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ERAS: AN EXPERIENTIAL ROLE-PLAYING AGING SIMULATION

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This paper describes the design and development of ERAS, an experiential role-playing aging simulation. This web-based tool was designed for psychology students to engage in a role-playing experience that serves to increase individuals' empathy toward the elderly, as they learn about aging. In ERAS, the learners take on the role of aging individuals. The aging individuals vary in their ethnicity and ages. Successful completion of the scenarios requires the learners to perform a series of role-playing and perspective-taking activities related to the daily life of the aging individual. In this paper, we described the contextual framework, design, development, and review processes. The paper also provides a reflection on the successes and challenges experienced by the design team. Overall, the paper discusses the critical design elements and decisions made by the team.

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INTRODUCTION

The purpose of this project was to design and develop a role-playing, web-based simulation to increase undergraduate students' understanding of the aging process. Moreover, it aimed to improve students' empathy skills and attitudes toward elderly individuals. ERAS was initially designed with the primary intent of helping students enrolled in an Adulthood & Aging course offered by the Psychology Department at our institution.

As part of the Adulthood & Aging course, students must complete service learning at an assisted living facility. The primary instructor for this course, a Psychology faculty member (and member of the design team), observed that many students were concerned about interacting with the elderly and anxious about the aging process in general.

Additionally, students had demonstrated in various quiz activities that they believed many common myths associated with aging: older adults were often categorized as grouchy, senile, and as mostly residing in nursing homes. ERAS allows students to better understand age-related changes that typically occur in late adulthood, and through this process, aims to stimulate empathy and concern for the elderly.

In the animated simulation, students are asked to imagine themselves in the role of elderly individuals and to learn about various age-related issues. This is accomplished through observing the avatar's reactions, experiencing the associated outcomes, and engaging in decision-making and reflection. This perspective-taking experience aims to increase students' empathic attitudes toward the elderly and reduce anxiety regarding aging. As a result, students should improve their understanding of concepts covered in class, be more willing to interact with the elderly during service learning, and find more interest in the possibility of working with the elderly population after graduation.

The aim of this paper is to describe the process of designing and developing ERAS, a web-based interactive simulation for learners to engage in role-playing while acquiring knowledge about the aging process. The design and development goals for the project included:

Front-End (User Interface)

- To design and develop a web-based interactive interface for ease of use and visual appeal
- To have realistic characters with human-like movement, voice, and facial expressions of emotion
- To create realistic scenarios and dialogues that adequately capture activities of aging individuals

Back-End (Scenes and Web Development)

- To design and program characters with emotion-like animations and movement
- To record and edit voice interactions between the animated characters
- To program interactions between the virtual characters
- To create activities that allow the learners to engage in role-playing and perspective taking
- To develop a web-based portal to host the animations and arrange the sequence of activities

Most of the design and development goals were established by the co-project managers, during the initial planning meetings of the design team. We thought about the desired outcome and relied on the previous design experiences of the Instructional Design Project Manager to determine the goals of the project (in terms of design and development execution). A few goals were revisited and modified based on project execution time, animation skills, and availability of resources at the beginning of the development phase of the project.

CONTEXTUAL FRAMEWORK

After examining the literature (i.e., pertinent Psychology and Instructional Design articles), the members of the design team learned that young adults frequently hold ageist attitudes and negative stereotypes about the elderly (Goncalves, 2009; Wurtele & Maruyama, 2012). Studies have shown that these ageist attitudes may stem from younger individuals feeling anxiety about growing older (Allan & Johnson, 2009; Chonody, 2015; Lasher and Faulkender, 1993). Previous studies have shown that it is possible to increase students' empathy toward aging individuals and to decrease their ageist attitudes through specialized board games and real life role-playing simulations (Chen, Kiersma, Yehle, & Plake, 2015; Varkey, Chutka, & Lesnick, 2006). For instance, Varkey and colleagues (2006) created an aging simulation that required students to experience an age-related impairment while shopping in a mock grocery store full of impatient youthful shoppers, who were actors in the simulation. In this environment, students were required to wear goggles covered with film (to simulate cataracts) and earplugs (simulating hearing loss). These types of experiential activities were helpful in increasing students' empathy and positive attitudes toward the elderly. However, some researchers found that these exercises can increase negative stereotypes, as they highlight negative aspects of aging. Brinker, Roberts, & Radnidge (2014) overcame this issue by creating a board game that focused on age-related decline and positive aspects of aging. This study was more effective at promoting positive attitudes toward aging.

Although these existing tools have been somewhat useful in boosting students' empathy and positive attitudes, they are dependent on having external resources (e.g., trainers, supplies) and require class time to administer. These requirements may go beyond what the typical instructor can manage. Furthermore, many of these games and simulations do not focus on increasing students' knowledge, as only a limited amount of educational information is provided. Increasing students' knowledge about aging has been found to promote positive attitudes toward the elderly (Harris & Dollinger, 2001).

