

University of Massachusetts Boston

## ScholarWorks at UMass Boston

---

Instructional Design Capstones Collection

Instructional Design Graduate Program

---

5-3-2020

### ILT to Mobile eLearning Design for At-Risk Populations

Jacqueline R. Tomrdle

*University of Massachusetts Boston*

Follow this and additional works at: [https://scholarworks.umb.edu/instruction\\_capstone](https://scholarworks.umb.edu/instruction_capstone)



Part of the [Instructional Media Design Commons](#), and the [Online and Distance Education Commons](#)

---

#### Recommended Citation

Tomrdle, Jacqueline R., "ILT to Mobile eLearning Design for At-Risk Populations" (2020). *Instructional Design Capstones Collection*. 62.

[https://scholarworks.umb.edu/instruction\\_capstone/62](https://scholarworks.umb.edu/instruction_capstone/62)

This Open Access Capstone is brought to you for free and open access by the Instructional Design Graduate Program at ScholarWorks at UMass Boston. It has been accepted for inclusion in Instructional Design Capstones Collection by an authorized administrator of ScholarWorks at UMass Boston. For more information, please contact [scholarworks@umb.edu](mailto:scholarworks@umb.edu).

A final project presented to the faculty of the  
Instructional Design Master's Degree Program  
University of Massachusetts Boston

**ILT to Mobile eLearning Design for At-Risk Populations**

Submitted by  
Jacqueline R. Tomrdle

in partial fulfillment for the requirement of the degree  
MASTER OF EDUCATION

May 3, 2020

*Dr. Carol Ann Sharicz*

---

Approved by Dr. Carol Ann Sharicz, Faculty

### **Abstract**

This capstone assisted a non-profit company to produce mobile learning for the vulnerable, at-risk population they serve. A fellow University of Massachusetts Boston Instructional Design Program graduate created an eLearning visual brand guide laying the foundation for a consistent accessible brand for the company. As a result, this author used the tools of analysis, instructional design, development, implementation and evaluation to create deliverables of six workshop modules. The non-profit company is one-step closer to their goal of online support for their graduates and promotion of their program to a larger audience reach in Massachusetts.

*Keywords:* adult education, instructional design, eLearning design, mobile design, accessibility, at-risk populations

## Table of Contents

Abstract.....	2
Analysis.....	4
Background.....	4
Analysis Plan.....	5
Analysis Report.....	6
Design.....	7
Learning and Performance Objectives.....	7
Instructional Strategy.....	8
Development.....	12
Instructional Materials .....	12
Implementation.....	18
Evaluation.....	18
Conclusion.....	19
References.....	20
Appendix A.....	23
Appendix B.....	25
Appendix C.....	25
Appendix D.....	27
Appendix E.....	28
Appendix F.....	30

## Analysis

### Background

The Boston, Massachusetts company is a non-profit organization serving at-risk individuals in shelters and transitional facilities that assists with gaps in service across metro Boston and Eastern Massachusetts. The company was initially founded with a vision to provide assurance programs but over the last 27 years has grown to offer a wide variety of health, educational, and skills development programs such as job readiness and life skills. The assistance supports abuse recovery, pre-release, domestic violence shelters and transitional living programs, human service and public health programs. The company success rate is 68% for recidivism compared to 35% on average for similar programs across the United States. This success demonstrates their founding mission has succeeded: to provide programs that are life-changing from the inside out.

The company conducted all trainings face-to-face. The stakeholders initiated a strategic plan for an online learning management system (LMS) and web portal that would allow the company to provide a wider reach for promoting their workshops to a broader audience as well as ongoing support for their graduates. To transition ILT to mobile eLearning, the company hired a web design company to re-design their website. The web design company chose LearnDash, a WordPress LMS plugin to house the eLearning trainings and function as a portal for promotion and program graduate support.

The company also asked for assistance from the University of Massachusetts Boston Instructional Design Graduate Program. Penny Munro, a 2019 University of Massachusetts Instructional Design graduate designed a visual brand guide to solve inconsistency problems that existed for teams working with the company. This was achieved using a systems-thinking

approach that examined the standards for consistency in business, research in branding's impact on eLearning development and the importance of assessing end-user behavior and facilitated solutions prior to development of eLearning (Munro, 2019).

My goal as Instructional Designer in this capstone project will be to utilize the eLearning visual brand guidelines set forth plus learning theory research to create six eLearning modules to provide the mobile reach desired to help the vulnerable at-risk population that the non-profit company desires to serve.

### **Analysis Plan**

In early February 2020, I spoke by phone with the company stakeholders to get background on what the desired outcome is for creating eLearning training for computer and mobile devices. They shared that the at-risk population struggles with anxiety, fear and unknown circumstances. They bridge the gap to give hope to those who need a second chance by boosting self-esteem, confidence, healing broken relationships and teaching life and job skills by changing a person from the inside out.

My first plan of action was to isolate areas that needed to be addressed when designing for an at-risk population. What device do they use to access the internet? What is their internet speed? How often do they access the internet? What are their technical abilities online? What are the ages? What is the educational background? Are there language needs other than English? Are there disabilities in sight or hearing that need to be considered? Is there an interest in the online learning and will they use it if available? What is the motivation for this target audience?

