

# Creating Training for Foodservice Employees: A Smart Phone Adaptable Website for the Millennial Workforce

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**Abstract:** This paper describes the need, context and problem behind the design and development of a responsive design website to train foodservice Millennial employees on safe food handling practices. Critical messages, learning goals and objectives, and website features are introduced. Lessons learned and best practices are shared as result of full development and beta testing.

## The Need

In 2010, the Center for Disease Control and Prevention released new estimates of foodborne illness outbreaks in the United States. Every year, an estimated 9.4 million illnesses, 55,961 hospitalizations and 1,351 deaths result from consumption of foods contaminated with *known* disease agents (Scallan et al., 2011b) with an additional 38.4 million illnesses, 71,878 hospitalizations and 1,686 deaths estimated from consumption of foods contaminated with unspecified agents (Scallan et al., 2011a). In England and Wales, the estimate is 21,138 hospitalizations per year (Adak, Long and O'Brien, 2002).

The U.S. Food and Drug Administration reported three major food safety contributors to foodborne illness outbreaks in retail foodservice operations: poor personal hygiene, time and temperature control, and contaminated equipment. Recognizing that all three contributors are controllable, researchers have focused their efforts on food safety knowledge, attitudes, training, and behaviors (Strohbehn, Sneed, Paez and Meyer, 2008).

## The Context

Iowa State University (ISU), a comprehensive land-grant university, has a tripartite mission of research, education, and extension or outreach. Programs at the University encompass all phases of food safety—from farm to fork. With support from U.S. Department of Agriculture Food Safety Consortium and

Cooperative Extension, the nationally known ISU Extension Food Safety website (<http://www.extension.iastate.edu/foodsafety/>) was created. The purpose of this website is to offer educational materials and tools to minimize the risk of foodborne illness and disseminate food safety information.

## The Problem

Results of recent studies, including those from ISU Food Safety research team (Arendt and Sneed, 2008; Strohbehn et al., 2008), strongly support the conclusion that training in food safety and subsequent acquisition of knowledge regarding safe food handling practices does not necessarily translate into practice of handling food safely, although the underlying reasons for this are currently not well understood.

There is a clear gap between *knowing* about food safety and *practicing* safe food handling in retail foodservice operations due to multiple barriers and motivators affecting food handler practices. We know that food safety training translates to acquired food safety knowledge; however, we do not know the affect incorporating age-specific safe food handling communication strategies and mode of delivery will have on behavior change, in particular the Millennial workforce.

The Millennial generation was born between the late 70s and the early 80s. The uniqueness of Millennial results largely from technological advances that have affected this generation without parallel. “The unique Millennial competency is the ability to effectively utilize broadly networked digital communication technologies to quickly and seamlessly accomplish a wide variety of tasks. This competency has resulted from rich experience with Internet communications.” (Gorman, Nelson and Glassman, 2004, p.257)

Literature on instruction highlights the need to shift from standardization to customization, as learners reveal different learning preferences and needs (Reigeluth, 1999). Trainees are usually expected to sit down, be quiet, and do what they are told to do. The trainer or instructor directs their learning. Conversely, corporate restructuring emphasizes attracting employees who can take initiative, think critically, and solve problems, which fits into the information-age paradigm. Organizations face the challenge of providing more flexible working conditions, meeting cultural requirements of ethnically diverse employees, encouraging cooperative work and networking, and supporting career advancing in order to recruit and maintain a skillful workforce. A strategic approach to training and development of human resources is one way to face these challenges (Beaver and Hutchings, 2005). Foodservice operations will not only win a competitive advantage, but also will be well positioned to adjust to the unstable economy. Emerging technologies have a role in making customization easier and affordable by allowing the creation of more flexible, authentic and resourceful learning environments designed for specific audiences.