Given the limitations of the experiential learning tools currently available to instructors who teach about the psychology of adulthood and aging, we seek to design and develop a more accessible and effective role-playing simulation. This computer-based simulation prompts students to assume the role of an elderly person, experience one negative or positive age-related issue (at a time), learn about the concept, make decisions based on outcomes associated with the issue, and reflect on the experience. There is an equal amount of positively and negatively valenced scenarios that the students complete during the simulation. The simulation tool includes a variety of topics, such as ageism, physical impairments (e.g., vision/hearing), and quality of relationships. The instructional content of the scenarios is constructed around course concepts covered in the Adulthood & Aging course (offered by the Psychology Department at our institution), Palmore's revised Facts on Aging Quiz (FAQ1; Palmore, 1998), and aging topics found in established, role-playing teaching activities. Similar to other experiential tools, ERAS has a "reflective" component in which students benefit from thinking about what they experienced and relate it to the material covered in the educational component of the simulation (Patrick, Romero, Iasillo, & Dwy, 2017).

We also feel that this tool is beneficial for instructors who hope to engage their students in a larger discussion about considering careers in the fields of gerontology and geriatrics. Students who exhibit less aging anxiety and more positive attitudes toward aging individuals may be more inclined to look for professional job opportunities that aim to help the elderly (Brinker, Roberts & Radnidge,2014). With the increasing number of individuals joining the ranks of the elderly, society will have a growing need for psychologists and medical personnel interested in working with older adults.

THE DESIGN TEAM

This project was the effort of a multi-disciplinary academic team. The design and development team for this simulation included: an instructional designer, an instructional design faculty member, and a psychology faculty member. The faculty members served as the co-project managers. All members of the team worked in the same higher education institution.

Project Managers

Instructional Design Project Manager

The instructional design faculty member served as a co-project manager. She provided her expertise on the instructional design of effective, efficient, and engaging learning experiences. In this case, her expertise focused on simulation design and development. She also assisted with the design and development of the simulation scenarios and the web portal. Last, the instructional design faculty reviewed the animations, recorded audio, and helped conduct the task analysis.

Psychology Project Manager

The psychology faculty member served as a co-project manager. She provided her expertise on the developmental processes associated with aging. She also provided her knowledge about students' perceptions of the elderly and the role of perspective-taking in promoting empathy/positive attitudes toward others. The psychology faculty member assisted with the development of the knowledge components, design of the scenarios, completion of the task analysis, and overall review process of the animations.

Instructional Designer

The instructional designer was a senior, graduate-level instructional design student. She developed the simulation scenarios. This included recording and editing the audio, animating the characters, developing the scenarios, and rendering the animations.

DESIGN PROCESS

Description of the Learners

The intended users were upper-level undergraduate students in the Development II: Adulthood & Aging course. A formal learner analysis was not conducted, instead we focused on the learners that would be students in the previously mentioned course, which is taught by the Psychology Project manager.

The Psychology Project Manager suggested that the simulation could be implemented during the first weeks of the course before the students participate in on-site service-learning activities.

These learners would be 18 years or older with a high school degree or GED. Given the course level, the learners would be motivated to take the course to meet degree completion requirements. Yet, they may be uncomfortable with the service-learning component of the course, which involves interacting with elderly individuals. This uncertainty would most likely be based on misconceptions about the elderly, which in turn prevents the learners from fully understanding and connecting with aging individuals.

Task Analysis

An important step in the design of the simulation was the investigation of the content that would be addressed in ERAS. To determine the content, the project managers conducted a task analysis. This process was performed with help from two students (a psychology student and an instructional design graduate student) who were completing either an Honors Tutorial or Independent Study course supervised by the project managers.

To start the task analysis process, both project managers (with help of students) talked and decided that it would be important to start by looking at the existing literature. With this in mind, we conducted an extensive review of the literature from the psychology and instructional design perspectives. The review of the literature yielded great resources that helped the project managers identify relevant content that the simulation should address.

The literature reviews were organized in two formats. The psychology student organized the literature in an annotated bibliography. This student also provided a supplemental worksheet that included the citations of specific peer-reviewed publications, the aging related issue(s) addressed in the publications, and the measure/instructional strategies used to assess behavior or knowledge (as specified in the publications). An instructional design graduate student organized the instructional design literature in an annotated bibliography, which served to identify peer reviewed literature related to simulations and games addressing aging.

Both sets of literatures and summaries were read and discussed by the project managers. The findings included innovative teaching tools that have been used in the past to provide an understanding of the aging process. After discussing the existing literature and our goals for the simulation, we identified the following topics to address in ERAS:

- Aging related issues to address in the simulation
- Myths and misconceptions that the simulation should address
- General knowledge about the aging process that would be beneficial to include

Theoretical Foundations

One of the goals for the design team was to balance the theoretical underpinnings of ERAS, with adequate representation of the psychology and instructional design theories. Initially, the theoretical framework was defined primarily by the psychology literature and focused on perspective-taking. However, as the project evolved, the project managers infused ERAS with key simulation design elements that helped create a role-playing learning experience.