## Analysis Report

The needs assessment survey was sent to the company the end of February. I am very glad because a few weeks later and there may not have been survey results due to the COVID-19 pandemic that shut down a lot of businesses in the United States by the end of March. There were 105 respondents to the survey. See Appendix A.

The survey results revealed certain target audience patterns to be aware of as I design objective strategies. In 2012, Horton noted the importance of learner capabilities to be aware of when designing. The majority of clientele (63.8%) use smartphones and computers with iPad use (23.9%). There is also clientele with no internet access (10.5%) which signals that there may be technology challenges. The majority of users (92.6%) have fast to medium internet speed, but there is clientele that have slow internet (7.4%). That signals to me that I need to be careful to make sure my learning modules do not have large files or long loading time. This will cause learners to become frustrated. It could also cause decreased motivation leading to clientele choosing to stop the program. The majority of clientele (83%) log in daily and weekly. Some users log in monthly or never use the computer (17%) which signals that I will have to keep the motivation and interest high but simple since there could be technology challenges for the low-end users. The internet abilities are pretty high with very familiar and familiar (88%) at being able to look things up, using weblinks (80%) and doing online learning (76%) The learning curve changes with downloading and uploading files (67%). The clientele that log on daily and weekly (69%) I suspect have higher motivation than the monthly or less than monthly (31%) which could be an area of concern to program dropout rates with this group. The positive side is that there is a lot of interest in the online programs (80%) and continuing to use after graduation support (77%).

Being able to isolate the main age groups of 19 – 34 age (56%) and 35 – 64 age (44%) is very important. In 2017, Cut examined the differences in digital natives and digital immigrants. The 19 - 34 age group are digital natives that grew up with the technology conversely the 35-64 age are digital immigrants being raised before the digital age which might cause a technology gap with the older learners in this group. The other area to be aware of is the vast range of educational attainment. The purpose of education is to close the gaps between current levels of performance and levels of success (Horton, 2012). Horton also suggests to design for the lowest denominator (55%) some high school, GED or high school and to keep the language simple but keep the motivation high for learner interest. English language is very high (98.1%) and the eLearning Visual Style Guide which lays out accessibility parameters by Penny Munro, 2019 University of Massachusetts Instructional Design Program Graduate will be invaluable to me for design.

## **Design**

### **Learning and Performance Objectives**

It is evident from the survey results that there are certain factors for the at-risk clientele that I must keep in mind such as accessibility, designing materials for educational level of user, motivation for engagement, responsive design on whatever device is use and ensuring content is designed correctly for short load time so that user does not become frustrated, log off and quit the training.

Horton (2012, p. 9) states that each learning objective requires us to design a learning object to accomplish that objective. There are two types: learning activities and tests. Tests are questions or other actions that verify learning occurred and the objectives were accomplished.



Learners complete learning activities in order to learn. There are three types required: the learner *absorbs* knowledge by reading or watching, the learner *does* practice or discovery activities to deepen learning; and learners complete activities designed to *connect* what they are learning to their lives and work.

### **Instructional Strategy**

Since the target audience is at-risk adult learners, Malcolm Knowles (1984) proposes that their needs be addressed in specific ways. Boone et al. (cited in Ayers, 2011) proposed that the failure of programs to address adult learners' immediate interests results in a lack of motivation. Brookfield's work (as cited in Ayers, 2011) cautions that instructional designers and instructors are acting with a "customer service mentality" (p. 339). Brookfield sharing the same viewpoint warned that instructional designers may prevent adult learners from achieving essential learning goals if the program is so contingent on adult learners' specific needs. Knowles (1984) raised certain ambiguities concerning the role of instructional designers and instructors in defining learning needs. Knightly (2007) and Laurillard (2012) state that learners enter formal education bringing with them emotional and intellectual characteristics as well as a mix of conceptions, skills, and motivation from prior learning experiences. This means that while capitalizing on learner's prior experiences, it supports learners to move beyond. This can be accomplished by participating in learning environments that are designed to foster collaboration, critical thinking, independent learning, application of knowledge in real-life settings, reflection, and self-regulation which will lead to motivating the learner and enhance learning. (Diep et al., 2019, p. 227).

While adults are portrayed as self-directed learners, coherent and clear presentation of course goals, structure, and subject matter content is of crucial importance because this results in

a feeling of safety. (Milheim,2012; Philips, et al, 2017; & Diep et al., 2019, p. 226). This is where adult learning should also be transformative with opportunities to exercise reflection in recapturing their experiences, to think about it, mull over it and evaluate it (Meizirow,2000; Taylor, 2008; & Diep et al., 2019, p. 226). While a person matures, the motivation to learn becomes internal. Adults do not learn for marks, neither to please anyone. Knowles (1984) urges that adults learn what they are interested in, or for self-esteem. (Diep et al., 2019, pp. 226-227).

Marrifino & Johnson (2016) recommend that when designing mobile learning for an at-risk population with accessibility needs, that the instructional design principles of the cognitive theory of multimedia learning (CTML) must be taken into account. Mayer (2005) defines multimedia as a presentation that includes words (spoken or written) and pictures, which can include photographs, schematic diagrams, animations, or videos. Mayer's cognitive theory of multimedia learning provides theory driven instructional design for optimizing instructional effectiveness.

