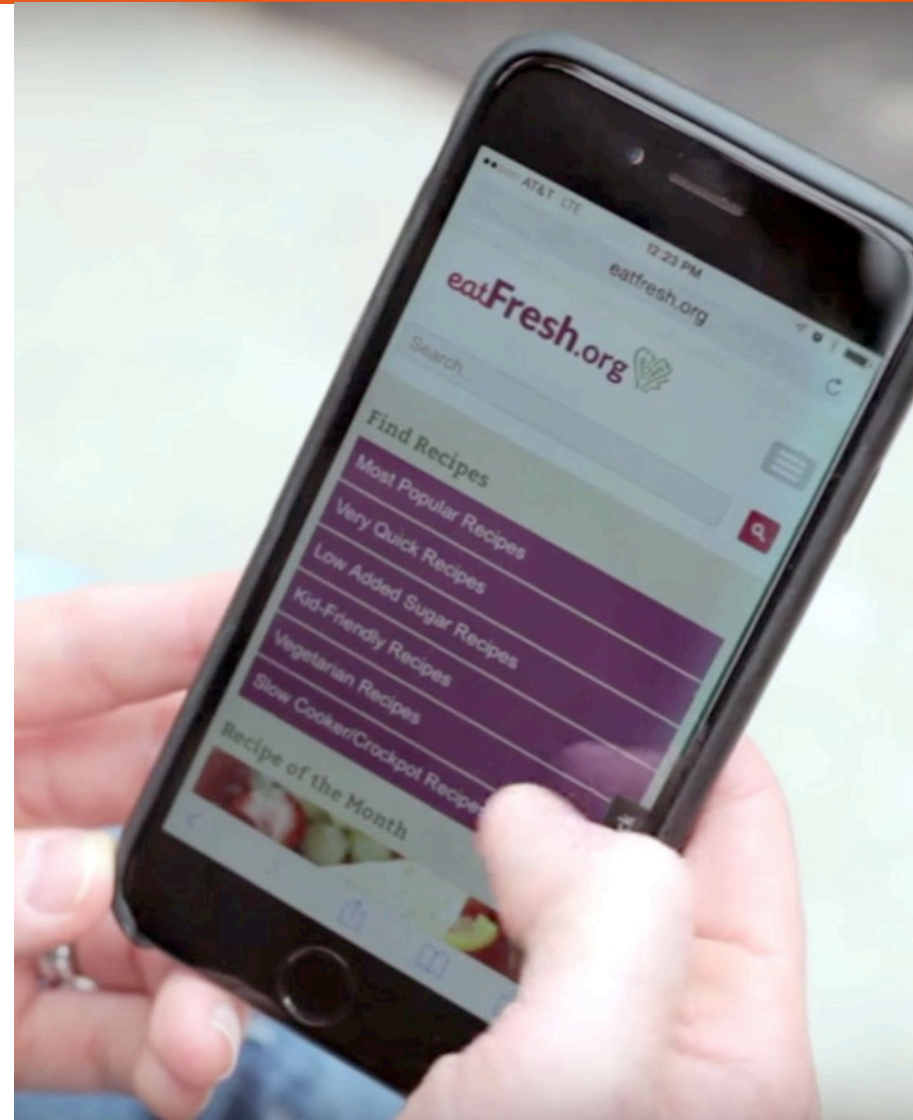
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Evaluation of eLearning Nutrition Education Programs

ONLINE WIC NUTRITION EDUCATION: DOES IT WORK?

Lauren Au, PhD, RD

Assistant Researcher

University of California, Nutrition Policy Institute

July 23, 2017

Two Randomized Trials
In-person Group vs. Online

Limit sodium to less than
2300 mg = 1 teaspoon
each day

What Can You Do To Reduce Your Salt?

Adults and children of all ages can improve their heart health and decrease their risk for health problems by reducing salt. Limit sodium to less than 2300 mg each day.

Choose a goal you think will work for you and your family to reduce salt:

Limit or avoid eating processed and packaged foods. Most of the sodium we eat is found in processed foods, such as chips, pizza, hot dogs, bacon, sausage and lunch meats.

Read the labels. Read the "Nutrition Facts" and the ingredient list on the labels to find packaged and canned foods low in sodium.

Eat home cooked foods. Preparing your own foods allows you to limit the amount of salt that you add.

Cook with spices and herbs instead of salt. Use garlic, curry, black or red pepper, cloves, mint, cumin, basil, ginger, parsley, cilantro, rosemary, vinegar or lemon juice.

Limit high sodium condiments and sauces. Use less soy sauce, ketchup, pickles, olives, salad dressings, blended seasonings and seasoning packets.

Choose fresh vegetables and fruits. They are naturally low in sodium.

PHFE WIC Program
1-888-942-2229   www.phfewic.org
www.WICOnlineEducation.org
This institution is an equal opportunity provider.

Measurements

Knowledge

Attitudes

Behaviors

Satisfaction
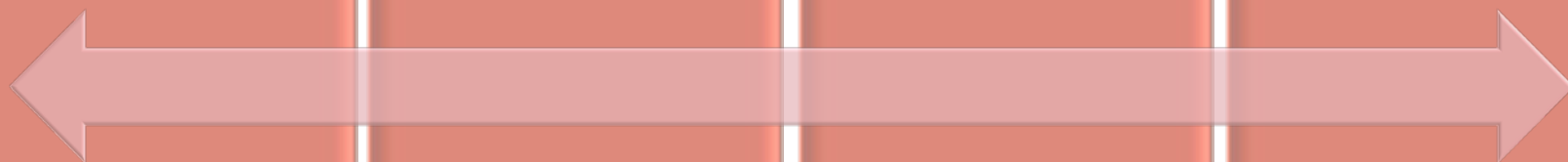
Timeline
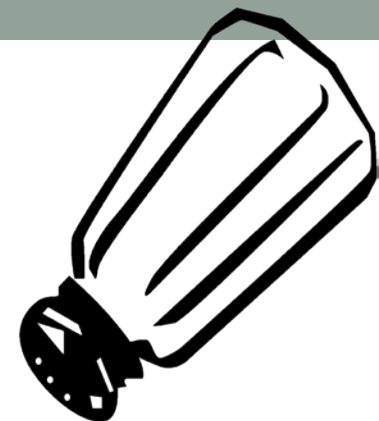
Recruitment & random assignment