At the same time, the foodservice industry is observing a steady increase of Spanish-speaking employees. The National Restaurant Association’s Trends & Forecasts (2012) reports that 40 percent of quick service restaurant employed more foreign-born workers in 2008 than they did in previous years. Additionally, the number of Hispanic-owned restaurant businesses increased 80 percent between 1997 and 2007, while the number of Asian-owned restaurant businesses grew 60 percent. (Restaurant Industry Fact Sheet, 2012)

## The Solution

By coupling age-specific training addressing motivations for handling food safely along with “customized” delivery methods it was expected that the knowledge-behavior gap would be filled. While food safety knowledge is important, the overall goal is to have knowledge translate into action whereby employees behave in a manner to prevent foodborne illnesses. As a result, a responsive design website – *Do Your PART: Plan, Act, Routine and Think* - was designed, developed and tested. The training materials included in this website also work on a smart phone and are the focus of this paper. *Do Your PART* can be accessed on a smart phone at [www.extension.iastate.edu/foodsafety/doyourPART/](http://www.extension.iastate.edu/foodsafety/doyourPART/). The target audience for this application is foodservice employees identified as Millennial generation, also known as Generation Y (ages 26 to 34 years old) and aims at English and Spanish-speaking groups.

According to Nicholas (2008), learning methods have to continually adapt to engage and educate this generation. In her study on Millennial preferred learning methods, she found a strong interest for multimedia,

problem solving and case analysis. *Do Your PART* uses multimedia (videos, animations, and presentations) as well as problem solving practice activities.

The purpose of *Do Your PART* is to promote change in food handling safety behaviors among employees in the food industry by providing tools and critical messages in a media format compatible to the Millennial generation in both languages, English and Spanish.

## Content Development

The critical messages to deliver were organized around the theme: *Do Your PART*, a different way of thinking about food safety.

- The *P* in *Do Your PART* stands for PLAN. Plan to be more efficient and effective. It is suggested to the foodservice employee to: “Make a plan each day to organize your work. For example, before starting a task, think about how you might group similar activities. Do Your PART to minimize your inputs and maximize your safe food handling behaviors.”
- The *A* in *Do Your PART* stands for ACT. Act on your plan. The following is suggested to the foodservice employee: “A wise cook once said, ‘If you don't use your head, you have to use your feet.’ In other words, not thinking before acting will cause wear and tear on your body. This can be painfully true. It can lead to wasted time and poor food safety. Have a plan and put it into action so you can work smarter not harder.”
- The *R* in *Do Your PART* stands for ROUTINE. Routine the plan - make it a habit. “When foodservice employees were asked why they didn't always handle food safely, they often said they lacked good food safety habits in their routines. It is important to make food safety part of your routine so that it becomes a habit, something you no longer need to think about because you have done it so many times” becomes the main message.
- The *T* in *Do Your PART* stands for THINK. Think about it – keep focused. The advice here is to: “Continue to THINK about how you can improve your safe food handling. Just because ‘it has always been done this way’ doesn't mean that it couldn't be done a better and safer way. Do Your PART to think of ways to maximize your safe food handling behaviors.”

## Learning Goal and Objectives

Learning Goal:

Learners will demonstrate safe food handling practices.

Learning Objectives:

Learners will use *Plan* to be more efficient in the kitchen, which will translate into:

- Less hand washing needed
- Fewer gloves used
- Less physical effort

Learners will be able to *Act* on that plan by:

- Organizing work area
- Setting up station with all needed supplies

Learners will be able to make that plan a *Routine* by:

- Developing their own system
- Increasing repetition and practice
- Reinforcing routines

Learners will be able to *Think* about their actions by:

- Rethinking the good food safety habits established
- Continuously challenging yourself

## Features of the Smart Phone Adaptable Website

These are some of the features included in this bilingual (English/Spanish) website (Fig. 1):

- Play motivational video (entry screen, corresponds to START)
- Explore each component of PART (Plan, Act, Routine and Think)
- Play video demos with narration (WATCH)
- Practice skills demonstrated on the videos (PRACTICE)
- Perform self-assessment activities (CHECK)
- Access to online resources (e.g., Food Code 2009, Iowa Food Safety Project, Integrated Food Safety Information Delivery System and Training Resources)