Sweller (2005) proposes cognitive theory of multimedia learning assigns three demands on a learner's cognitive capacity: germane, intrinsic and extraneous. Germane is the good cognitive load that is placed on working memory. Intrinsic cognitive load is the necessary level of difficulty associated with instructional materials that is directly tied to information or content. Extraneous cognitive load is viewed as background noise or irrelevant information which can also distract. Since working memory capacity is limited, an individual can become overloaded if the demands on the learners' working memory exceeds his capacity leading to a reduction in learning. Mayer (2009) advises that instructional designers avoid creating situations of cognitive overload.

Another aspect to be mindful of when designing eLearning is the redundancy principle. The redundancy principle states that individuals learn better from an animation/diagram and narration rather than an animation/diagram with narration and redundant onscreen text. However, when audio is paired with visuals, or text is paired with visuals, learners are not forced to choose how they will receive the information. (Pappas, 2015). There are three exceptions to the redundancy principle. The first exception is when the online presentation lacks visual imagery: when no images, graphics or diagrams are present, there can be both audio and text on the screen. The second exception is when learners have ample time to absorb the eLearning content then it is acceptable to include both text and audio narration as long as there is a gap between page screens to effectively absorb information. The third exception is if there is a hard of hearing audience. If learners are hard of hearing, it is best to pair verbatim text with audio. This can also be used if the narrator is difficult to understand. A transcript should also be included.

Text and audio can go hand in hand if used properly. So how do you accomplish this? Pappas (2015) suggest that you give learners control over the audio and text rather than deciding for them. Include captions that can be turned on and off and audio that can be muted. This is ideal for mobile learning. The second tip is to use text to highlight the key points in the course. This draws the learners' attention to the core concepts and ideas without overwhelming them with too much information. The text becomes a support tool for the audio rather than conflicting with it. Pappas (2015) advises omitting navigation instructions from your audio narration when navigation icons are clearly visible on screen. This also means that it is essential to make sure that your navigation is clear for your learners to see when the audio ends and they want to move to the next page so that they are not frustrated.

Wang & Shen (2012) recommend four principles for message design on different devices.

- Principle 1 – design for the least common denominator in technology. If you compare cell phones some are sterile and clunky. You cannot assume that everyone will have the latest model so plan for chunking content into lessons and videos no longer than five minutes.
- Principle 2 – design for eLearning, adapt for mLearning. Code material using HTML so that there are less problems for learners.
- Principle 3 – design shortened and condensed materials for smartphones. This means providing brief key points or summaries at the end for older adult users. Study guides, simple question and answers, and written content with pictures is also a good choice for smartphones.
- Principle 4 – be creative but do it in small bites and be aware of how it will look in responsive design.

Wang & Shen (2012) believe that the goal of message design is to coordinate elements of language, images, signs and symbols so that they work together in our brains to provide better accessibility, usability and learning. If designers have a deeper understanding of how people learn and how cognition works, there is a better chance that designers can appropriately organize different learning messages to integrate and fit the human cognitive needs. (p.561-567).

Mayer's (2005) theory of multimedia message design provides the backbone to achieve this. Through *coherence* extraneous content is eliminated, *signaling* cues the learner on how to process the information, *spatial contiguity* aligns printed words near graphics, *cognitive redundancy* avoids using the same stream of printed and spoken words and *spatial contiguity* assists learners by presenting narration, keyword labels and animation closer together. Words

should be presented in auditory rather than on-screen text. This means *need to know rather than nice to know*. If it is not necessary do not include it. (Mayer & Moreno, 2005, pp. 200-205).

Wang & Shen (2012) conclude that since mLearning travels with the learner, a variety of conditions such as noisy environments may be encountered to where the learner is hearing-impaired or cannot hear the audio components. The designer must be aware of this and choose content carefully so that it is not dependent on narration only. If captions are used, they must be centered at the bottom in one line so that it does not interfere with on-screen material. The use of color also needs special attention for learners who have vision problems or color blindness which usually affects blue/green and red/green color contrasts in the user hence the reason for using WCAG testing. (p. 568). Instructional designers also need to be aware to not increase extraneous cognitive load by splitting attention between multiple visual inputs which will reduce knowledge construction. The split-attention principle recommends that text be added next to the graphic so that it compliments and not competes for the learners' attention. (Ayers & Sweller, 2005, p. 334). See Appendix B.

