Serious Gaming Usability Testing

Presented by: Renn Scott
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Setting the Stage – What is UX?

SUMMARY: User Experience (UX) encompasses all aspects of the end-user's interaction with the company, its services, and its products.

- Meet the exact needs of the customer - no fuss or bother.
- Simple and elegant - a joy to own and to use.

True user experience goes far beyond giving customers what they say they want, or providing checklist features.

Definition by JAKOB NIELSEN and DON NORMAN
REF: http://www.nngroup.com/articles/definition-user-experience/
What is Usability Testing?

Usability testing refers to evaluating a product or service by testing it with representative users.

- During a test participants will try to complete typical tasks while observers watch, listen and takes notes.
- The goal is to identify any usability problems, collect qualitative and/or quantitative data to determine the satisfaction with the product.

- Typical steps:
  1. Create a test plan
  2. Recruit participants
  3. Analyze and report findings
Why test?

- Understand your consumer, their expectations and current experience
- Identify what’s good, what should be kept and emphasized in your design
- Identify where users are confused, where they have problems and loose confidence
- Learn if users are able to complete specified tasks successfully and Identify how long it takes to complete specified tasks
- Find out how participants feel about your tool, application
- Identify changes required to improve user performance and satisfaction

Benefits of testing:
Table of Contents

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  – Game 2 Expectations and Experience
  – Client Chart, Decision Points, Feedback, Score, Menu Button
  – Summary Report
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The goal of the study was to understand the experience of using the resource (modules and game) – initial impressions, ease of use and if anything is confusing.

Each test session was 1 on 1, 60 MIN each

1. **Introduction** - 5 MIN
   - Review email with tasks from instructor
2. **Initial Impressions & Understanding - Explore Tool (Proj 2)** - 5 MIN
3. **Review of Modules (Proj 2)** - 5 MIN
4. **Review of Game 2 (Proj 2)** - 30 MIN
5. **Debriefing & Questionnaire (Proj 2)** - 5 MIN
6. **Game 2 Experience Questionnaire**
7. **Review of Game 1 (test on Wires, “Options” screen only)** - 5 MIN
8. **Wrap Up** - 2 MIN
7 Test Participants

A mix of student and practicing nurses with a range of computer and nursing skills.

- One person without nursing experience (an instructional designer)
- One male nurse
- 3 participants had glasses, and one with contact lenses

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<th>Age range in years</th>
<th>Nursing experience in years</th>
<th>How often you play video games</th>
<th>English is my second lang</th>
<th>Gender</th>
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<td>over 5</td>
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<td>Female</td>
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<td>No</td>
<td>Female</td>
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<tr>
<td>Participant</td>
<td>26-30</td>
<td>over 5</td>
<td>Often (I love playing online games if I am free)</td>
<td>Yes</td>
<td>Male</td>
</tr>
<tr>
<td>Participant</td>
<td>30-40</td>
<td>0-5</td>
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</table>
KEY FINDINGS

Initial expectations are set by the term ‘Game’ - Game means fun!
All participants enjoyed the game, they were engaged throughout the experience.
No major obstacles were detected throughout experience, all completed game.

Majority of participants took the time to study options and to read the feedback.
7 out of 7 people liked Feedback screen and didn’t see a value in turning it off.
Feedback screen was not perceived as interruption to the simulation.
It evoked an emotional response in majority of participants. Some laughed, some argued with the Feedback.
Users initially had difficulty understanding why they had to answer questions again.

Majority of users didn’t care about score, but they still said it’s needed for this type of game. That’s what made it a game.
All but one user preferred the combined Congrats plus Summary Screen.

During Game Play the options on the top of the view aren’t noticed, and if they are, they’re not clicked on.
User expectation is that the modules content teaches them strategies and approaches so they can answer game questions.
Congratulations, you've completed the game!

You have established trust with Irina and she now understands her options and resources available.

Your Final Score is 1200 out of 1600.

If you want to improve your score you can start from the beginning and play the game again. Just remember that the results from the current version of the game are not retained.

To see where you’ve picked incorrect responses, read feedback and access suggested resources, check out the Summary Report or navigate through Decision Points.

Make sure you save the report for this game of Serious Gaming. The game score will be reset each time.

Review Summary Report

Let us know how you liked the game

We appreciate your feedback in order to improve your experience.

Complete this anonymous survey.
Overall experience

The tool (the modules and the game) is a resource that test participants want to continue to use after having a chance to experience it.