**Figure 1:** Screenshot of the website on a smart phone for the foodservice Millennial employees.

This application aims at increasing foodservice employees' knowledge and skills so they can do their PART in handling food in a safe manner. Each of the four sections (Start, Plan, Act, Routine and Think) of this application offers three important instructional components:

- WATCH an instructional video (displays best practices over narration)
- PRACTICE what is learned (simulation offers opportunities to practice what is demonstrated in the video)
- CHECK what is learned (a short self-assessment exercise allows for checking understanding on the concepts introduced in the video)

## Lessons Learned and Best Practices

This smart phone adaptable website is now fully functional and foodservice employees have used it across Iowa. The implementation plan aims at disseminating this training resource nationwide through ISU Extension.

Below are some of the lessons learned throughout the design and development:

- Carefully plan the instructional videos in terms of content and overall look and feel. For example, the first video tries to establish an emotional connection with the audience linking the role of food service employees with the well-being of the community as a whole.

- Design with your audience in mind. Foodservice employees need on the job help, easy to access and follow, and direct to the point. The team's extensive expertise not only on the subject matter, but also on the target audience was critical for the development.
- Use native Spanish speakers for the Spanish component of the website that are also experts on food safety.
- Plan enough time for development. Design and redesign cycles can be time consuming and require constant communication with the developers. Always keep an eye on the development progress and address any issues immediately.

As far as best practices, this smart phone adaptable website design and development was based on a rigorous and thorough research that aimed at identifying employees' motivators and barriers to follow safe food handling practices. A paper, pencil bilingual questionnaire was used with a sample of 1,103 hourly foodservice employees in the U.S. retail foodservice operations. Results of this research drove the design of the website content, learning goals, and objectives.

## References

- Adak, G., Long, S. and O'Brien, S. (2002). Trends in indigenous foodborne disease and deaths, England and Wales: 1992 to 2000. *GUT International Journal of Gastroenterology and Hepatology*, 51(6), 832-841.
- Arendt, S. W., & Sneed, P. J. (2008). Employee motivators for following food safety practices: Pivotal role of supervision. *Journal of Food Protection*, 28, 704-711.
- Beaver, G. & Hutchings, K. (2005). Training and developing an age diverse workforce in SMEs: The need for a strategic approach. *Education & Training*, 47(8/9), pp. 592-604.
- Gorman, P., Nelson, T. and Glassman, A. (2004). The Millennial Generation: A Strategic Opportunity. *Organizational Analysis*, 12 (3), 255-270.
- National Restaurant Association (2012). Trends & Forecasts. Retrieved from <http://restaurant.org/research/forecast/>
- National Restaurant Association (2012). Restaurant Industry Fact Sheet. Retrieved from [http://www.restaurant.org/pdfs/research/PocketFactbook\\_2012.pdf](http://www.restaurant.org/pdfs/research/PocketFactbook_2012.pdf)
- Nicholas, A. (2008). Preferred Learning Methods of the Millennial Generation. *The International Journal of Learning*, 15(6), 27-34.
- Reigeluth, C. M. (1999). *Instructional-Design Theories and Models: A New Paradigm of Instructional Theory, Vol.II*. Mahwah, N.J.: Lawrence Erlbaum Associates.
- Scallan, E., Griffin, P. M., Angulo, F. J., Tauxe, R. V., and Hoekstra, R. M. (2011a). Foodborne illness acquired in the United States – Unspecified agents. *Emerging Infection Disease*, 17(1), 16-22.
- Scallan, E., Hoekstra, R.M., Angulo, F.J., Tauxe, R.V., Widdowson, M. A., Roy, S. L., Jones, J. L. and Griffin, P.M. (2011b). Foodborne illness acquired in the United States – Major pathogens. *Emerging Infection Disease*, 17(1), 7-15.
- Strohbehn, C., Sneed, J., Paez, P. and Meyer, J. (2008). Hand Washing Frequencies and Procedures Used in Retail Food Services. *Journal of Food Protection*, 71(8), 1641-1650.

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