Reaching agreement between the two project managers to best represent the ideal theoretical underpinnings was not easy. Both project managers felt strongly about their respective school of theory. A compromise was reached between the project managers on the key elements that were best for the design and development of ERAS.

Learning Objectives

The project managers also used the previously mentioned results of the task analysis to determine the desired learning objectives for ERAS. This required significant discussion, between the project managers, on the exact sub-topics that would be addressed and the ability to portray the issue/myth/misconception with a role-playing scenario. This was a critical part of the discussion because the learning objectives helped guide the learning outcomes preferred for the learners after they interact with the entire simulation. The learning objectives for ERAS are the following:

- Engage in a perspective-taking experience by assuming the role of an elderly individual.
- Increase knowledge of changes that elderly individuals commonly experience
- After interacting with the first scenario (with character Mary), learners will be able to:
- Identify the emotional state of the elderly individual.
- Explain sensory decline in aging individuals specifically related to hearing.
- Explain the experiences of most aging individuals specifically related to social independence, cognitive decline, emotions, and financial well-being.
- Empathize through viewing the emotional expression of the elderly individual, learning about his/her situation, imagining themselves in that situation, and learning about the experiences of elderly individuals in general.

Similarly, after interacting with the second scenario (with character Rita), learners will be able to:

- Identify the emotional state of the elderly individual.
- Explain sensory decline in aging individuals specifically related to eye sight.
- Relate to aging individuals' experiences and struggles based on the learners' own life experiences and struggles.
- Explain the experiences of most elderly individuals specifically related to social independence, cognitive decline, emotions, and work and leisure activities.
- Empathize through viewing the emotional expression of the elderly individual, learning about his/her situation, imagining themselves in that situation, and learning about the experiences of elderly individuals in general.

Simulation Scenarios

After completing the task analysis and determining the learning objectives, the project managers designed the simulation scenarios. The project managers brainstormed and determined that the simulation would require students to interact with avatars in a web-based environment. Both project managers understood that role-playing simulations do not require the use of avatars. However, they felt that the presence of avatars would help provide the physical cues

FIGURE 1. Scenario Homepage [Aging Character: Mary].

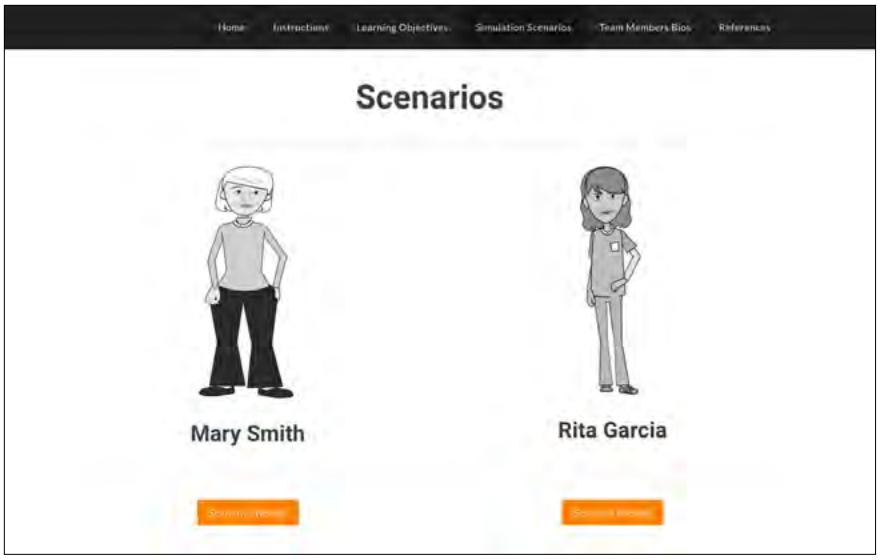

FIGURE 2. The animated characters, Mary and Rita.