The video, movie experience is high value

- Participants comment the video is like a real movie, it has high production quality which is useful and fun.
  - P5 “Love the first person view! It was good, acting was good.”

Enables real world practice

- The video simulations allow learners to imagine themselves in situations in which they find themselves immediately emphasizing with a client.
  - P6 “Overall game would be helpful. As a nurse you will be able to see in this scenario how you would react in this scenario. Learn how you can interact with a client and the other people in the house.”
Overall experience

More effective way to learn

- Participants feel they will remember skills presented better, they are more engaged when interacting with a visual presentation vs. reading a scenario.
  - **P4** “Good tool, having done a lot of courses at home anything you can do to change up the learning is good. Another venue, another way, everyone learns differently, watching the video allows you to transport into that situation.”

An enjoyable experience

- Participants liked playing the game, though the content is serious they describe the game as fun.
  - **P3** interesting and fun, new game. For that kind of game I didn’t expect, I didn’t play. I really learn a lot, feel like you’re in the game.
  - **P7** I think it’s an excellent tool, I think the video, the graphics, the actors did a really good job portraying the story line, the suspense.
Participants state the Game is...

- Interactive
- Fun
- Informative
- Engaging
- Interesting
- Valuable
- Usefll
- Realistic
Participants stated their experience playing the game was...

- Enjoyable
- Useful
- Engaging
- Relevant
- Motivational
- Difficult
Game Experience Questionnaire Participants choose the number on the scale to best describe their experience

**ENJOYMENT** – *Overall, using the tool is…* (6 out of 7 choose no. 1)

Enjoyable 1 2 3 4 5 6 7 Not Enjoyable

**MOTIVATION** – *When using the tool, I felt…* (2 choose no. 1, 6 choose no. 2)

Enthusiastic 1 2 3 4 5 6 7 Unenthusiastic

**DIFFICULTY** – *Using the simulation game was…* (3 said game was no. 1 easy, 2 chose no. 2, 2 no. 3)

Easy 1 2 3 4 5 6 7 Difficult

**ENGAGEMENT** – *The way the game presents information is…* (5 choose no. 1, 2 choose no. 2)

Interesting 1 2 3 4 5 6 7 Boring

**RELEVANCE/USEFULNESS** – *The content available via the game is…* (6 out of 7 choose no. 1)

Useful 1 2 3 4 5 6 7 Useless
Favourite thing about the tool incl. game

Videos and being the person in the video is the favourite thing after experiencing the modules and game.

**VIDEO**
- **P2** – Videos, they made it more real and more interactive.
- **P3** – The video. I would like some diversity – a male voice. Allow users to choose the gender, if it was a male voice I would feel more like I’m the one.
- **P4** – Being the person in the video
- **P7** – The suspense

**FEEDBACK**
- **P1** – I like that it stopped and I could choose an answer and that it would tell me if it was right or wrong. [I understood] what would happen if I made the choice?
- **P6** – The feedback [in the options right or wrong]
Least favourite thing the tool incl. game

Clarity of rules and how the game works causes confusion and loss of confidence in participants.

SCORE, ANSWER OPTIONS and RELEVANCE OF CONTENT

- **P1** – Trying to figure out the scoring when I was prompting to.
- **P2** – Some of the feedback, if you choose the wrong answer, it wasn’t clear.
- **P6** – Options for questions [answers to choose from can be seen as ambiguous].

TEXT and READABILITY

- **P3** – The text on the video, font and choices are hard to read.
  [blue text]
One thing I’d change

IMPROVEMENTS TO DECISION POINTS SCREEN

- **P2** – I would put a link where the answers are wrong [so people they could click on them]. Maybe additional reading, additional text initially with options for further reading for the student to investigate if they wanted them.
- **P4** – In those boxes, give me the option to click on them, give me the blurb as to why it’s not the right answer.

THE ANSWER OPTIONS ON DECISION POINT SCREEN

- **P6** – One thing I would change – they have to work on the options (content) for the questions.

TELL ME NEXT STEPS

- **P1** – I don’t know if there is more games… It would be nice to see what it would be like to do a follow-up [with client]…

MAKE GAME FULL SCREEN BY DEFAULT

- **P3** – Start in full screen for game, video felt cut off. Full screen mode, it should be obvious how to turn it on. [comment from a gamer]
Additional things to note

- 2 out of 7 users stated they felt dizzy watching the video in the game at the beginning of the scenario.
- 2 out of 7 users were confused as to who Joseph was when he appeared in the scenario, they thought he was Sasha.
- 7 out of 7 really liked the Feedback and wouldn’t want to turn it off. When probed on how to turn off feedback all stated from the instructions it wasn’t clear how to do this.
- 4 out of 7 participants; over ½ of the participants clicked on ‘Read More…’ first. Following this ‘About this Study’, Clicking on Module 1 were ‘What I’d click on first…’ choices. One participant, a gamer wanted to click on ‘Game’ first.
- 6 out of 7 participants, all but one user preferred the Combined Summary Report combined. The participant that didn’t like it simply said she liked things separate.