Nutrition education

2-4 month follow-up

9 month follow-up
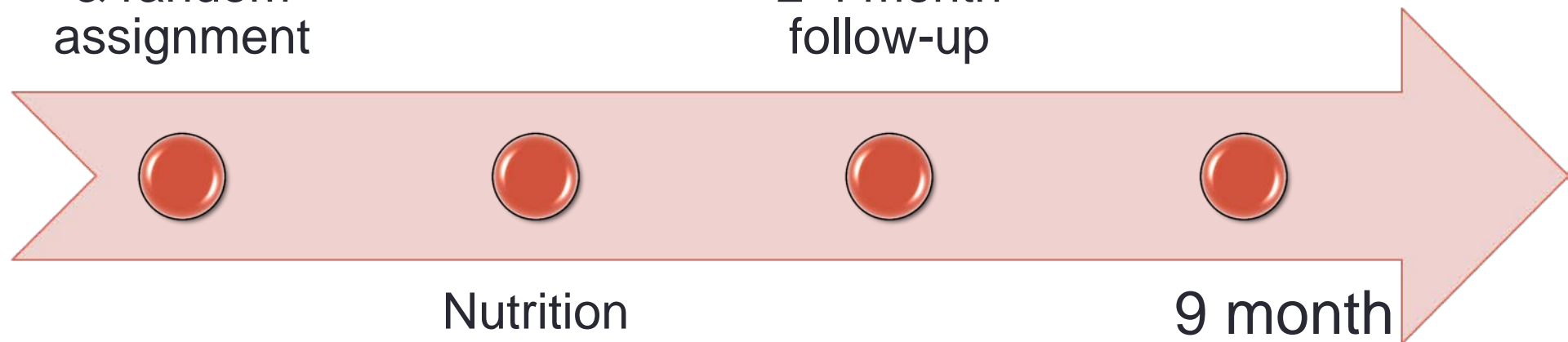
Knowledge Increases
Main source of salt is processed foods
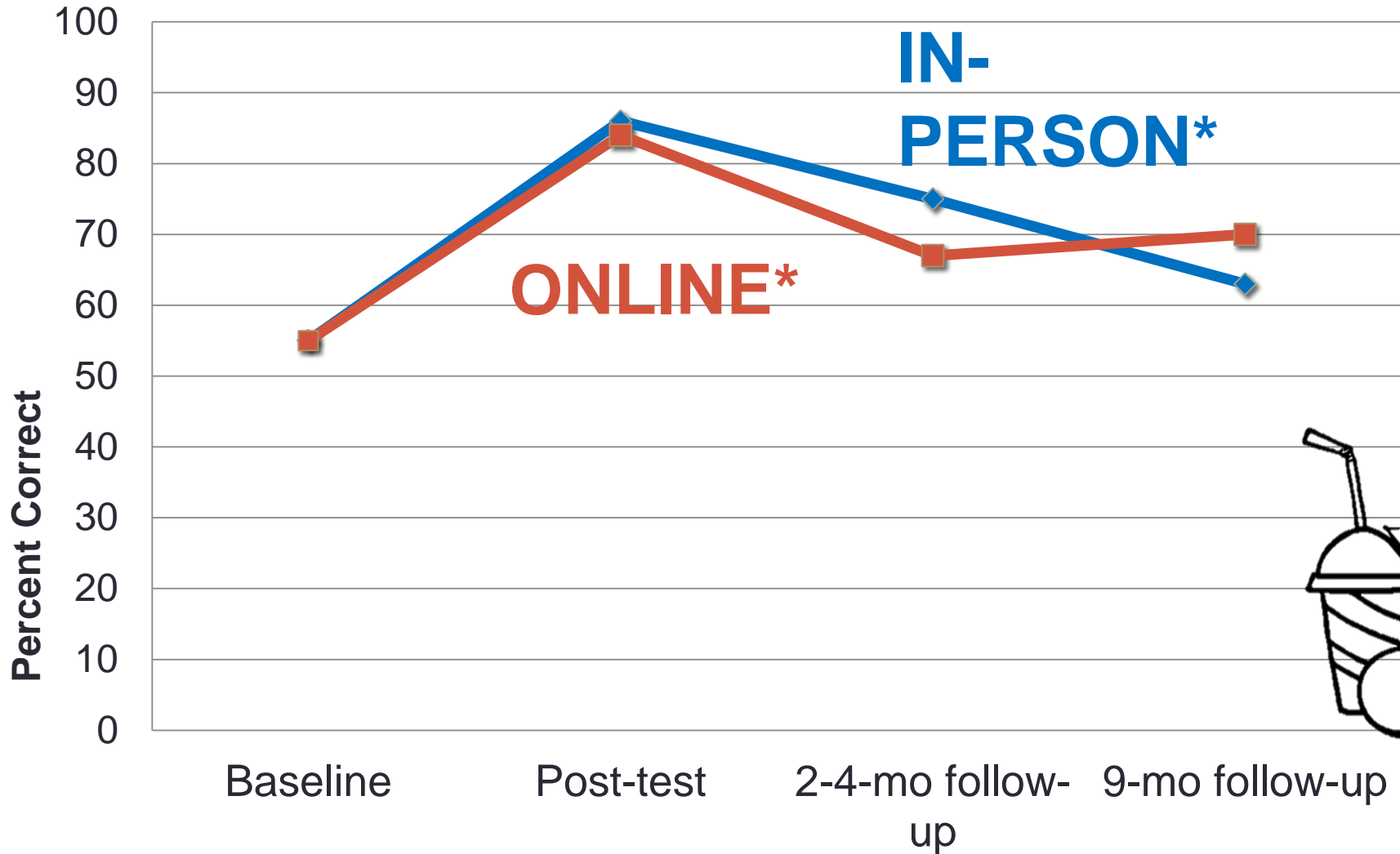
Knowledge Increases
Amount of sodium recommended

