# A Teaching Innovation on Retail Environmental Design for Consumers with Disabilities

**Meng-Hsien (Jenny) Lin, William J. Jones, and Akshaya Vijayalakshmi**

**Purpose of Study**: A teaching innovation that bridges the gap identified in current retailing textbooks, which pay minimal attention to serving consumers with disabilities in the marketplace, is proposed and assessed. This retail class project considers not only the legal and profit benefits for the firm, but also the inclusion and sense of normalcy for a consumer from a societal marketing perspective.

**Method/Design and Sample**: Forty-one students working on the retail project were invited to participate in a pre- and post- test survey that investigates 1) their knowledge of disability regulations and accommodations required of retail outlets and 2) the usefulness of the project in advancing their careers and academic learning. In addition to the use of a "cognitive walkthrough" method of data collection for the class project, students were introduced to the concepts and model of servicescape and consumer normalcy in preparation for the project.

**Results**: Results indicated that learning objectives were met and student expectations were achieved through the implementation of the retail project.

**Value to Marketing Educators**: The implications of considering consumers with disabilities in retail environmental design includes: the physical needs of adapting to consumers with disabilities and the psychological need of consumers wanting to be included and perceived as "normal." The innovation extends students' learning about consumers with disabilities while reinforcing traditional retail concepts, such as store layout, visual merchandising, consumer behavior, and the notion of a servicescape. The project is adaptable to various marketing courses.

*Keywords*: Consumer disability; Consumer normalcy; Retailing; Servicescape

**Meng-Hsien (Jenny) Lin**, Assistant Professor of Marketing, College of Business, California State University Monterey Bay, 100 Campus Center, Seaside, CA 93955. Tel: 831-582-5237, Email: jelin@csumb.edu. **William J. Jones**, Assistant Professor of Marketing, Beacom School of Business, University of South Dakota, 414 E. Clark St., Vermillion, SD 57069. Tel: 605-677-5544, Email: William.Jones@usd.edu. **Akshaya Vijayalakshmi**, Assistant Professor of Marketing, Indian Institute of Management Ahmedabad, Vastrapur, Gujarat 380015. Tel: 91-79-6632 4925, Email: akshayav@alumni.iastate.edu.

Note: All three authors contributed equally.

## PROBLEM IDENTIFICATION AND PROPOSED INNOVATION

Major retailing textbooks pay relatively little attention to consumers with disabilities (Berman & Evans, 2013; Levy, Weitz, & Watson, 2014), which is alarming for three reasons. First, section 12101(b)(1) of the Americans with Disabilities Act (ADA) of 1990 mandates "the elimination of discrimination against individuals with disabilities", which offers unique challenges for retailers (Kaufman-Scarborough, 2000). Second, the 54 million American consumers with disabilities makes them the third largest market segment and the fastest growing globally (Macsata, 2015), and therefore retailers would be disadvantaged in not serving consumers with disabilities. A third reason is consumers' perceived "sense of normalcy" through accessibility. While normalcy has been addressed by retailing scholars (Baker, 2006), it is largely overlooked by retailing textbooks. Inhibiting a consumer's marketplace accessibility, Baker (p. 47) importantly argues, represses and devalues persons with disabilities while also segregating them from the rest of society.

Paradoxically, major retailing textbooks themselves make the case for greater consideration of consumers with disabilities. As Levy, Weitz, and Watson (2014) argue, "Businesses that are accessible attract more customers and improve services for everyone [emphasis added]" (p. 155). With respect to store layout, Berman and Evans (2013) emphasize legal aspects of ADA (e.g., the complex judicial framework and associated responsibilities) and noncompliance penalties. What seems to be lacking is discussion from the consumers' perspective of "fair treatment" in the marketplace. We bridge this gap by introducing a retail class project that considers firm compliance with regulations through retail design and services while also considering sense of normalcy for a consumer from a societal marketing perspective.

The development of the innovation described herein extends students' learning about consumers with disabilities while reinforcing more traditional retail concepts, such as store layout, visual merchandising, and retail consumer behavior, and the notion of a

servicescape (Bitner, 1992). Consideration of consumers with disabilities includes external adaptations of the marketplace and consumers' desires to control their consumer behavior (Baker, 2006).