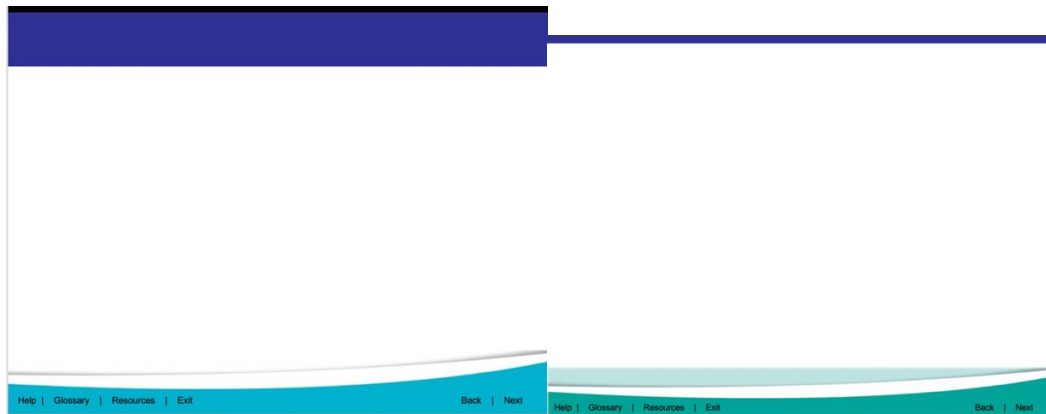
## **Development**

### **Instructional Materials**

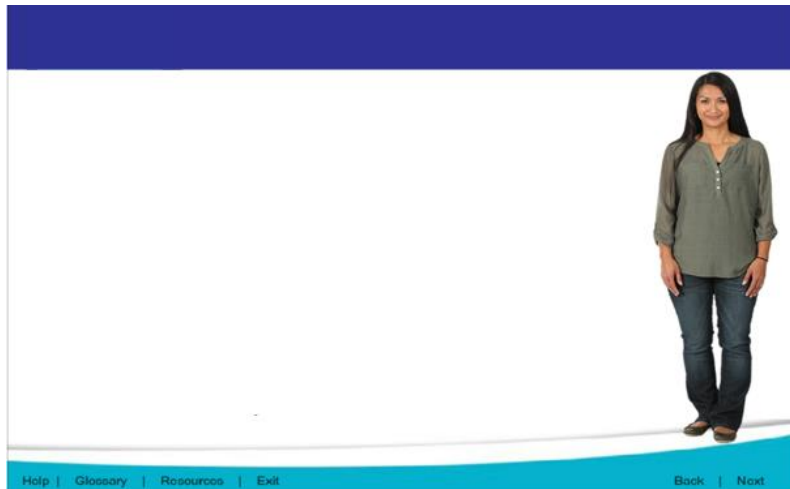
The authoring tool used for the creation of modules was Adobe Captivate 2019. Per the parameters set by Penny Munro (2019) in the company visual brand guide, the templates were created in PowerPoint to address WCAG 2.0 and Universal Design standards. This ensured that the built-in accessibility checker could catch problems before transfer to Captivate. Pre-made company templates created by Penny Munro were used throughout the modules. The visual brand guide build parameters consisted of general screen layout and white space, alignment of

text and line length, font face and attributes, text emphasis (WCAG requirements), text size, text color, text links to consist of active link/visited link with web safe colors and company color schemes tested for accessibility. Accessibility testing sites for color contrasting and web safe equivalents were also provided (Munro, 2019, p. 1-20). The company logo appears in the upper left-hand corner of all slides for a consistent branding look. It cannot be shown for confidentiality. See Appendix C.

### Company Design Template Styles



I had the idea to introduce characters that will guide the learner through the material. The stakeholders really liked the concept and signed off on the idea.



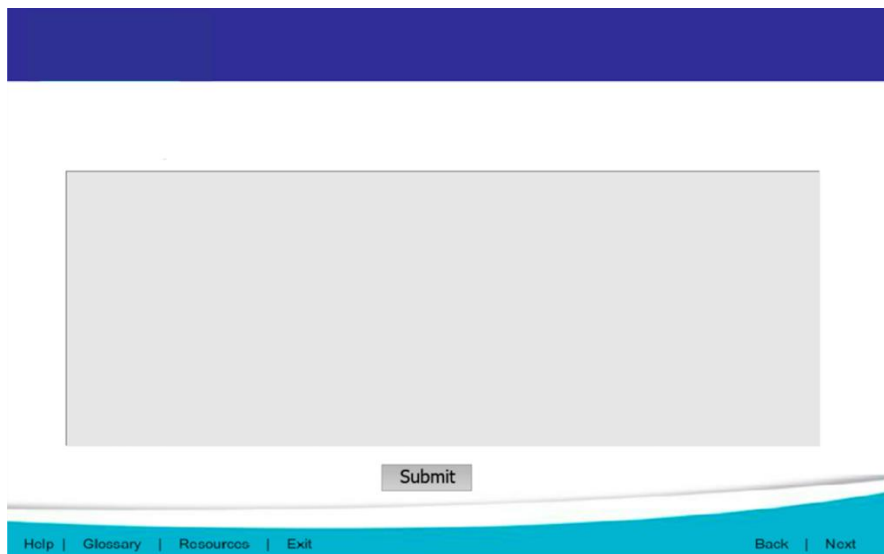
Full, mid and close-ups will be used throughout the training for a sense of human connection.



The six modules designed used *absorb*, *do* and *connect* activities which were reading and watching as the *absorb*. The *do* were journaling activities for discovery, reflection and deepen

learning. Self-checks and quizzes were used for *connect* to accomplish the learning objectives. Client buy-in was crucial in the development stage since I was given ILT course material to create the mLearning. Changes were made as I received feedback on client anticipated look and feel of learner interaction for *absorb, do and connect*. This required time in the beginning as I grasped the stakeholder vision and expectations for the design project.

Horton's (2012, p. 9) learning activities *absorb, do and connect* became real on designing the *do* activity for discovery, reflection and deepened learning. The learner had reflection prompts for questions or short journaling exercises that were completed and submitted. Here is an example. I could not show actual slide for company confidentiality.