Chart plotting Percent Correct across Baseline, Post-test, 2-4-mo follow-up, and 9-mo follow-up for ONLINE and IN-PERSON groups.
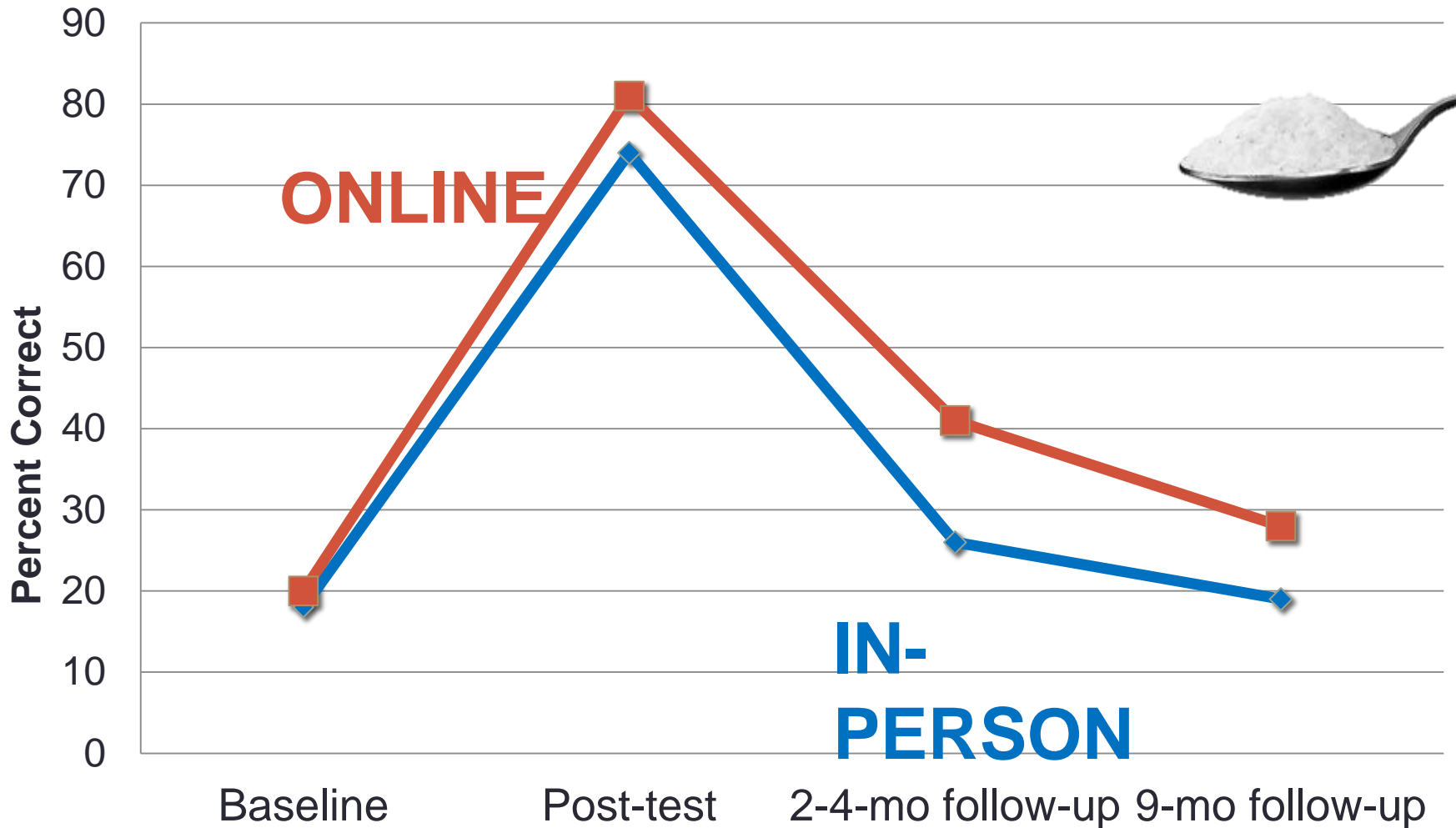
Behavior Changes
Read nutrition label
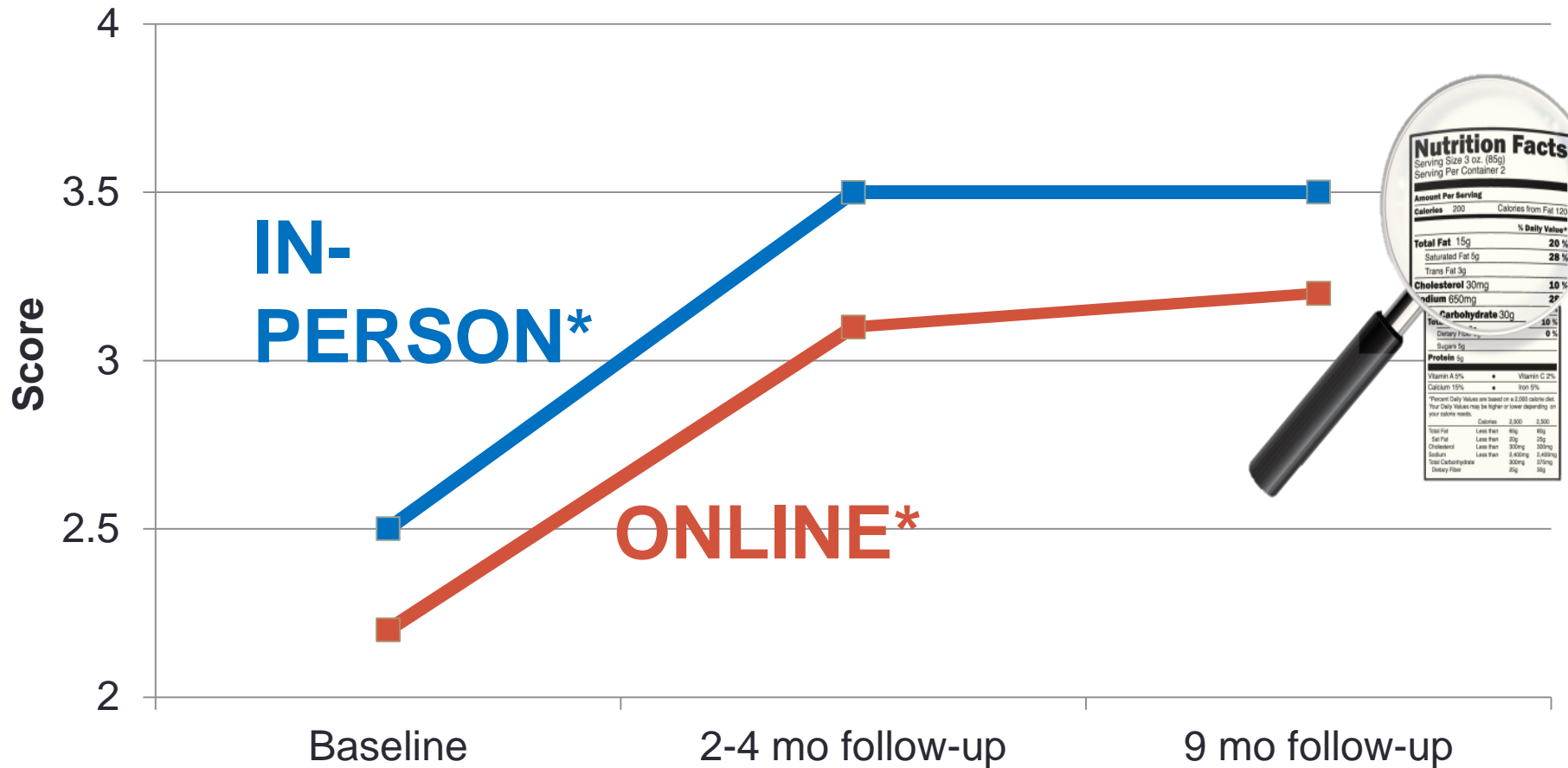
Score: 1 = never   2 = once in a while   3 = sometimes   4 = often   5 = always