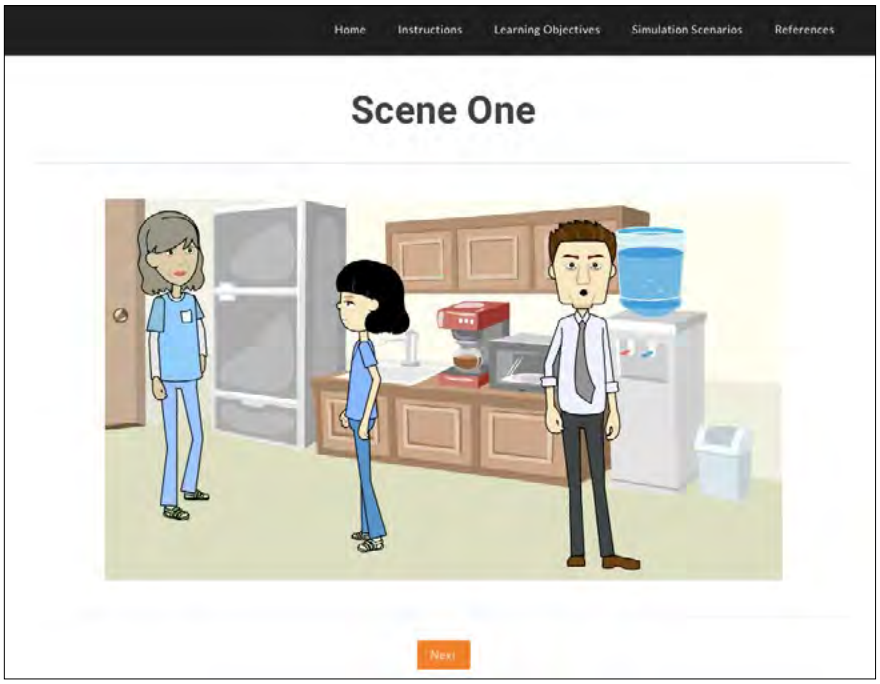

FIGURE 3. Rita with her nurse colleague.

of the aging process; therefore, afford the learners a better opportunity to role-play and experience perspective taking. The avatars would be human-like, emotionally expressive characters that communicate with the learner using voice commands (audio). The avatars would express emotion using facial movements, tones, and gestures. The learners, in turn, would make decisions based on the voice commands made by the narrator avatar and instructions embedded in the web-portal. The learners' input into the web-based simulation is through computer keystrokes to closed-ended questions.

The instructional design faculty member suggested to the other members of the team that it would be best to have a main page for each scenario in which learners would be presented with access to the objectives for the scenario, a short biography of the main characters, the context of the scenario, and access to the scenario and assessment (See Figure 1).

Learning Activities

During the design process, the project managers identified four main techniques to engage learners in perspective-taking and the knowledge acquisition process in the scenarios. These techniques included:

Role-Playing

In a session dedicated to the design of the simulation, the project managers decided that learners would take on the role of two aging characters. Initially, it was decided that three characters would be included in ERAS and that they would vary according to age, gender, and ethnicity. However, given the timeline for the project and resources available, the final version of ERAS includes only two characters (Mary and Rita). The two characters that were initially conceptualized and for whom the designers had already created a mental context (a story of who they were and what were the myths/misconceptions that they would represent) were the ones that were presented in the final version of the web-based simulation. The third character that was not included, because of monetary and time constraints, was going to be a male character.

During the design process, the project managers created brief bios for each aging character. The bios are provided to the learners as they prepare to interact with a scenario (a scenario includes four scenes related to a specific character). The project managers decided that the aging characters would have different ages because this would help represent aging individuals in different age groups (See Figure 2). In ERAS, the character named Mary is 80 years old and the character named Rita is 70 years old. Careful consideration was also given to the racial diversity of the characters. The project managers wanted the ERAS characters to represent various racial backgrounds, therefore they decided that

Rita would have a Caucasian physical appearance and Rita have a Hispanic physical appearance.

For each aging character, the scenario is based on a specific context. For Mary, the context of the scenario is an interaction with a pharmacist in her drugstore. In the case of Rita, the context of her scenario is training a new nurse in the hospital where she works.

Figure 3 shows a scene, in which the learner would be instructed to take on the role portrayed by the avatar "Rita." Rita is 67 years old and has been working as a nurse for the last 30 years. She is in the process of training a new nurse colleague.

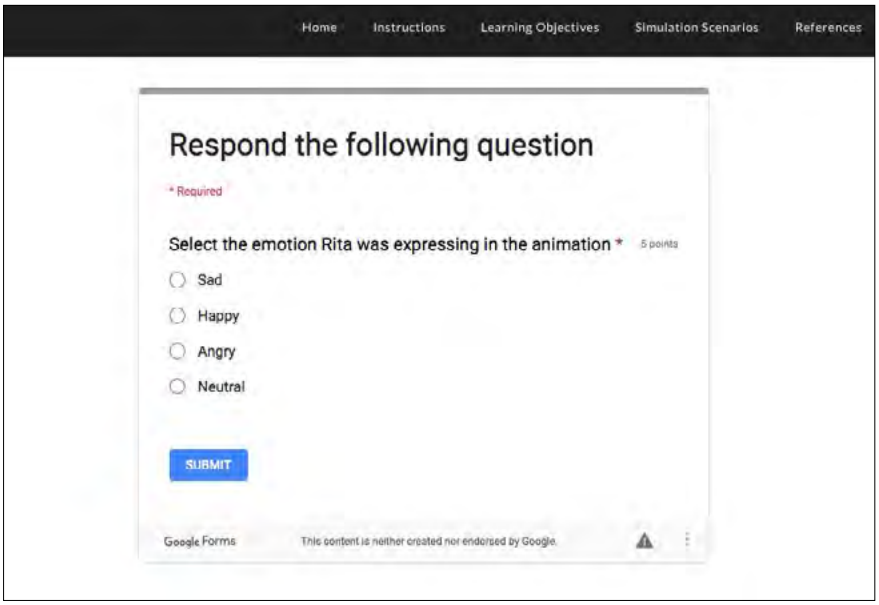

FIGURE 4. Generative strategy (decision-making activity).