The image shows a screenshot of a learning activity interface. At the top, there is a dark blue horizontal bar. Below it is a large, empty rectangular text input area. Underneath the input area is a small, light gray button labeled "Submit". At the bottom of the interface, there is a teal-colored footer bar containing navigation links: "Help | Glossary | Resources | Exit" on the left and "Back | Next" on the right.



Self-checks and quizzes used *connect* to accomplish the learning objectives.

Multiple Choice

**What Color is the Sky?**

A) The sky is my favorite color of blue  
 B) The sky is orange

Try again

Help | Glossary | Resources | Exit
Back | Next

Matching

**Match the following questions**

Question Answer

<input type="text" value="B"/>	What is the answer to A		A) B
<input type="text" value="C"/>	What is the answer to B		B) C
<input type="text" value="A"/>	What is the answer to C		C) A

You must answer the question before continuing.

Help | Glossary | Resources | Exit
Back | Next

Multimedia was kept simple for the at-risk learners on mobile devices. See Appendix E.

The website developer chose LearnDash as the LMS (Learning Management System) which is a plugin for WordPress allowing seamless integration and use. A nice feature is the LMS can collect data from the learner journaling, self-checks and quizzes to analyze the effects of the training. This level of analysis has not been available to assist them for assessing at-risk

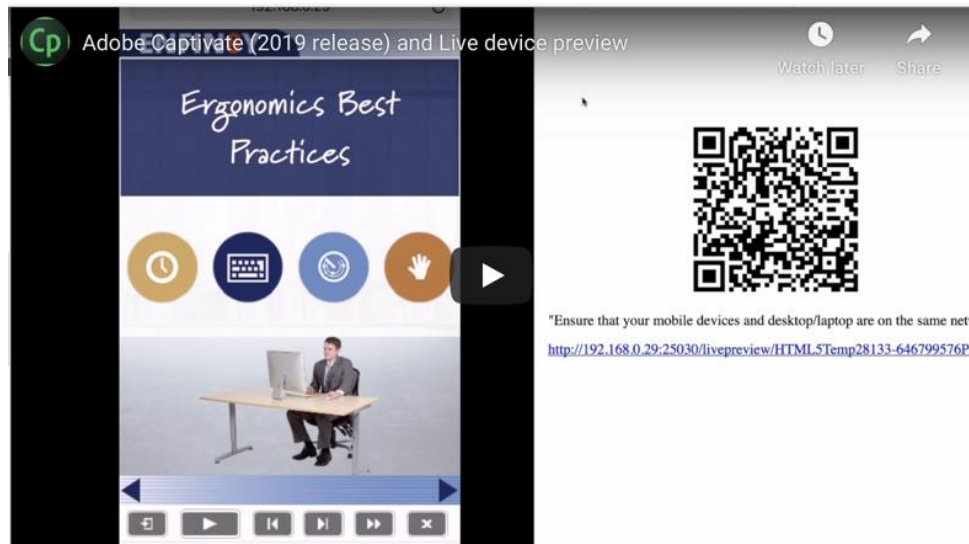
clientele. Adobe Captivate 2019 also created live preview of responsive design on devices. This was done by selecting a responsive project.



When content was ready, I selected preview. I cannot show company examples due to confidentiality. This is from Adobe Captivate training.



You are then given a QR code to scan your phone or iPad.



This allows live access to the design. If changes are made, it will update in real-time until signed out of the project. This is a huge advantage for instructional designers to be able to see the actual end result look so there are no surprises. Once the eLearning modules were completed and the stakeholders signed off on the work, the Captivate project files were sent to the next level of production. See Appendix F.

### **Implementation**

Implementation began with six storyboards that went through the redesign process several times until stakeholder sign-off. The next design level was Adobe Captivate where six modules were created and modified until stakeholder sign-off. Once completed they were passed to the next level of production.

### **Evaluation**

The four levels of the Kirkpatrick Model guided me through the process. 1) Reaction to the online training was measured as I progressed through designing the storyboards and modules.

Was it well received from the stakeholders? Yes. 2) How much the participant learns will be experiential with journaling, built-in concept checkers and short quizzes. Again, this will be tracked by the LMS data the company can analyze for learner interaction behavior. 3) By applying what is learned, behavior change was my goal. As the learner progress through the modules, the metrics will show success or failure on learner motivation and retention. 4) Was it a success? The stakeholders are happy with what they have seen. After 27 years, they know their clientele and I am excited to be part of this journey to help them change lives from the inside out.

### **Conclusion**

The focus throughout this capstone project was to support the non-profit company in realizing their dream of creating mobile learning to widen their reach of assisting the vulnerable at-risk population that they serve. A fellow University of Massachusetts Boston Instructional Design Program graduate created an eLearning visual brand guide that laid the foundation for a consistent accessible brand. As a result of what is now in place, this author used to tools of analysis, instructional design, development, implementation and evaluation to create six workshop module deliverables. The non-profit company is one-step closer to meeting their goal of online support for their graduates and the promotion of their programs to a larger reach in Massachusetts.