Behavior Changes
Ate salty foods (from list of 11 foods)
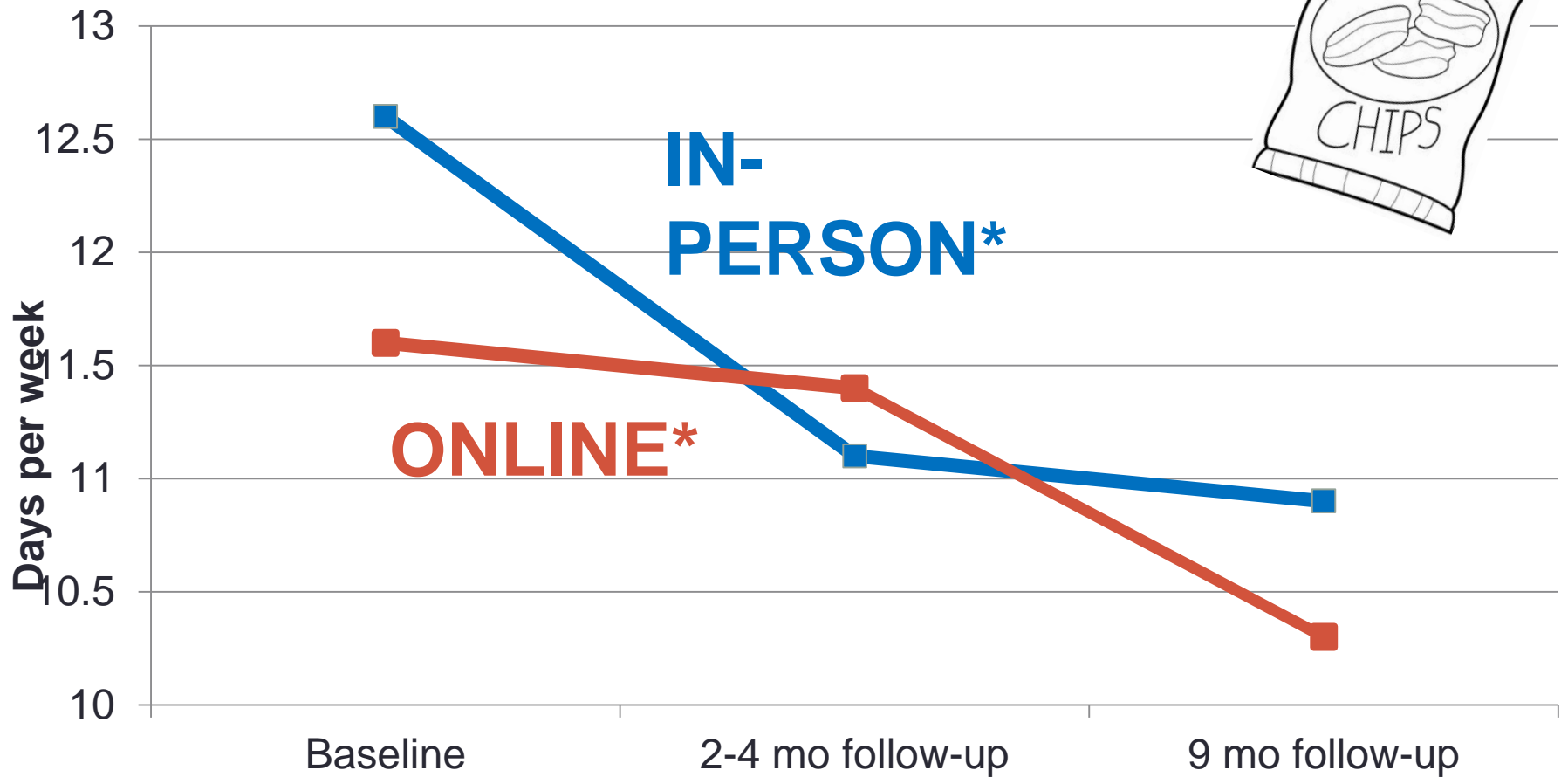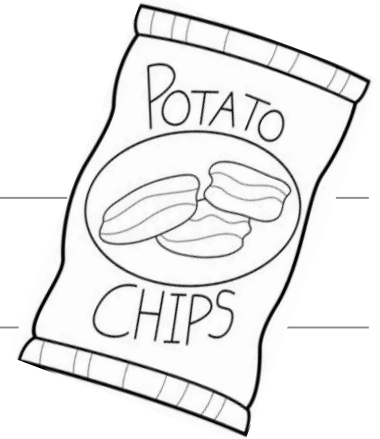
SATISFACTION