Generative Strategy

In learning and education, simulations engage the participants in different types of actions and decision-making processes (Kriz, 2003; Martin, 2000; Yaman, Nerdel, & Bayrhuber, 2008). In these scenarios, the learners take on the role of an aging individual and are forced to consider and make decisions about potential outcomes of age-related issues.

The purpose of the decision-making process is not to evaluate the response of the learners; instead, the purpose is for the learners to experience and consider the aging individual's perspective. After each scene, the learner is asked to complete a generative strategy. The generative strategy, in most instances, is a decision-making activity in which the learner selects the best action for the aging character. In other instances, as seen in Figure 4 and 5, the generative strategy requests the learner to identify an emotion or feeling that the aging character could be experiencing.

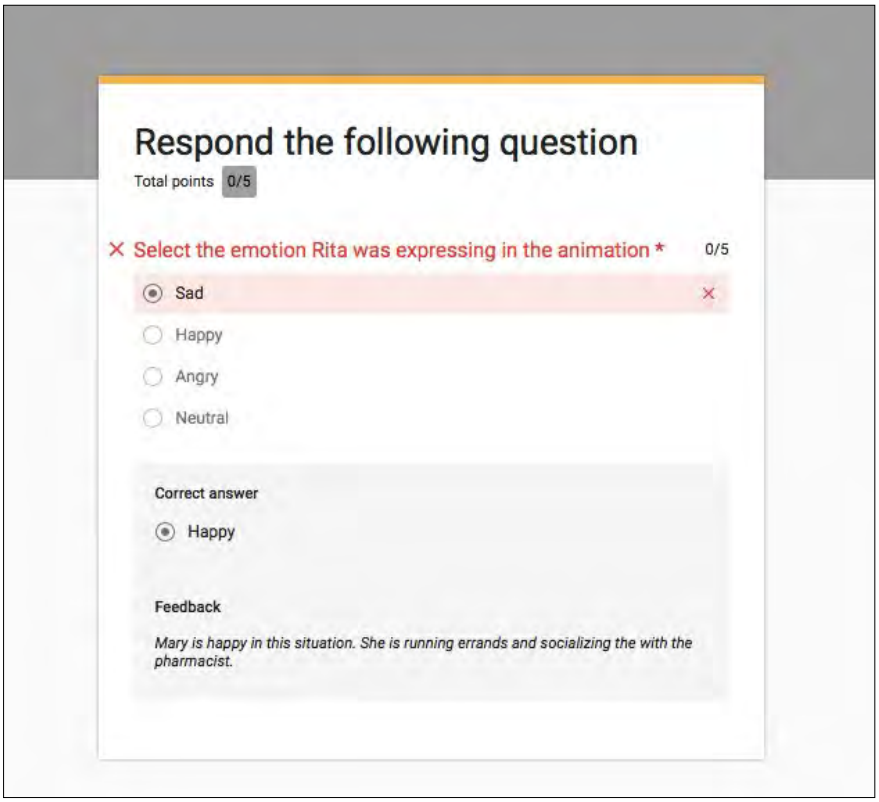

FIGURE 5. Generative strategy (feedback to participant).

Knowledge Bits

After viewing the animation and completing the generative strategy, the learners are guided to a short reflection (see Figure 6), a concluding statement by the narrator, and a "knowledge bit." The knowledge bits are one to two paragraphs of text containing peer-reviewed research related to aspects of the aging process. The knowledge bits also include in-text citations and a list of references cited in the text. The knowledge bits serve a dual purpose: educate the learners with accurate information and share resources that the learner can explore on their own after the completing the simulation.

FIGURE 6. Short reflection about Rita.

Assessment

The project managers also determined during the design process that the web-based simulation environment would include an assessment section to be completed after each scenario. The assessment section addresses the instructional material that was given to students in each of the simulation scenario. The assessment includes closed-ended questions in which students are evaluated based on the content presented in the scenario.

DEVELOPMENT PROCESS

Resources

The resources used to develop the scenario and web portal included both: software that was already available and some that was purchased just for this project. The co-project managers had to rely on existing resources because there was a specific budget that they both had agreed on to complete the project. The instructional design faculty member had previously purchased, using her faculty startup package, three software pieces (CrazyTalk®, PowToon®, and Picktochart®). In addition, to have the latest version of the software and extra artifacts, software was purchased using funds obtained through an institutional teaching innovation grant (CrazyTalk® software update, a bonus artifacts library, and a Weebly® Pro subscription). The personnel resources (project managers and instructional designers) were funded through an institutional grant.