## References

- Ayers, D.F. (2011). A critical realist orientation to learner needs. *Adult Education Quarterly*, 61(4), 341-357.
- Cady, S. H., Medley. B., & Steiger. C.T. (2018). Assessing change: integrating Kirkpatrick's and Phillips' models into the five levels of evaluation. *Organizational Development Journal*, 55-66.
- Carmo, T., Nogueira. C., Beretta. L.O., & Guntijo. M.R. (2019). Comparing sighted and blind users task performance in responsive and non-responsive web design. *Knowledge & Information Systems*, 58, 319–339.
- Cut, M. (2017). Digital natives and digital immigrants. How are they different? *Digital Reflections*. <https://medium.com/digital-reflections/digital-natives-and-digital-immigrants-how-are-they-different-e849b0a8a1d3>
- Diep, A. N., Zhu, C., Cocquyt, C., DeGreef, M., Vo, M. H., & Vanwing, T. (2019). Adult learners needs in online and blended learning. *Australian Journal of Adult Learning*, 59(2), 223-253.
- Greer, D. L., Crutchfield, S. A., & Woods, K. L. (2013). Cognitive theory of multimedia learning instructional design principles, and students with learning disabilities in computer-based and online learning. *The Journal of Education*, 193(2), 41-50.
- Horton, W. K. (2012). *E-Learning by design*. Pfeiffer.
- Knightley, W. M. (2007). Adult learners online: students' experiences of learning online. *Australian Journal of Adult Learning*, 47(2), 264-288.
- Knowles, M. S. (1984). *Andragogy in action: applying principles of adult learning*. Jossey-Bass.

- Laurillard, D. (2012). *Teaching as a design science: building pedagogical patterns for learning and technology*. Routledge.
- Lee, Y., Lee, J., (2017). A checklist for assessing blind users' usability of educational smartphone application. *Universal Accessibility Information Society*, 18, 343–360.
- Linder-VanBerschot, J. A., Summers, L. L. (2015). Designing instruction in the face of technology transience. *The Quarterly Review of Distance Education*, 16(2), 107-117.
- Marraffino, M., Johnson, C. I. (2016). Applying multimedia learning principles to design effective mobile training. *Proceedings of the Human Factors and Ergonomics Society*, 12(5), 1205.
- Mayer, R. E. & Moreno, R. (2002). Aids to computer-based multimedia learning. *Learning and Instruction*, 12, 107–119.
- Mayer, R. E. (2005). Cognitive theory of multimedia learning. *The Cambridge Handbook of Multimedia Learning*. Cambridge University Press.
- Mayer, R. E. (2009). *Multimedia Learning* (2<sup>nd</sup> Ed.). Cambridge University Press.
- Mezirow, J. (2000). Learning as transformation: Critical perspectives on a theory in progress. *The Jossey-Bass Higher and Adult Education Series*. Jossey-Bass Publishers.
- Milheim, K. L. (2012). Towards a better experience: Examining student needs in the online classroom through Maslow's hierarchy of needs model. *Journal of Online Learning and Teaching*, 8(2), 159-171.
- Munro, P. J. (2019). ILT to eLearning conversion: Realizing brand consistency across teams. University of Massachusetts Boston. Scholarworks at UMass Boston. Instructional Design Capstone Collection. [https://scholarworks.umb.edu/instruction\\_capstone/46](https://scholarworks.umb.edu/instruction_capstone/46)

- Nguyet, A., Zhu, D.C., Cocquyt, C., De Greef, M., Vo. M. H., & Vanwing. T. (2019). Adult learners' needs in online and blended learning. *Australian Journal of Adult Learning*, 59(2), 223-254.
- Pappas, C. (2015). 4 tips to apply the redundancy principle in eLearning. eLearning Industry. <https://elearningindustry.com/4-tips-apply-redundancy-principle-elearning>
- Pappas, M. A., Demertzi, E., Papagerasimou, Y., Koukianakis, L., Kouremenos, D., Loukidis, I., & Digas, A. S. (2018). eLearning for deaf adults from a user-centered perspective. *Educational Science*, 8, 1-15.
- Philips, L. A., Baltzer, C., Filoon, L., & Whitley, C. (2017). Adult student preferences: instructor characteristics conducive to successful teaching. *Journal of Adult and Continuing Education*, 23(1), 49-60.
- Sweller, J. (2005). The redundancy principle in multimedia learning. *The Cambridge Handbook of Multimedia Learning*. Cambridge University Press.
- Taylor, E. W. (2008). Transformative learning theory. *New Directions for Adult and Continuing Education*, 119, 5-15.
- Vann, L., (2017). Demonstrating empathy: A phenomenological study of instructional designers making instructional strategy decisions for adult learners. *International Journal of Teaching and Learning in Higher Education*, 29(2), 233-244.
- Wang, M., Shen, R. (2012). Message design for mobile learning: learning theories, human cognition and design principles. *British Journal of Educational Technology*, 43(4), 561-575.

## Appendix A

Needs assessment questions and results.