## LINKING RETAIL PROJECT AND COURSE OBJECTIVES

A class project is proposed to infuse retail management curricula with industry and academic concepts related to consumers with disabilities. Learning objectives are intended to (a) develop a comprehensive understanding of the retail atmosphere, (b) design effective retail spaces for consumers with disabilities, (c) increase public policy knowledge of ADA Title III, which calls for public accommodations for persons with disabilities, and (d) enhance understanding of consumer behavior. Knowledge-based objectives (a) through (d) are meant to further achieve objective (e), which is to advance student skills for business career development. The project realizes the learning objectives via classroom engagement, on-site evaluation of retail stores and finally a written document report that addresses improvements and recommendations based on on-site evaluation of the retail stores.

## INNOVATION OUTLINE

### *Required Background Knowledge*

Students will ideally begin the project with an understanding of how the needs and wants of consumers with disabilities may be similar or dissimilar to consumers without disabilities. Additionally, students should have a basic understanding of retail concepts such as store layout, signage, and visual merchandising (cf. Levy, Weitz, & Watson, 2014). Knowledge about retailer social responsibility and ethics (cf. Chapter 2 in Berman & Evans, 2013) in addition to a basic grasp of ADA Title III regulations would further aid in executing the project. See Table 1 for instructor resources and notes. Furthermore, students initiate background research on a particular disability issue, but this can be instructor-led as well. In phase one of her ethnographic study, Kaufman-Scarborough (2001) used a mobility-disability simulation in her retailing class project. Kaufman-Scarborough's simulation is similar to the one we undertake, but decidedly more ethnographically-based as are the remaining phases of her study. In our project, we instruct on and employ "cognitive walkthroughs," which are assessments of whether users can set and achieve goals through intended actions within particular environments (Rieman, Franzke, & Redmiles, 1995). By conducting cognitive walkthroughs with an empathetic mindset, students simulate shopping experiences from the view of consumers with disabilities, but also conduct a critical review of retail practices as related to ADA Title III. Moreover, walkthroughs reveal specific instances necessitating managerial action (e.g., inaccessible spaces), and so their data are immediately relatable to students in a managerial sense.

**Table 1**

***Resources for Implementing the Innovation with Instructor Notes***

| Topic | Readings | Notes |
|---|---|---|
| Cognitive walkthrough | Polson, P. G., Lewis, C., Rieman, J., & Wharton, C. (1992).<br><br>Rieman, J., Franzke, M., & Redmiles, D. (1995).<br><br>Wharton, C., Rieman, J., Lewis, C., & Polson, P. (1994). | The original source for the cognitive walkthrough method.<br><br>A shorter conference abstract that might be more suitable reading for students after the instructor has explained the cognitive walkthrough method.<br>A book chapter that takes into consideration refinements of the authors' method. |
| Managerial report and significance | Dr. Derriere knows a thing or two about Ford seat engineering. https://social.ford.com/content/fordsocial/en/articles/escape/dr/20519-dr-derriere-knows-a-thing-or-two-about-ford-seat-engineering.html<br>Ford carmakers wear 'age suits' to design for older drivers (Sep 11, 2014). http://www.cbc.ca/news/canada/windsor/ford-car-makers-wear-age-suits-to-design-for-older-drivers-1.2762417;<br><br>Kolich, M., (2002). | Kolich is a leading engineer for Ford Motor Company jokingly referred to as "Dr. Derriere" for his work in car seat cushions. The report on innovation has its roots in usability evaluation from an empathy perspective. Because Kolich is the author of the article from which the managerial report style is derived, we find it useful to spend class time connecting Kolich's work with Ford to the class project. The CBC News article also features a video that students find informative. |

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|---|---|---|
| Information on retail design | Baker, S., Holland, J., & Kaufman-Scarborough, C. (2007).<br><br>Berman, B. R., & Evans, J. R. (2013).<br><br>Bitner, M. J. (1992).<br><br>Levy, M., Weitz, B., & Watson, D. (2014). | Chapter 6 of Levy et al. (2014) provides background coverage for "store design, layout, and visual merchandising". Levy et al. (2014) implicitly make a connection between servicescape and disability via Baker et al. (2007). Chapter 2 of Berman & Evans (2013) discusses ADA Title III and related disabilities considerations in retailing design under the topic of social responsibility and ethics. Bitner (1992) offers students some key issues to focus on when evaluating their retail spaces (e.g., ambient conditions). |
| Useful websites | http://www.ada.gov/;<br>returnondisability.com/;<br>http://www.viscardicenter.org/ | These websites contain a diverse array of background for ADA laws and design as well as how to profitably serve consumers with disabilities. |

***Learning Outcomes***

Upon completing the retailing project, students should be better equipped to evaluate a physical and atmospheric retail environment through the cognitive walkthrough method while considering the needs and wants of consumers with disabilities. A survey assesses whether specific outcomes are achieved for project objectives (a) through (e) listed above and reported in this paper. Students learn to input data derived from the cognitive walkthrough and to provide feedback via an industry-developed managerial report. Thus, the managerial write-up provides a reflection upon retail practices from the critical lens of consumer, consultant and researcher.