To guide the development process, the instructional designer used the drafted design document, as suggested by the co-project managers. In addition to the design document, the team also engaged in a meeting prior to the development stage to discuss resources, procedures, development timeline, and expected outcomes. Up to this point, most of the work was conducted by the co-project managers. The instructional designer, then took over the majority of the work and updated the co-project managers regularly. During this phase of the project, the co-project managers offered some suggestions to improve aspects of the simulation development. For example, there was concern about the learners' ability to fully identify with the experience of the elderly avatar. The psychology co-project manager suggested that the simulation require the learners to focus the majority of their attention on the elderly avatar's actions and emotional expressions, instead of on peripheral character movement or scenery. However, the instructional design team members wanted to make sure the learners were immersed in all aspects of the scene to make it a realistic experience. The team discussed how suggested changes to the scenarios would be handled, making sure to consider any limitations of the software and time constraints. The instructional designer shared her perspective on the time that she would follow and specific periods in which review would be beneficial. The timeline and review period worked well for the co-project managers, so the team agreed to move forward with the development. In total, the development process occurred during a seven-month period.

Scenarios

The development process started with the creation of the scenarios. Each scenario included four scenes with background scenery, audio recording for the voice of the characters, and animated avatars. The instructional designer developed the scenes. The detailed design document provided to the instructional designer included suggestions and ideas for the background scenery, scripts for each of the characters, and descriptions of the avatars. The design document was initially drafted by the psychology faculty member and revised/edited by the instructional design faculty member.

Scenery

The background scenery served to represent the context of the scenario. Each background scene was created using a combination of pre-crafted artifacts available through the development software (CrazyTalk®) and newly created artifacts. The scenery included backgrounds and items that

the characters interacted with during the animations. The instructional designer spent time crafting the scenery to ensure a good level of fidelity was represented for each scene.

The instructional designer used the design document and image examples found on the Internet to represent the context of each scenario (a pharmacy and a hospital). The designers also created, using the software, new artifacts that would enhance the representations.

One of the main factors that the instructional designer kept in mind while developing the scenery was the angle at which the scene would be rendered (See Figure 7). In the development software, the view of the user represents a specific camera angle of the 3D visualization. Only one specific angle can be used to render the animation into a video (MP4 file format).

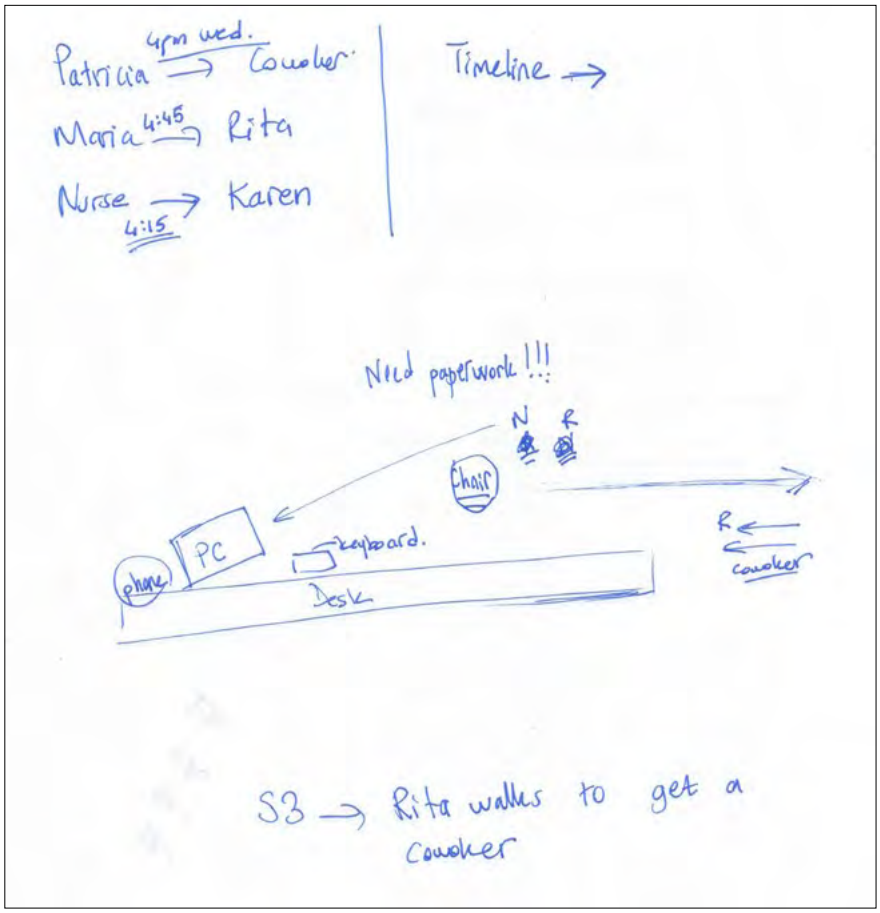

FIGURE 7. Sketch by the Instructional Designer.