Satisfaction High with Both In-Person & Online Education
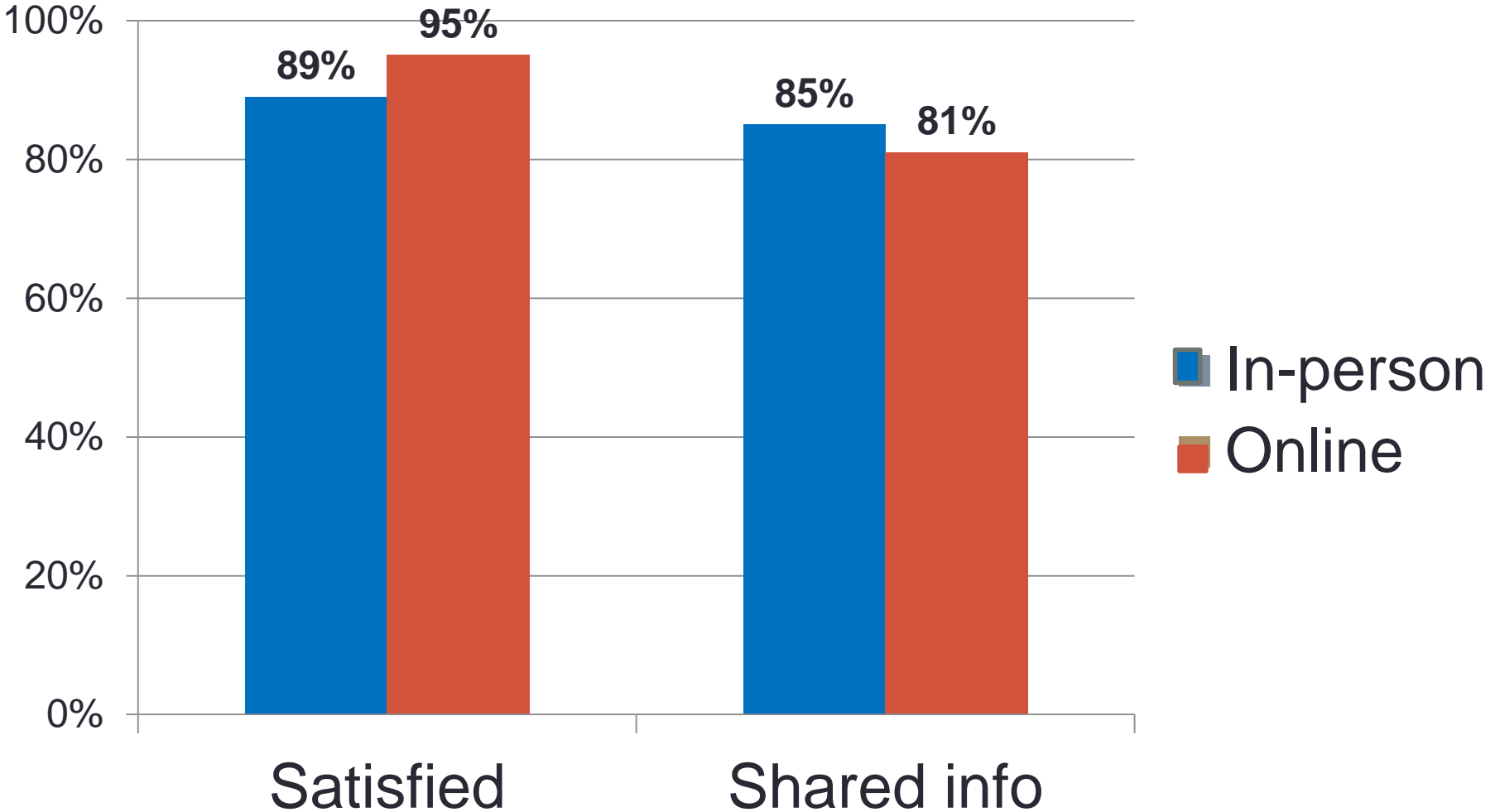
Preference for Online Increased with Exposure Especially For Spanish Speakers
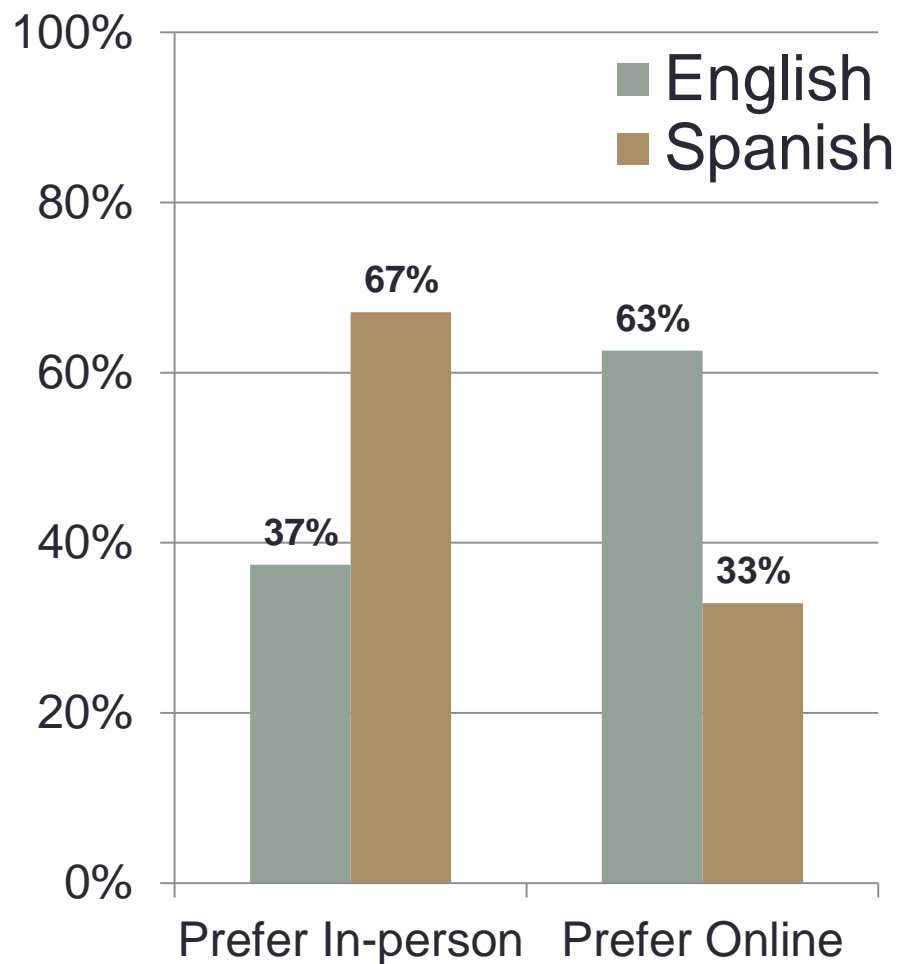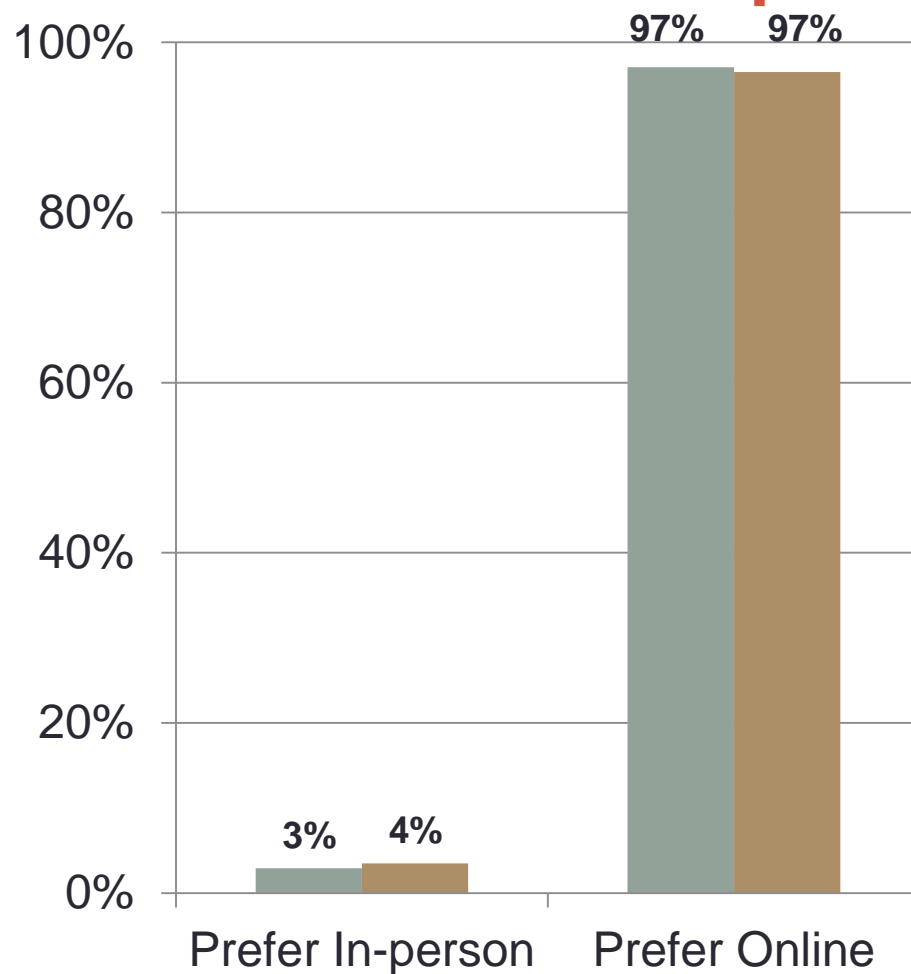
Online Training Video Helpful

- Reduced issues with logging in or finishing class (from 34% to 15%)
- Majority (88%) reported the video was very helpful
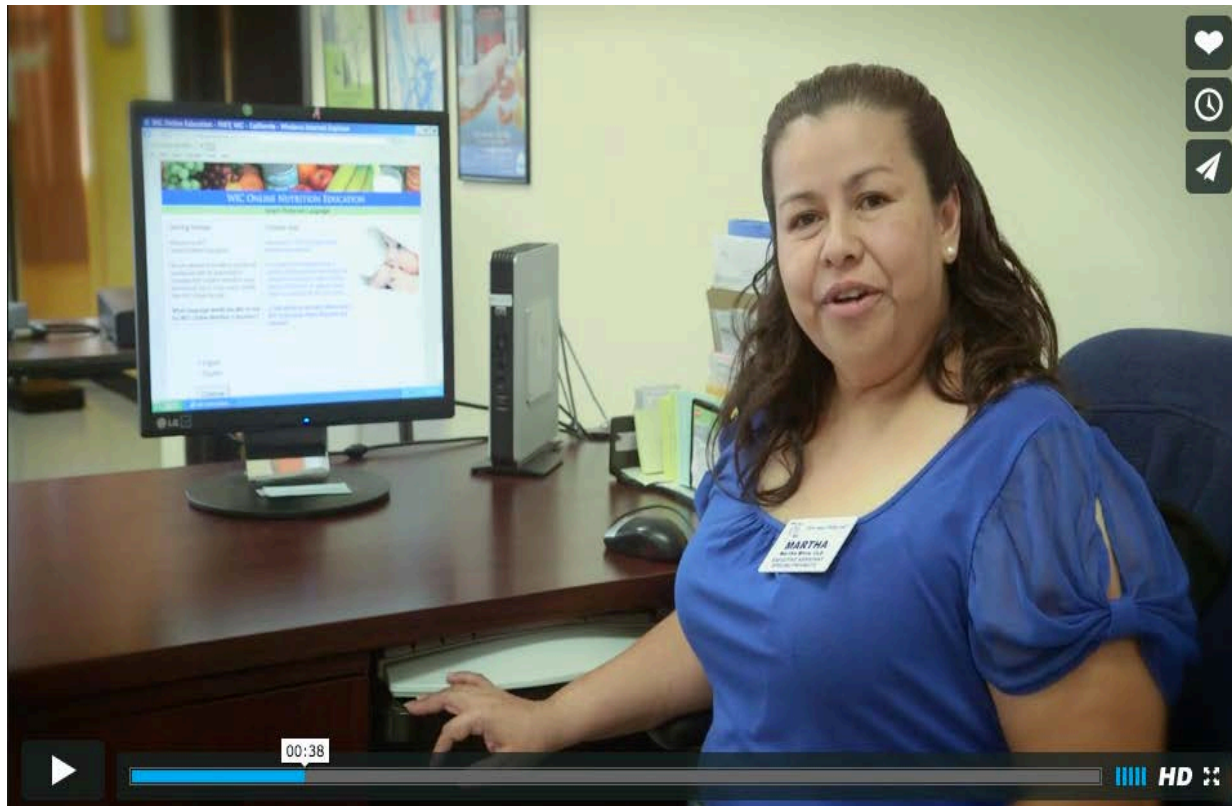
Take Home Message