***Process to Deliver the Innovation***

The process begins with a class session (or two) during which the instructor provides the students with background understanding of how and why consumers with disabilities should be considered when designing retail environments. In-class discussions should cover: 1) recent regulation requirements of business such as ADA Title III 2) how consumers with disabilities (compared to consumers without disabilities) will have similar or different consumer purchase and/or decision making processes, and 3) what it means to be considered "normal" as a consumer in the marketplace by introducing the concept of "consumer normalcy." For deliverables 1 and 2, ADA.gov provides an outstanding resource for issues related to the design of public accommodations. For deliverable 3, instructors can cover how consumers with disabilities wish or expect to be treated in the marketplace (Baker, 2006).

Relevant readings are assigned prior to a first class session to fuel discussion on the needs and wants of consumers, including consumers with disabilities (e.g., Baker, 2006) like a typical consumer behavior class topic (cf. Chapter 3 of Levy, Weitz, & Watson, 2014). The development of ADA Title III should be discussed or could be facilitated by pre-assigned online readings. If a retailing textbook is used, ADA Title III is often mentioned during the topic of social responsibility and ethics (cf. Chapter 2 of Berman & Evans, 2013). Instructors can refer to Kaufman-Scarborough and Baker's (2005) study on consumers' perceptions of ADA regulations and whether they meet the needs of consumers with disabilities to introduce a point of observation in the cognitive walkthrough project. In the second class session, the instructor focuses on introducing the theory and logistics of a cognitive walkthrough. In our approach (derived from Rieman, Franzke, and Redmiles, (1995)), we assign students, in groups of three, to either 1) interact and navigate a retail space as a participant while "thinking aloud" their action, 2) to take notes on the walkthrough, or 3) to organize and facilitate the walkthrough through ascribed roles (see Table 2).

**Table 2**

***A Summary of Project Components and Cognitive Walkthrough Procedures***

| | |
|---|---|
| In-class discussion and intro to related topics | • Assign readings and conduct discussions on topics of retail design, ADA title III, consumer disability and normalcy |
| Tasks prior to cognitive walkthrough | • Identification of the users: decide form (physical or mental) and type of ***disability***<br>• Sample tasks for evaluation: ***pre-plan*** of your visit and ***the goal*** of your visit<br>• Action sequences (scenarios) for completing the tasks: identify ***at least 2 specific tasks*** such as parking, ordering, browsing for product, asking for assistance, bathroom trip, etc. |
| Role description and convene cognitive | • The ***facilitator*** maintains the pace of the discussion<br>• A ***scribe*** keeps two lists: 1) problems (and suggested solutions); 2) |

| | |
|---|---|
| walkthrough | assumptions about tasks and users' experience; can use audio recordings to facilitate<br>• The ***participant*** walks through (discuss) the tasks with respect to the environment (mockups) and action sequences (scenarios); they try to tell a credible story |
| Managerial report of findings and recommendations | • Provide feedback and recommendations in a managerial report to the retail store manager<br>• Suggest revisions to the environment to fix the problems |

After learning the method and discussing the three deliverables, students are given 4-6 weeks to complete the cognitive walkthrough by visiting a store through the lens of the form of disability they have chosen. Each team is expected to write a managerial report of their findings and recommendations. The report outlines the findings from the cognitive walkthrough along with recommendations for improvement. The format is derived from a highly structured approach offered in the trade literature whose stated goal is to "reduce the results of ergonomics research into a form that upper management can understand and therefore value" (Kolich, 2002, p. 17). Special emphasis is placed on taking into consideration the needs of consumers with disabilities, in addition to complying with ADA Title III regulations.

### *Materials Provided to Students*

Materials include readings to help students prepare for discussions in class on topics related to ADA regulations for businesses, the model of servicescape and its consideration in retail design (Bitner, 1992), and the concept of "consumer normalcy", which helps students understand the cognitive and emotional needs of consumers with disabilities (Baker, 2006; Baker & Kaufman‐Scarborough, 2007). Additional materials (see Tables 1 and 2) include the procedures and methods for designing and implementing the cognitive walkthrough.