1. How do you access the internet? N = 105
  - a. No internet access – 10.5%
  - b. Phone – 63.8%
  - c. Computer – 12.4%
  - d. Both phone and computer – 10.5%
  - e. iPad – 1.0%
  - f. Other (Library) -1.9%

2. What is your internet speed? N = 95
  - a. Fast – 52.6%
  - b. Medium – 40%
  - c. Slow – 7.4%

3. Frequency of internet usage N = 105
  - a. Daily – 69.8%
  - b. Weekly – 13.2%
  - c. Monthly – 1.9%
  - d. Less than once a month – 2.8%
  - e. Never – 12.3%

4. Abilities N = 105

Type of ability	Very familiar	Familiar	Somewhat Familiar	Unfamiliar	None	N
Look up stuff	68.6%	19.0%	6.7%	2.9%	2.9%	105
Download files	50.5%	19.4%	16.5%	7.8%	5.8%	103
Upload files	49.5%	16.5%	21.4%	7.8%	4.9%	103
Using weblinks	63.1%	17.5%	10.7%	3.9%	4.9%	103
Doing online learning	54.4%	21.4%	13.6%	5.8%	4.9%	103

5. Frequency of internet usage to support personal goals through company
  - a. Daily- 45%
  - b. Weekly – 24%
  - c. Monthly – 7%
  - d. Less than once a month – 10%
  - e. Never – 14%



6. Are you interested in company online programs? N = 103
  - a. Yes – 79.6%
  - b. No – 19.4%
  - c. Maybe – 1%
  
7. If yes, would you use the program to meet your goals after graduation? N=82
  - a. Yes – 76.8%
  - b. No - 0
  - c. Maybe – 23.2%
  
8. Age of respondents. N = 104
  - a. 13-18 – 0 %
  - b. 9-24 – 9.8%
  - c. 25-34 – 46.2%
  - d. 35-64 – 44.2%
  - e. Over 65- 0 %
  
9. Gender of respondents. N = 103
  - a. Female – 98.1%
  - b. Male – 0 %
  - c. Other – 1.9%
  
10. Educational Attainment. N = 103
  - a. Some high school – 17.5%
  - b. High school graduate or GED – 37.9%
  - c. Some college – 30.1%
  - d. College degree or higher – 14.6%
  
11. Preferred Language. N = 10
  - a. English – 98.1%
  - b. Other – 1.9% - (English and Spanish)
  
12. Need for Assistive Technology. N=31
  - a. Screen Reader – 41.9%
  - b. Video with Closed Captioning – 38.7%
  - c. Highlighting – 35.5%
  - d. Other – 16.1%
  - e. Other Comments about Assistive Technology.
    - a. I don't hear well,
    - b. I need magnifying.
    - c. I need help from someone.
    - d. I need spell check.
    - e. I use Youtube.com to answer any questions.

### Appendix B

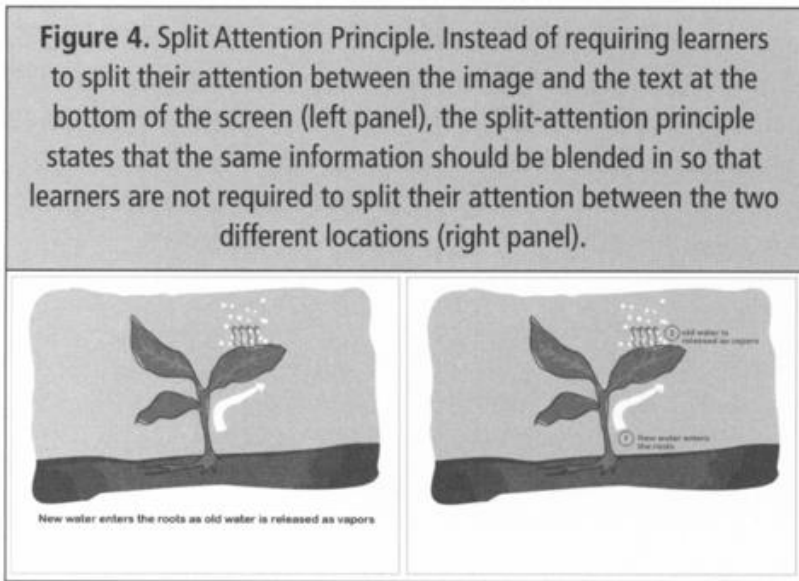
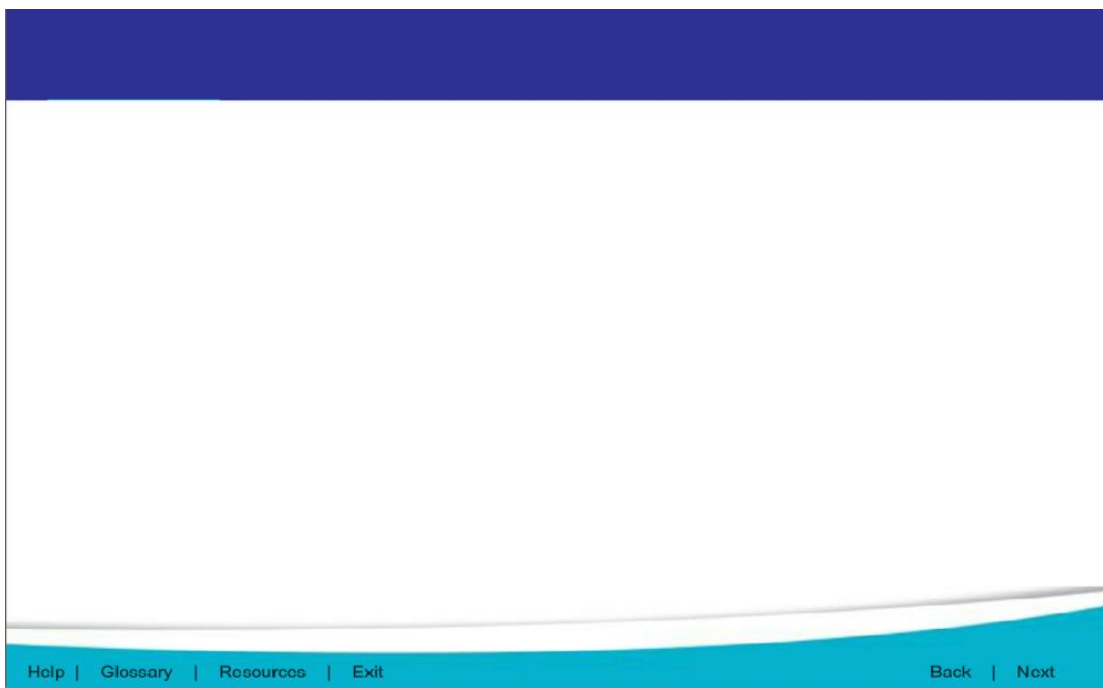


