Usability Review

Abstract

With the increased use of computers at most organizations, cyber attacks by bad actors have taken aim at employees. Seen as easy access points to infiltrate an organization, these targets, if not trained properly, can make it easier for bad actors to gain access. Now it has become customary for organizations to train their employees on computer safety and security. After a needs assessment was conducted at a small software company, it was determined that an elearning module to address this would be the best solution.

A usability review was conducted consisting 3 adult females, one is 52 and two are 53. One female works full-time in the healthcare profession (respondent 1), one female works full-time in law enforcement (respondent 2) and one female works full-time as a school teacher (respondent 3). Each respondent has intermediate to advanced computer skills and have used a similar elearning modules in the past for their jobs.

The usability review was conducted via Zoom meeting that was recorded for record keeping purposes. Each respondent was told to bring up the elearning training on their screen and begin to take the course. Notes were recorded on their user activity. When each respondent got to the Learning Modules slide, they were asked to click on module 3, module 2, module 4 and module 1, in that order and complete the activities. Notes were recorded on user activity for each module. At the end, respondents were asked to give their reactions to the following questions:

1. What did you like the most? Why?
2. What did you like the least? Why?
3. What was the most confusing? Why?

Usability Review Summary

Below are the scenes that were reviewed with corresponding notes, screen shots, and remediations for each issue. The following screen shots contain numbering for identification purposes, however these numbers were not shown to respondents as to not influence their feedback.

Introduction (Scene 1) – Welcome slide, UI tutorial, learning objectives, learning modules

It is important to note, respondents were not allowed to advance from slide 1 to slide 2. The reasoning is that the tutorial on how to use the UI is on slide 2.

All respondents were able to view the video tutorial on slide 2, advance appropriately, and did not have any issues.

Each respondent was instructed to stop navigating when they reached slide 4 (learning modules) in the scene.

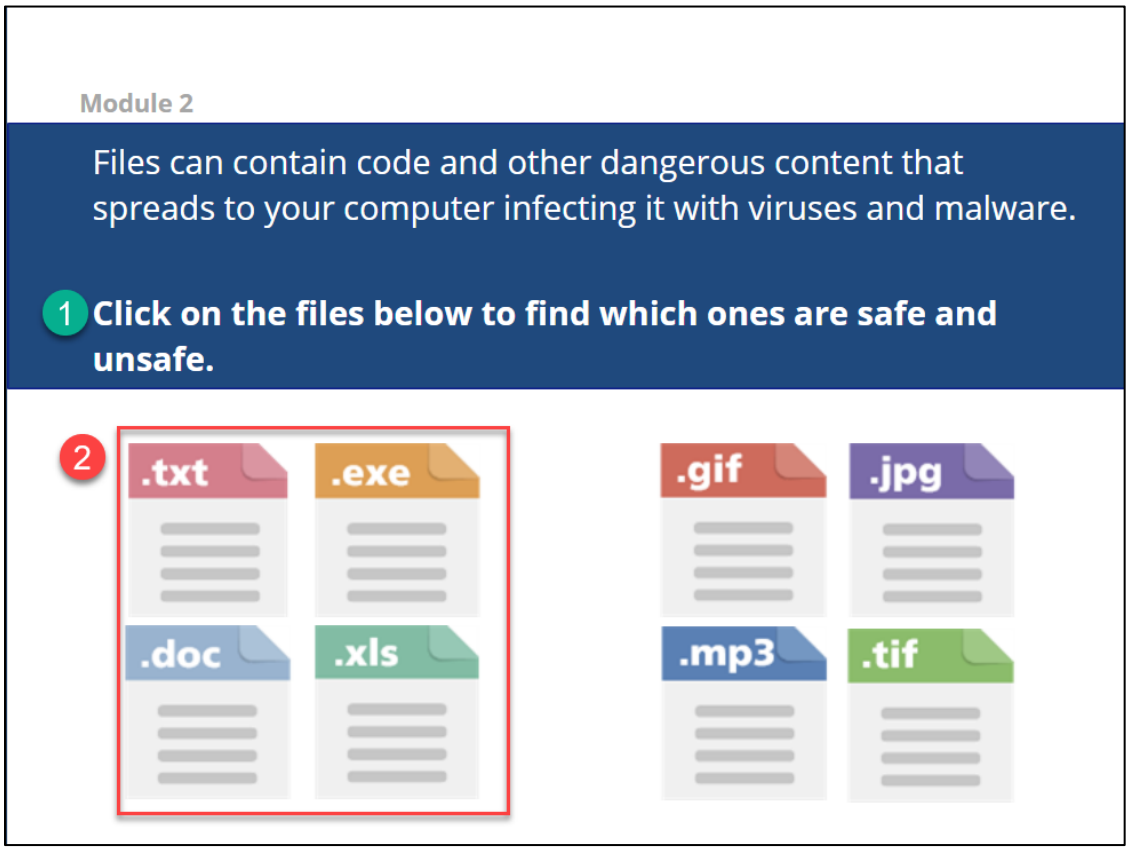
No feedback was offered for this scene.