Characters [Audio]

To start the development of the animated characters, the instructional designer recorded the audio scripts (See Figure 8). The recorded audio scripts served as conversations between the characters. Initially, the audio for the first scenario was recorded with a professional microphone in a soundproof studio (at the makerspace of the local public library). However, the audio recordings that followed (with revisions of the audio script of the first scenario and the script of the second scenario) were recorded using a Snowball Ice Microphone by Blue Microphones in a quiet room on campus. The reason for the change of audio recording settings was primarily based on the logistics of organizing campus transportation for those who volunteered to record their voices. Individuals, acquaintances, or friends who worked or studied at the higher education institution (where the simulation was designed and developed) provided the voice recordings. The recorded audio for both scenarios was processed and finessed by the instructional designer using Audacity. After processing the audio in Audacity®, the recordings were uploaded to the development software (CrazyTalk®) for further use after the animated characters were developed.

Characters [Animations]

Once the audio was recorded, the instructional designer started to develop the characters. This included developing their body shapes and height, movement, facial expressions, clothing, and hair. The characters were designed using existing avatar templates available in CrazyTalk®. The instructional designer was given the freedom to decide the specific physical appearance of the character (hair style, and clothes), as long as each character seemed representative of the already specific gender and age characteristics that the project managers had specified during the design process. After developing the avatars with unique characteristics, the instructional designers proceeded to embed the audio into the CrazyTalk® interface. The results were human-like characters with movements and the ability to portray emotional expression while complementing and conveying the content of the script.

The development of the characters was first completed for all scenes in the first scenario (Mary). Then, using the design document and feedback from the faculty members, the instructional designer completed the development of all the characters in the second scenario (Rita).

Web Portal

The project managers decided to use a web-portal to host ERAS because it allowed for easy access from any computer with a web-browser and an Internet connection. The

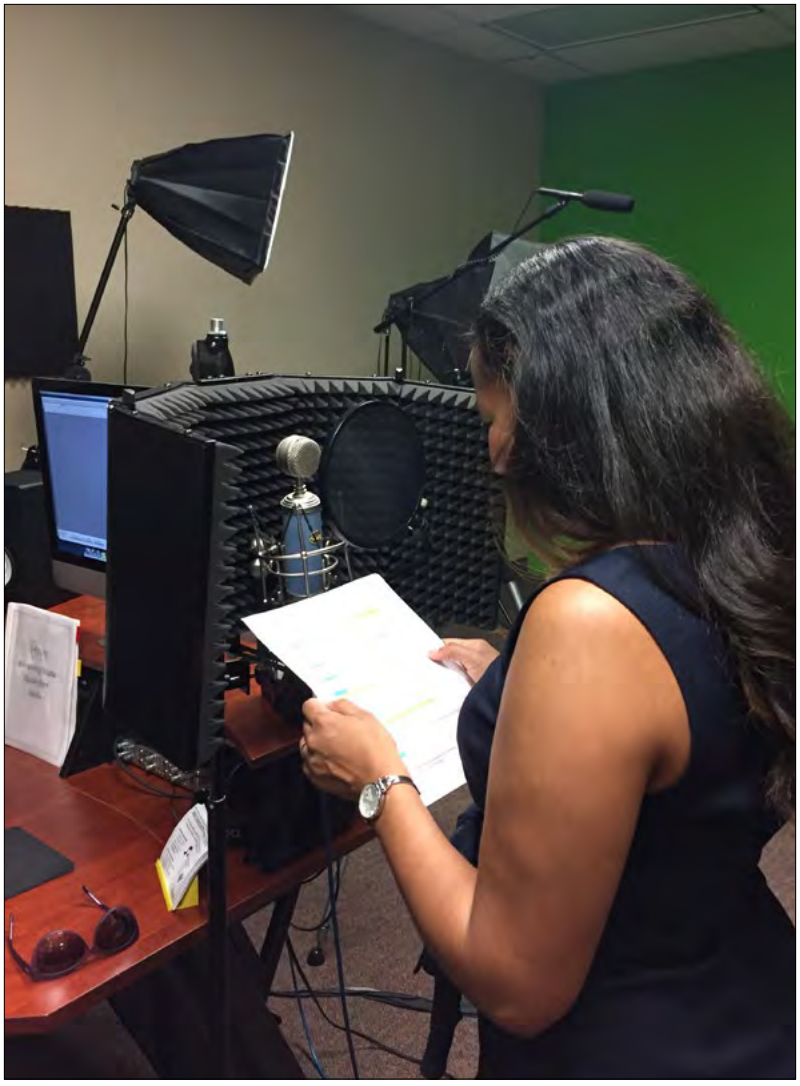

FIGURE 8. Instructional Designer recording the audio script in the soundproof studio.

web-portal was designed and developed by the instructional design faculty member. The portal is hosted in Weebly®. It is a combination of webpages interconnected by a main drop-down menu. The main options in the drop-down menu include: learning objectives, instructions, simulation scenarios, references, and team members' bios. As part of the web portal, the instructional design faculty member included interactive infographics (created with Picktochart®), text representations (created using PowToon®), and generative strategies (created using Google® Form).