## METHODS FOR ASSESSMENT OF INNOVATION

Forty-one students working on the retail class project were invited to participate in a pre- and post- test survey hosted online on Qualtrics. Pre-test survey items were administered prior to the introduction of the project to test students' existing knowledge of the topic. Post-test survey items were administered after the submission of the project report to measure the effectiveness of the innovation. Thirty-six students ranging in age from 18-25 years completed the pre-test survey and 30 students completed the post-test survey for extra credit. Students were assigned a unique key after the pre-test survey to input when accessing the post-test survey. This allows us to match the two sets of results for pairwise analysis. We had six fewer respondents in the post-test survey since it was conducted before finals week (and was not a requirement) when students are likely to have been otherwise occupied with various deadlines. In the survey, students were instructed to respond to questions on 1) their knowledge of disability regulations and accommodations required of retail outlets and 2) the usefulness of the project in advancing their careers and academic learning. The questions in both the pre- and post- test survey were kept the same thus helping us measure the incremental learning from the class project.

The first set of questions on the survey tested students' understanding of ADA in a retail context and consumer normalcy. These questions measured learning objectives (a), (b) (c) and (d), and included two open ended questions: "Have you heard or read about ADA?" and "In your own words, describe what is consumer normalcy?" The questions were designed by the authors. Other questions measuring learning objective (e) used the following scales: perceived confidence of designing retail spaces (one-item); knowledge of designing retail spaces (7-items; pre-test $\alpha$ = .82; post-test $\alpha$ = .71), traditional education goals (7-items; pre-test $\alpha$ = .75; post-test $\alpha$ = .70), involvement in the project (one-item) and job search preparation (4-items; pre-test $\alpha$ = .75; post-test $\alpha$ = .77) (scales from Jones, Vijayalakshmi & Lin, 2016). Thus, the results include measures that tracked incremental learning from the innovation.

## RESULTS OF ASSESSMENT

### *Knowledge Application*

A sample of students' responses to their understanding of ADA regulations and consumer normalcy pre- and post-tests are coded and presented in the Table 3. While approximately 58% of students mentioned expressed familiarity with ADA and what it is, students nevertheless reported learning more about ADA during the course of the project. Other students mentioned how ADA functioned as a "guideline" for store managers. Open-ended responses to normalcy before and after the innovation reveal a shift from a generic notion that everyone should be treated similarly to a task-specific understanding of how disability status impacts consumers situationally. Post project completion, students recognize cognitive and emotional consequences when normalcy is not achieved – e.g., feeling "like drawbacks or flaws." The responses suggest that the project helped achieve objectives (b) and (c), by increasing student knowledge about retail design that is more sensitive to various consumer needs and moreover, "how to" achieve that.

**Table 3**

***Sample of Open-ended Responses from Students before and after Project Execution***

| | Pretest | Post-test (same student as pre-test) |
|---|---|---|
| Sample | Knowledge About ADA | |
| 1 | (no answer) | American disabilities act |
| 2 | (no answer) | it is the American Disability Act, requires people to accommodate those with disabilities and protects people with disabilities from discrimination |
| 3 | American Disability Act. I just know what it stands for... | The American Disabilities Act of 1990 is a piece of legislation requiring the inclusion of various forms of assistance to be provided by all public consumer environments. These forms of assistance are specifically created so as not to exclude the legally disabled community from major life activities, such as walking, shopping, and eating. |
| Sample | Knowledge About Consumer Normalcy | |
| 1 | Making a customer feel welcome in their environment | Allowing all consumers the same level of experience |
| 2 | Able to serve all customers the same. | Being able to perform tasks like everyone else |
| 3 | Consumer normalcy is a consumer feeling that they belong in a store, that it is not a burden for them to be there. | Consumer normalcy is the store making changes or being set up in a way that makes each consumer feel normal and nor out of place |
| 4 | Making the shopping experience the same for everyone. | Every consumer being able to shop with limit help |
| 5 | Consumer normalcy is being accepted as an equal to other consumers in ability | Consumer normalcy is "normalizing"" consumers with disabilities by accommodating them and making them feel welcome. This is recognizing all consumers' uniqueness and appreciating it rather than pointing out differences and making them appear like drawbacks or flaws. |

***Retailing Project Effectiveness in Learning***

We measured whether the project successfully met students' expectations regarding learning and application both before (pre-test) and after (post-test) completion. Two sets of analysis were conducted. First, both the pre- and post- results were compared against the midpoint of three on a 5-point scale (see Table 4a). Second, paired samples *t*-tests comparing the pre- versus post- test means were conducted (see Table 4b).