- In-person and online nutrition education are effective:
    - Reducing sodium intake

- Multiple modalities of nutrition education useful in WIC
    - About half said would prefer combination of in-person and online

Acknowledgments

- Lorrene Ritchie, PhD, RD
- Shannon Whaley, PhD
- Martha Meza
- Klara Gurzo, MA

- Au LE, Whaley S, Gurzo K, Rosen NJ, Meza M, Ritchie LD. Evaluation of online and in-person nutrition education related to salt knowledge and behaviors among WIC participants. *Journal of the Academy of Nutrition and Dietetics.* DOI: 10.1016/j.jand.2016.12.013

- Au LE, Whaley S, Gurzo K, Meza M, Ritchie LD. If you build it they will come: Satisfaction of WIC participants with online and traditional in-person nutrition education, *Journal of Nutrition Education and Behavior*, 2016; 48:336-342.

- Au LE, Whaley S, Rosen NJ, Meza M, Ritchie LD. Online and in-person nutrition education improves breakfast knowledge, attitudes, and behaviors: a randomized trial of WIC participants. *Journal of the Academy of Nutrition and Dietetics*, 2016; 116(3):490-500.

Contact: **Lauren Au, PhD, RD (leau@ucanr.edu)**

Transitioning *About Eating,* An Effective Online Program, to a Worksite Wellness Option

Barbara Lohse, PhD, RD, CDN
balihst@rit.edu

WebHealth, 10 non-dieting lessons, developed for and tested with 1689 college students

Expert Review of WebHealth for evidence of eating competence construct

Cognitive interviews & face-to-face interviews with low-women about 4 WebHealth eating competence lessons

Preliminary online testing of 4 revised lessons with low-income women

Pilot study of the 4 online lessons with low-income women

About Eating randomized controlled study with low-income women

About My Size lesson developed and added to About Eating

About Being Active lesson developed and added to About Eating

Welcome to About Eating

Background

www.needscenter.org/resources1/about-eating

About Eating is unique

- The 6 modules can be completed in any order;

- Within each module, learners can make selections, then revise their decisions before the end of the module;

- Little pressure to engage in module components that don't interest learners;

- Learners can return to lessons as many times as they want.
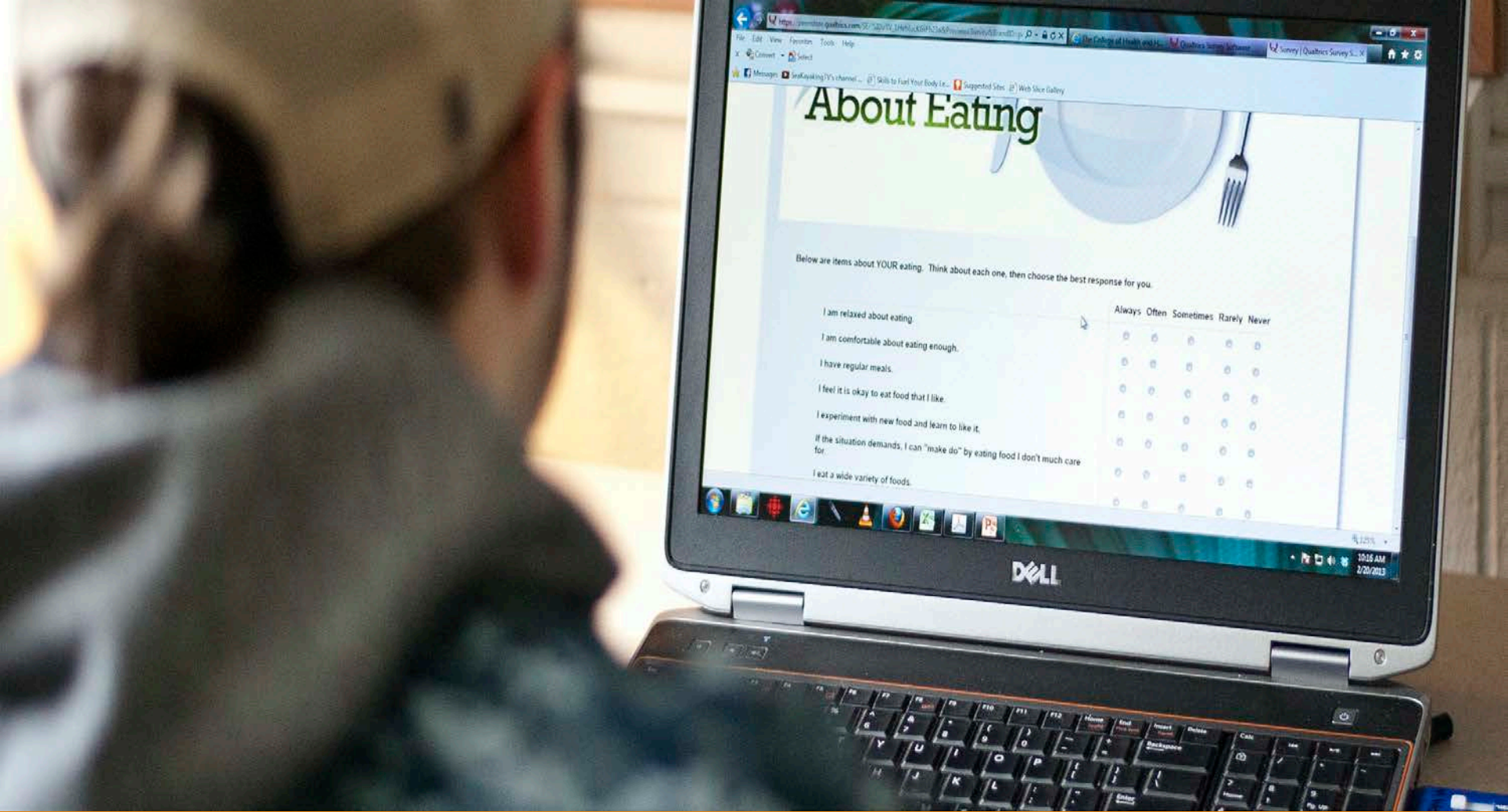
Evaluation

- Pre and post program
- Includes EARS items
- Post module evaluation
- Unique surveys available
- Tracking by email address [and unique site code]

R·I·T needs
NUTRITION EDUCATION ENGINEERING & DESIGNS

Welcome to **About Eating**

Congratulations on completing About My Size.

We are interested in what you liked, what you didn't like, your ideas for changes and any other comments. Your responses below will help us know your thoughts about the lesson. Please choose the best answer that reflects how you think or feel by clicking on the circle. When finished, you will be shown the *About Eating Program* start page. There you can choose another lesson or revisit a lesson you previously completed.