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Module Three (Scene 2) – Drag and Drop Activity

All three respondents had an issue with the review slide (Figure 1). The review slide contains two interactive groups, safe and unsafe files. When a group is selected, the user is presented with a summary slide (Figure 1.1). Two of the respondents did not read the instructions. One respondent did read the instructions, however made the same mistake of clicking on each file as opposed to the group of files.

Figure 1

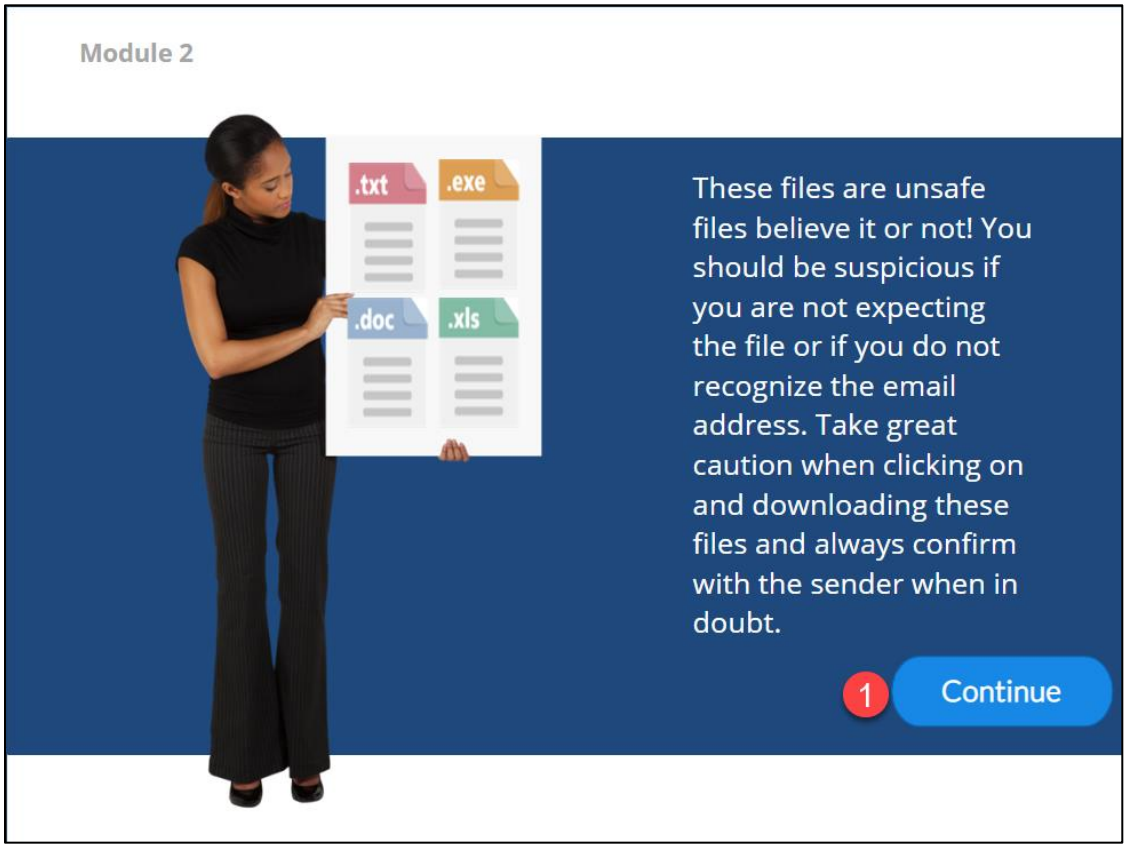


1. Rewrite the instructions for clarity, instructing the user to click on each group vs. individual files.
2. Redesign graphics so they look like a group instead of individuals files.

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When respondents click on a group of files in Figure 1, they are brought to the corresponding slide that reviews why the group of files is safe or unsafe (Figure 1.1). Please note, a slide very similar exists for the safe files, but is not included. After reviewing the slide, all users clicked the "Continue" button. This brings the respondents back to the slide in Figure 1 however, it created a loop for all three respondents, not knowing when to continue to the next scene. Each user needed to be instructed that once they viewed both the safe and unsafe summary slides, they could advance to the next slide.