**Table 4a**

***T-Tests of Pre-test and Post-test Survey Results***

| Pre-test | *Mean* | *df* | *t* | *p* |
|---|---|---|---|---|
| Perceived Confidence | 3.50 | 35 | 3.48 | <.00 |
| Job Skills | 3.36 | 35 | 2.84 | <.01 |
| Knowledge | 3.95 | 35 | 14.41 | <.00 |
| Learning Goals | 3.36 | 35 | 4.10 | <.00 |
| Involvement | 3.97 | 35 | 6.17 | <.00 |
| Satisfaction | 3.60 | 35 | 4.18 | <.00 |

| Post-test | *Mean* | *df* | *t* | *p* |
|---|---|---|---|---|
| Perceived Confidence | 3.93 | 29 | 6.88 | <.00 |
| Job Skills | 3.33 | 29 | 2.20 | <.05 |
| Knowledge | 3.99 | 29 | 12.61 | <.00 |
| Learning Goals | 3.53 | 29 | 5.10 | <.00 |
| Involvement | 3.97 | 29 | 5.71 | <.00 |
| Satisfaction | 3.63 | 29 | 3.45 | <.00 |

*Notes*. Compared to the midpoint value of 3.0 on a 5-point scale.

**Table 4b**

***Pairwise t-test Comparison of Pre-test and Post-test Survey Results***

| Learning Outcomes | Pre-test Mean | Post-test Mean | *df* | *t* | *p* |
|---|---|---|---|---|---|
| Perceived Confidence | 3.5 | 3.93 | 63 | 2.16 | <.05 |
| Job Skills | 3.36 | 3.33 | 63 | .15 | ns |
| Knowledge | 3.95 | 3.99 | 63 | .39 | ns |
| Learning Goals | 3.36 | 3.53 | 63 | 1.26 | ns |
| Involvement | 3.97 | 3.97 | 63 | .00 | ns |
| Satisfaction | 3.6 | 3.63 | 63 | .13 | ns |

All scores (pre- and post- test) were significantly above the midpoint value of three on a 5-point scale (Table 4a). Further, the paired comparison results demonstrated overall project effectiveness. Students found the project to significantly improve their perceived confidence in designing a retail space ($M_{Pretest}$ = 3.50(.85) vs. $M_{Posttest}$ = 3.93(.74)) ($t(63)$ = 2.16, $p$ < .05). Between completion stages, we noted no significant changes for job skills, knowledge of retailing and traditional learning goals (*p's* = ns). Finally, students' expectations about being involved in class by working on the project and satisfaction from the course also remained high (significantly above midpoint) even after completing the project (see Table 4b).

These results suggest that the project helped students achieve the desired outcome, while not detracting from other course goals. While the scores measured post-project were significantly above three, more importantly students' pre-project expectations were met in terms of knowledge, learning goals, job search preparation, involvement and course satisfaction. The pre-test served as a control, which further strengthens the significance and intended learning objectives of our project.

### *Discussion and Challenges*

This project's implementation challenges relate to the wide range of disability issues (both physical and mental) students can consider in addition to the myriad nature of goals/activities embedded within a retail shopping environment. At present, student groups consider disability issues from categories of visual, hearing, or mobility disability because in past iterations of the project the generic study of consumers with disabilities was felt cumbersome. Anecdotally, our experience is that students with a connection to a person with a specific disability (e.g., multiple sclerosis) will sometimes elect to focus on that disability, which generally enhances students' motivation and project commitment. Cognitive walkthroughs compliment techniques frequently used in retailing research (e.g., the critical incident technique), but we would still expect a small learning curve for new instructors and students.

### *Adaptability of Innovation*

This class project is well suited to a retail course focusing on store design layout and visual merchandising. Other appropriate courses might include consumer behavior and corporate social responsibility; a services marketing course in retail, personnel training or servicescape chapters; or a consumer behavior course on consumer shopping behavior and vulnerability. The innovation could also be easily adopted for an MBA-level course by assigning related readings referred to in this paper or possibly streamlined for a fundamentals of marketing course.

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