Figure 4. Split Attention Principle.

### Appendix C

Main company template. Logo is in upper left corner. Cannot be shown for confidentiality.



Alternative Template Slide #1

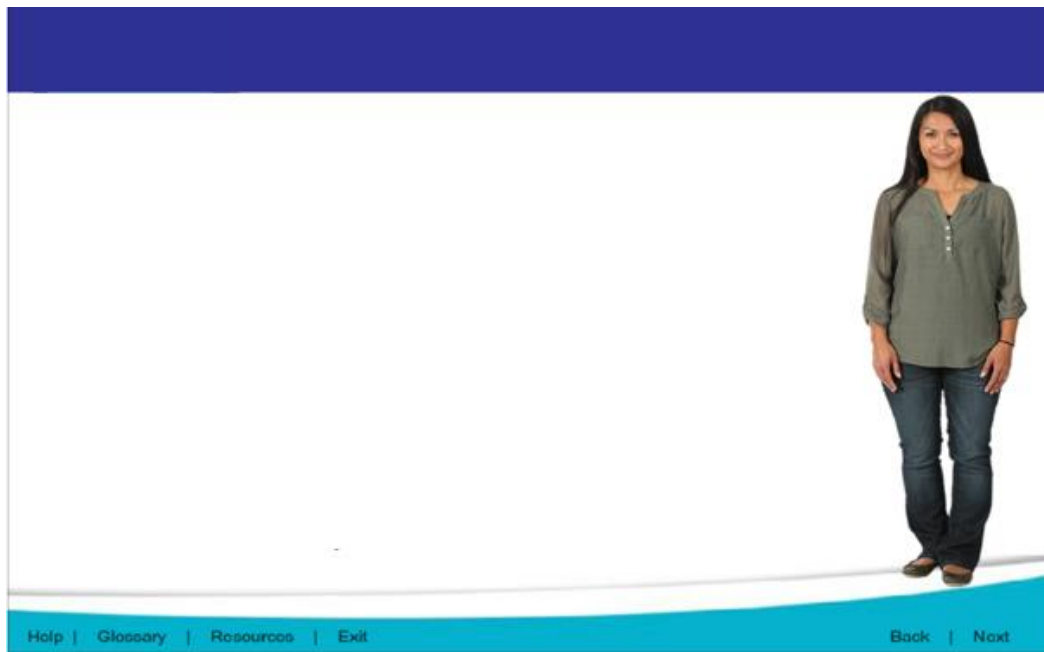


Alternative Template Slide #2



## Appendix D

### eLearning Character Guides Examples



Example of alternative character poses



**Appendix E**

Example of Journaling/Writing Side

A screenshot of a digital journaling or writing interface. At the top is a solid dark blue horizontal bar. Below it is a large, empty light gray rectangular box for writing. Underneath the writing box is a small gray button with the word "Submit" in black text. At the bottom of the interface is a teal-colored footer bar containing navigation links: "Help | Glossary | Resources | Exit" on the left and "Back | Next" on the right.

### Example of Quiz Slide - Matching

Question 1 of 1 **Matching**

**Match the following questions**

Question	Answer
<input type="checkbox"/> B What is the answer to A	<input checked="" type="checkbox"/> A) B
<input type="checkbox"/> C What is the answer to B	<input checked="" type="checkbox"/> B) C
<input type="checkbox"/> A What is the answer to C	<input checked="" type="checkbox"/> C) A

You must answer the question before continuing.

Help | Glossary | Resources | Exit Back | Next

### Example of Quiz Slide – Multiple Choice

**Multiple Choice**

**What Color is the Sky?**

- A) The sky is my favorite color of blue
- B) The sky is orange

Try again

Help | Glossary | Resources | Exit Back | Next

## Appendix F

Captivate 2019 screen for project choices.



Adobe Captivate 2019 preview. Cannot show company. Confidentiality.



Generated QR code and live preview of devices after scanning with device. If changes are made there is a live update as long as the project is open.