Figure 1.1

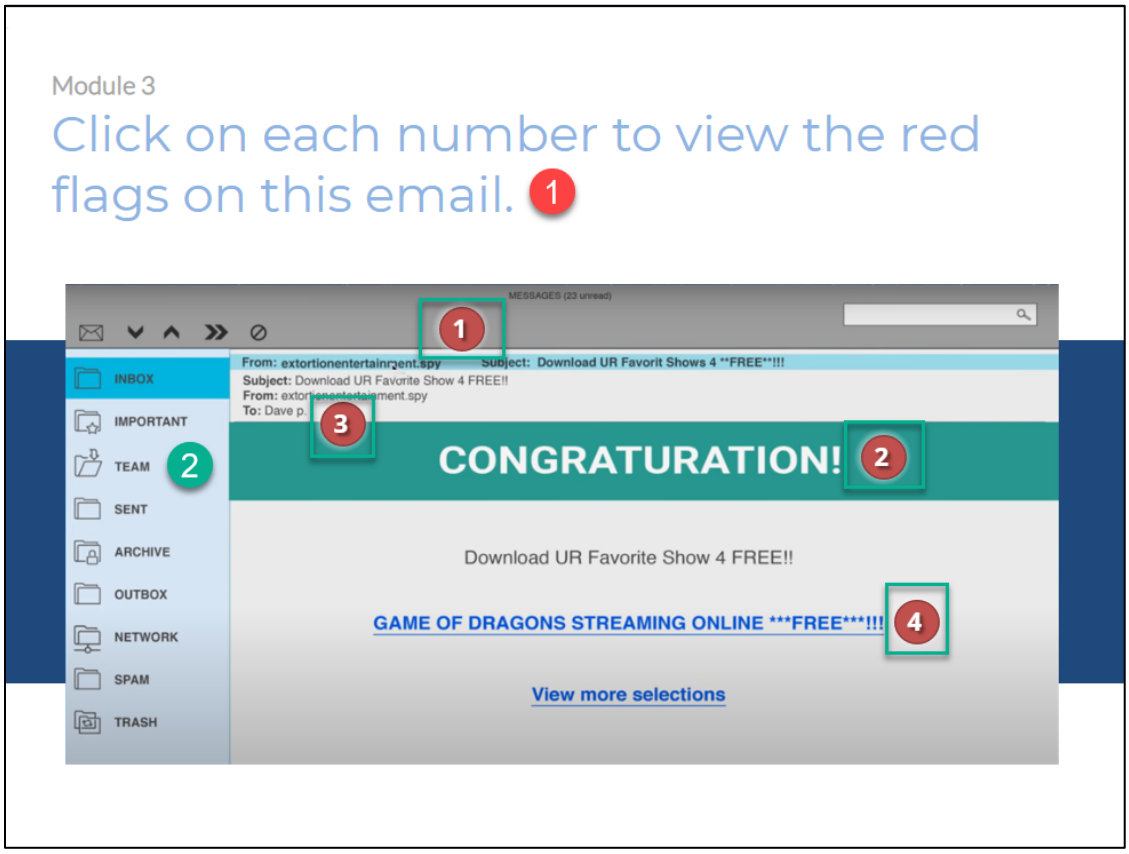


1 Add a state to the "Continue" button that if visited once, sends the user back to the learning modules slide if clicked a second time. This will allow them to exit the activity and continue the training.

Module Two (Scene 3) – Hotspots interaction, video scenario, knowledge check

All three users had an issue with the hotspot slide, Figure 2. While they knew to click each hotspot and read its corresponding narrative, all were not certain as to when to advance the slide once all the hotspots were selected. Each found their way eventually, however, all were a little hesitant. All three users did not have an issue with the remainder of the module.

Figure 2



1. Include instructions to advance to next slide once all hotspots are selected.