	Yes, definitely	Yes, sometimes	No, not very much	No, not at all
The lesson was difficult to read.	O	O	O	O
Getting around the website was difficult.	O	O	O	O
This lesson was interesting.	O	O	O	O
This lesson was useful for me.	O	O	O	O
I liked the pictures.	O	O	O	O
Overall, the length of the lesson was good.	O	O	O	O
I liked the overall design and/or color.	O	O	O	O

Compared Online to Online
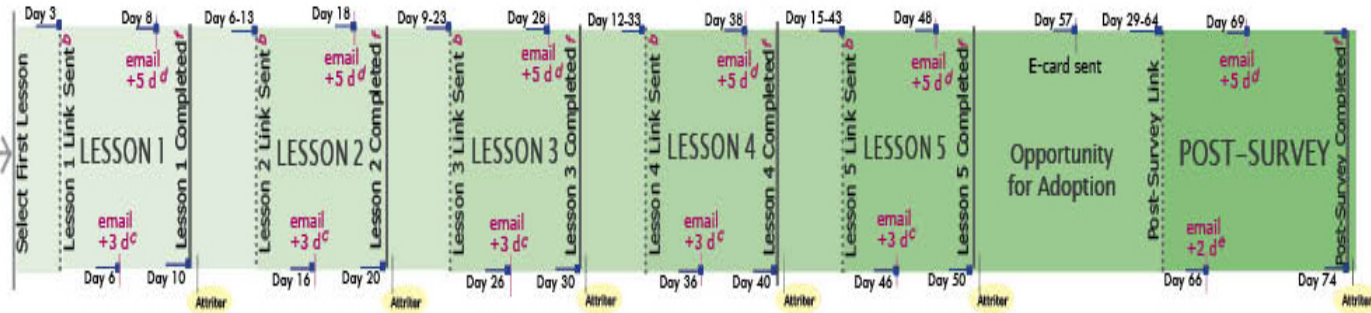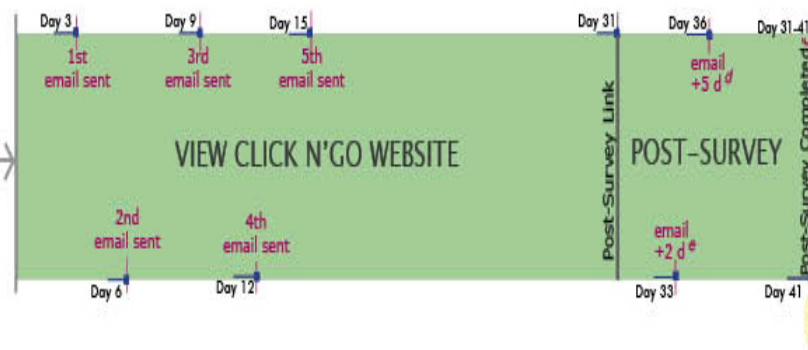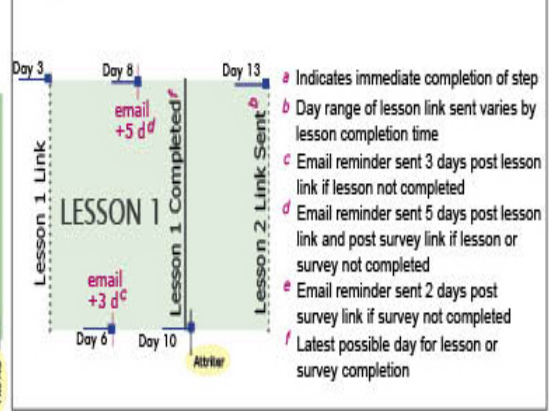
Tenets of the Satter Model of Eating Competence

". . .intra-individual approach to food selection and eating behaviors focused on enjoyment, attention to internal regulation of intake, food acceptance, and food resource management skills. . . "

✓ Build relationships-don't criticize; help learners have self-efficacy

✓ Dignify eating "bless eating"

✓ Emphasize providing, not depriving

✓ Trust people to learn and grow

✓ Identify and discard restrained eating

✓ Stress family meals

✓ Join learners where they are

✓ Teach meal planning

Best Practices for Nutrition Education of Low-income adults.

Program Design
- Content Areas
- Evidence Based
- Goal Setting
- Appropriate for Audience
- Literacy Considerations
- Theoretical Basis
- Goals and Objectives
- Social Ecological Model

Program Delivery
- Learning Styles
- Experiential Activities
- Contacts
- Fidelity
- Enhancement Items
- Collaboration

Educator Characteristics
- Relate to the Target Audience
- Expertise in Content
- Expertise in Teaching Methods
- Performance Expectations

Educator Training
- Initial Training
- Ongoing Training
- Observation of Educators

Evaluation
- Formative Evaluation
- Process Evaluation
- Outcome Evaluation
- Impact Assessment
- Sustained Behavior Change
- Goals and Objectives
- Social Ecological Model

https://snaped.fns.usda.gov/snap//CSUBestPractices.pdf

PRINCIPLES OF ADULT LEARNING

EDUCATORS HELP ADULTS LEARN BY

- Self-directed; self-learning
- Draws on accumulated life experiences when learning
- Learning readiness may be time or role change specific
- Intrinsically motivated
- Problem-centered; application immediately