The development of the web portal occurred after all elements of the scenarios were completed. In Weebly, the instructional design faculty member organized the text representations, interactive infographics, images, buttons, links, and all scenario elements. The development process occurred during a two-month period.

REVIEW PROCESS

The review process started during the design portion of the project. Each scenario design document was reviewed twice. First, the psychology faculty member would draft the design document and share it with the instructional design faculty member for feedback and edits. After both project managers reviewed the design document of each scenario, it was then given to the instructional designer for development. To facilitate the review of the design document, all members of the team had access to a shared master folder with sub-folders in Dropbox.

During the development process, all members of the team reviewed the quality of the animated scenes. First, the instructional designer would develop the scenes (in each scenario). The designer would ensure all elements mentioned in the design document were included in the scenes. Afterwards, the designer would set a face-to-face meeting (via email) with both project managers to show and explain the output. Each project manager would then either a) give immediate feedback or b) ask for additional time to review the scenes. When additional time was asked to review the scenes, the files were shared via a USB drive.

The review process during the design and development process was constant. The design documents and the animations were reviewed

at various times throughout the duration of the project. This meant making changes to initial scenario ideas as well as making edits to the animations (and characters).

CHALLENGES AND SUCCESSES

Technology Resources

A challenge that the team had to overcome during the project included the limitations of the software used for the development of the simulated animations and the generative strategies. During the initial meetings of the project, the psychology and instructional design faculty members discussed some of the representations in the scenarios and activities that would signify the generative strategies. All the ideas were recorded for further exploration once final decisions were made on the specific software that would be used during the development.

Based on the resources available, some of these initial ideas had to be re-conceptualized. Initially the animations were to have interactive components such as "click on hotspots," that would allow the learner to engage directly with the animation. However, the software used for the animations does not allow for these types of interactions. Instead, activities that would occur once the learner clicked on the hotspot had to be developed in a different manner using alternative resources (Google Forms).

Combining several different software tools into one single outcome (ERAS) also presented a challenge. ERAS combines a web-hosting platform (Weebly) with video animations (MP4 video files), generative strategies (primarily embedded and via Google Form), interactive infographics (Picktochart), and images. One of the current issues ERAS experiences is the additional web-browser tabs that are open when a learner starts navigating the interactive links in the main webpage for each character. As the learners progress through the different scenario elements, they are prompted to click on the "close" button to eliminate extra tabs in the web browser.

Fidelity

An aspect that was successfully accomplished in ERAS was the level of fidelity used to represent the characters (the expression of emotion, movement, and other animations). Based on prior research (Enilda Romero-Hall, 2015a, 2015b; Enilda Romero-Hall, Watson, & Papelis, 2014; E. Romero-Hall, Watson, Adcock, Bliss, & Adams Tufts, 2016), the design team wanted to effectively develop the avatars and their ability to represent life-like conversational characters. To accomplish this level of fidelity, the instructional designer worked through several revisions of all the animations based on feedback from the project managers.

This project was the first time the instructional designer worked with the CrazyTalk software. Therefore, the designer spent a significant amount of time learning the software and understanding its limitations. The development of the first scenario (Mary) served as a trial to practice the newly learned software. This, in turn, led to several conversations with the project managers and revision cycles for the first scenario. When the development of the second scenario (Rita) started, the instructional designer had become acquainted with the software. As a result, the second scenario was developed quicker and with fewer revisions. The outcome resulted in scenarios with suitable fidelity levels that were satisfactory for this specific group of learners and the desired learning outcomes.

Reviews and Feedback

Another challenge that the design team overcame during the project was the level of reviews and feedback given to the instructional designer during the development process. Initially the team was scheduled to meet every two weeks. Yet, due to schedule conflicts and work on other projects it was not possible to maintain the schedule of the meetings. The team switched to primarily communicating via email.

Switching the communication channel from face-to-face meetings to email exchanges made it difficult for the team to confer about the development process for scenario one and make adjustments to the animations prior to rendering (into videos). To expedite the review process with the second scenario, regular meetings were re-established and feedback was given as each individual scene was being developed.

CONCLUSION

The aim of this paper is to describe the design and development process of ERAS. The paper discusses the critical design elements and decisions made by the team. ERAS aims to promote empathy and positive attitudes toward the elderly. The link to the web-based simulation was included as a resource via the learning management systems that the students use to access materials for the course.

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