2. Add a state to dim each hotspot once selected letting the user know they have already viewed and can move on.

Module Four (Scene 5) – Summary, knowledge question, learner feedback, ending slide

All three respondents were able to successfully interact with the summary slide, complete the knowledge questions, give learner feedback, and view the ending slide. However, it could be beneficial to add a state to each interaction in Figure 3, notifying the learner they have completed the activity and can advance to the next slide.

Figure 3



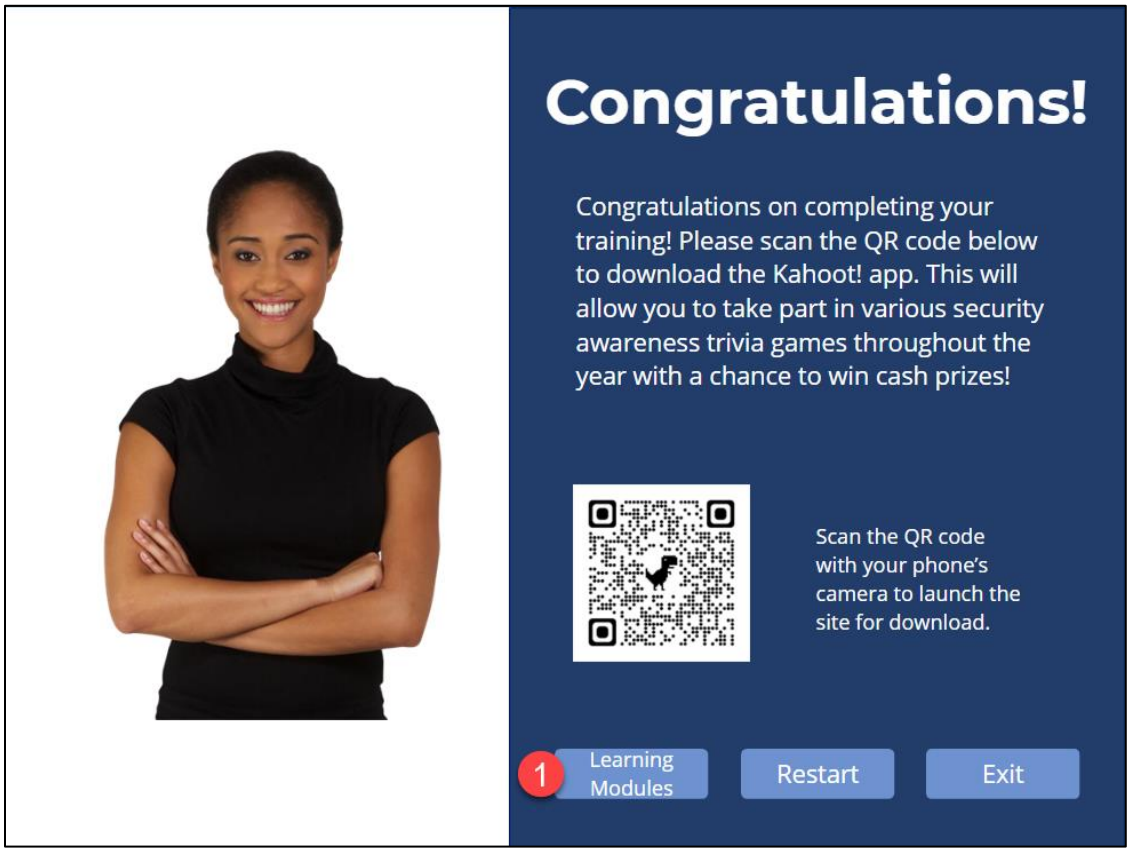
1 Add a state to each interaction area that dims once the user has selected. This will give them an additional cue that the interaction has been completed and that they can move on.