Explaining reasons for what is being taught

Focus on tasks rather than content to memorize

Address real life problems

| Assessment Item	About Eating (n=155)			Comparison (n=148)		
How often do you. . .	Pre Mean (SD)	Post Mean (SD)	P	Pre Mean (SD)	Post Mean (SD)	P
Run out of food before the end of the month?	**2.7 (1.3)**	**2.4 (1.2)**	**< 0.001**	2.7 (1.3)	2.5 (1.3)	NS
Use nutrition facts on the food label to make food choices?	**3.1 (1.1)**	**3.3 (1.2)**	**0.01**	3.0 (1.1)	3.1 (1.1)	NS
Keep track of some or all of your food-related expenses?	**2.7 (1.4)**	**3.0 (1.3)**	**0.008**	2.8 (1.4)	3.0 (1.4)	NS
Use a written spending plan or budget for food?	2.8 (1.3)	2.9 (1.3)	NS	**2.9 (1.3)**	**3.1 (1.3)**	**0.03**
Feel confident about managing your money to make healthy food available to you?	**3.1 (1.1)**	**3.3 (1.1)**	**0.001**	3.1 (1.1)	3.2 (1.2)	NS
Plan meals to include all food groups?	**3.2 (1.0)**	**3.4 (1.0)**	**0.002**	**3.2 (0.95)**	**3.4 (0.9)**	**0.03**
Make a successful recipe from scratch?	3.7 (1.1)	3.9 (1.0)	NS	3.6 (1.1)	3.7 (1.1)	NS
Compare prices to save money?	4.1 (0.94)	4.1 (0.84)	NS	4.0 (0.87)	3.9 (1.1)	NS
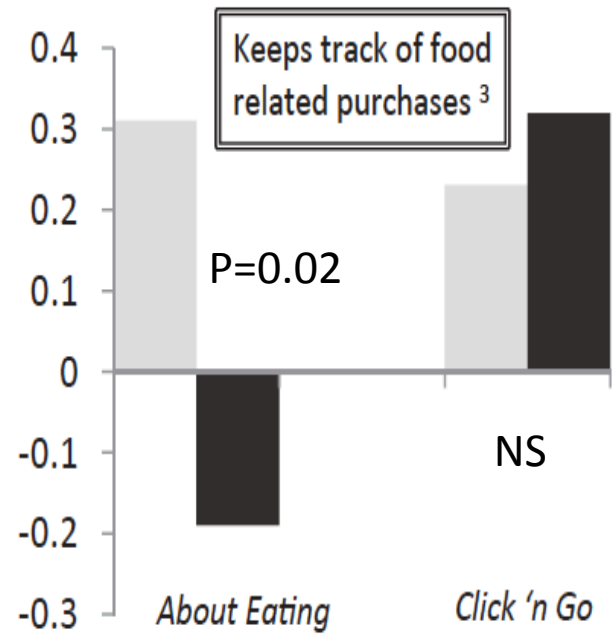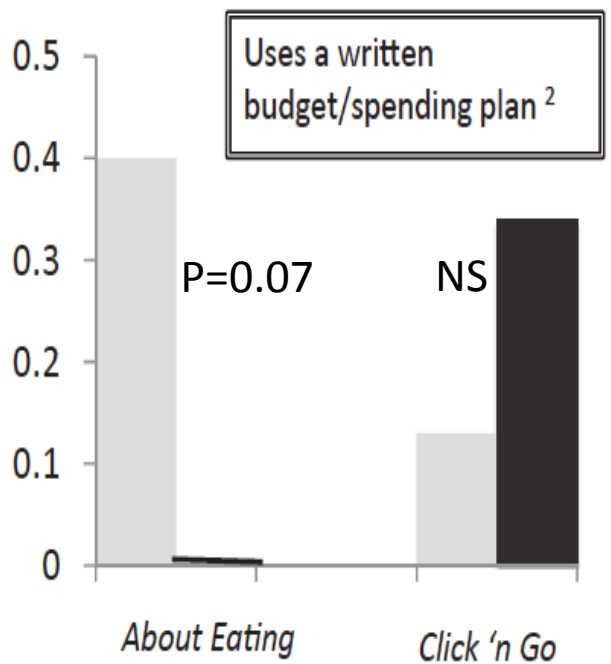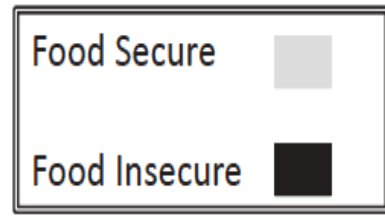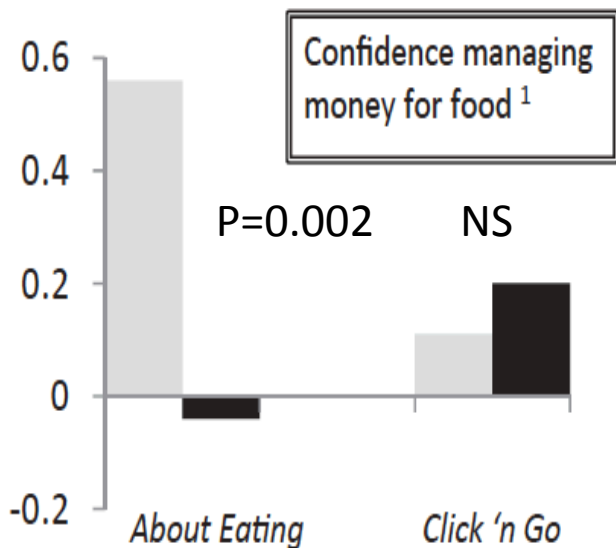
Unique to Worksite Well-being Education

- ✓ Demographic and psychographic heterogeneity

- ✓ Motivators differ from classroom or healthcare provider use

- ✓ Ongoing engagement

- ✓ Compatibility with corporate culture

Transform *About Eating* by… listening to worksite experts

✓Words, phrases matter: Remove the "Low-income" on home page; what is low dietary control? Internal regulation factors? Remove the phrase, "Don't go 5 hours w/o eating."

✓Clearly articulate why something in the program matters-don't assume that because it is there, learners will understand that it is important e.g., Why does pleasure matter? Why does the eating pattern of other countries matter?

✓Make sure progress bars make sense; scoring on surveys is understandable.

✓If possible, link with other company-sponsored or promoted materials, e.g., websites, apps, social media. Example, shopping list app. . .

✓Add a read aloud component

✓Interactivity

✓Viewers want more videos and animations

Welcome to About My Size!

SIZE ACCEPTANCE is . . .

- To accept the natural diversity in body shape and size.
- To affirm human beauty and worth regardless of weight, physical size, and shape.

Being size accepting can be challenging. Magazine racks spill out headlines to grab your attention.

- *"Toning your abs. "*
- *"Look slimmer and trimmer. "*
- *"Sculpt your body."*
- *"10 quick steps to looking better."*
- *"Perfect body in 10 days! "*

What is the perfect body? Are you more interested in a healthy body or one that looks a certain way? When you look in the mirror, do you like what you see? Or, do you wish you had just a little more muscle here or a little less fat there? Do you think there is an "ideal" body?

Newspaper banner Then, Headlines tell you how to get the perfect body.	News stand with **man holding** paper with headline How to have the perfect Body.
	What's important is how YOU see your body
	Younger thin man picks up paper, thin girl picks up paper, and short woman with larger ears and nose picks up paper
Planning to Change?	Younger Man standing in front of mirror Image in mirror is a muscled man, boy looks determined
Seeing something else?	Thin girl in front of mirror but image in mirror is of a larger, "fat" woman. Girl sighs, I am too heavy
Comfortable in your own skin?	Short, large eared, nosed woman stands in front of mirror ; image is tall woman , smaller nose, smaller ears. Woman smiling—show a thumbs up or heart.
Is there a perfect body?	**Show the 3 mirrored images**

Specific issues	Faster writing Results of writing should look like a cursive or printed sharpie, not typewritten text Rather than place the figures—draw them in with color coming in as they are drawed.
Newspaper banner	Needs to look more like a newspaper banner, it just looks like a report Change banner to: Your perfect body!
Open page of newspaper, show this heading in the top of a newspaper column	Continued from Page 1…. What's important is how YOU see your body
	Does what you see . . .
. . . differ from what others see?	Thin girl in front of mirror but image in mirror is of a larger, "fat" woman. Girl shoulders slump. I am too heavy.
. . . differ from what you want to see?	Younger Man standing in front of mirror Image in mirror is a muscled man, boy holds weights in his upstretched hands
. . .feel just right?	Short, large eared, nosed woman stands in front of mirror ; image is tall woman , smaller nose, smaller ears. Woman smiling—show a thumbs up or heart.
What is a perfect body?	Show the 3 people (not the mirrored images)

Welcome to About My Size!

SIZE ACCEPTANCE is . . .

- To accept the natural diversity in body shape and size.
- To affirm human beauty and worth regardless of weight, physical size, and shape.

Being size accepting can be challenging. Magazine racks spill out headlines to grab your attention.

- *"Tone your abs."*
- *"Look slimmer and trimmer."*
- *"Sculpt your body."*
- *"10 quick steps to looking better."*
- *"Perfect body in 10 days! "*

What is the perfect body? Are you more interested in a healthy body or one that looks a certain way? When you look in the mirror, do you like what you see? Or, do you wish you had just a little more muscle here or a little less fat there? Do you think there is an "ideal" body?

Thank you!

Questions??