While all respondents were able to advance to the ending slide, Figure 3.1, they were unsure where to go next. This is because the modules were completed out of order. This was intentional to give the user control to move directly to the knowledge assessment without reviewing Modules 1-3. However, the intention of the full version is to allow the user to complete the training if they receive a passing score on the knowledge assessment, without having to review Modules 1-3. Since this functionality was not built for this prototype, additional instruction needed to be given to the respondents.

reviewing any of the modules giving them more user control. If the user does not pass the knowledge assessment, they will be required to complete all three modules before they can retake the knowledge assessment.

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Figure 3.1



1 Provide clear instructions when the user does not pass the knowledge assessment, that they are required to review Modules 1-3 before completingand retake the knowledge assessment to complete the training.

Module One (Scene 2) – Object interaction, scenario knowledge question

All users were able to easily navigate through the object interaction and answer the scenario-based knowledge check. To maintain consistency, it was observed that diming objects that have been selected give the users a visual cue that the interaction is complete and they can move on. See Figure 4.

Figure 4



1 To maintain interface consistency, dim interactive objects once selected.

Usability Review Summary Questions

Each respondent was asked the following questions at the end of the usability review:

1. What did you like the most? Why?
2. What did you like the least? Why?
3. What was the most confusing? Why?

Respondent one was the most impatient with technology. She stated that she didn't like when it didn't work and is not a fan of online learning in general. She mentioned that she wants to get to the end and skip through sections if possible. She thought the interface was visually appealing but the drag and drop activity was in the most need of revision. I asked if games or scoring would help to keep her more engaged and she answered, possibly if she was younger.

Respondent two thought the interface was visually appealing and consistent throughout. She mentioned that she likes feedback on all questions and that this feedback should provide why answers were correct or incorrect. She also mentioned that she likes the opportunity to go back

and review information if she gets an answer incorrect. She too found the drag and drop activity the most confusing.

Respondent three thought the visuals were engaging, auditory components were paced well, and the elearning module was very user friendly. She liked the choice of various exercise with different media components for interactivity. She did mention that more instruction was necessary for the drag and drop exercise.

Conclusion

For the most part, the training is well designed with a few exercises that need additional programming to avoid confusion for the user. Clarity on instructions, object hotspot interactivity, and learner feedback on knowledge checks would be an improvement. To give the user additional control, further programming is needed to Module 4 (scene 5) allowing the user to take the final assessment without having to complete the modules if a passing score is achieved. If the user does not achieve a passing score, the user should be directed to complete all learning modules and retake the assessment. This is currently not in the functionality, and would have to be designed into the elearning.