ISSUE BASED data:

- 7 out of 7 users had some confusion when reading the audience language.
- 7 out of 7 users had to be prompted to click on the options (Client’s Chart, Decision Point, Menu) on the top of the game page. If users noticed Options during Game Play they said they weren’t inclined to click on them, they were too engaged in the game.
- 7 out of 7 users were confused by the Menu button icon and were unsure what they’d see when they clicked on the icon.
- 7 out of 7 users could not understand how Score was calculated after being prompted to read the instructions.
Serious Gaming
Usability Test sessions
Instructions:

Imagine you received an email from your instructor with this assignment:

Email Copy:

Hi there,

Using this link http://...., I'd like you to explore these learning materials and complete the following tasks:
Review the materials. (Homepage)
Learn Foundational Therapeutic Communication and Mental Health Assessment Skills and list a few “Risk Factors for Suicide”. (Module 3)
Test your knowledge of the Mental Health Assessment during a home visit (Game 2)
Share with me the results of this assessment (Summary screen)

Thanks,

--
Laura Lee, RN, PhD
Associate Professor
Daphne Cockwell School of Nursing, Ryerson University
Study Home page initial impressions

PURPOSE:
• Users want to understand the purpose of the modules and the game. They want to understand the incentive.
  ➢ PH 5 - Confused by Read More link. Didn't expect to be redirected to About page. Wants to know why she should do these. What’s the incentive?
• There was some confusion about who the resource is for (audience), the language isn’t clear. Users went to the About page to find out more.

NAVIGATION:
• Even though some users commented on not knowing where to start, everyone successfully navigated to the Modules and the Game.
• Users read the modules top to bottom and didn’t spot the game title and link as it blends with the Module links.
• To go back participants typically click on ‘back’ in the browser.

LEVEL OF INNOVATION:
• Knowing that what they’ll be testing is a ‘new’ learning module, one that includes a game creates the expectation of ‘new and innovative’.
Home page - What would you click on first?

Over ½ of the participants clicked on ‘Read More >’ first. Users are looking for more information to get started.

RECOMMENDATIONS
1. Consider removing Read More > and add more info explaining intended audience and the purpose of this tool. People can always click on the About page if they want to know more.
2. Provide the purpose, what users will know after using the tool. Once they know the purpose, they can examine the resource to see whether it's going to help them.
3. Review content and language used on homepage - introduction and chapter headings. The introduction should let you know who [the audience] that the tool is intended for, and what it covers. Chapter headings should give users an overall view of the structure of the subject.
Game 2 Intro – What Users Expect

• Users expect the game will enable them to learn, re-familiarize and apply their skills.

• Users are typically excited to try out the game and expect an easy way to explore and use interface.

• Visual representations, not words are expected.
  ➢ P4 “Might be more interactive than just doing a test, more pictures that what a test would normally have.”

• The word ‘game’ means ‘fun’. When stating this users always mention and expect content will be serious.
  ➢ P5 “Will be fun, but help test my knowledge and skills along the way.”
  ➢ P7 “I would like to feel engaged, excited to play, and stimulated so it’s not boring.”
Simulation Game: Mental Health Assessment During a Home Visit

Introduction
Client: Irina, Mother of Sasha Kovalik
Situation:
While at the hospital with her son, Irina was referred to the agency due to signs of mental abuse.

About this Game:
This tool promotes the application of knowledge and skills related to establishing therapeutic nurse-client relationships.

How it Works:
- You will watch interactions between Irina and a nurse and then select the most appropriate response.
- Each decision is scored and a summary report is presented at the end.
- You can repeat this experience numerous times for practice and improved scores.
- Approximately 30 minutes to complete, but can be paused and saved at any time.

Your Task:
In the simulation you will assume a role of the nurse assigned to assess Irina at her home.
KEY OBSERVATIONS

• There was a confusion about Sasha. His age needs to be mentioned.
• There is confusion about Joseph, some users think he is Sasha. (Also his name if brought up on Feedback screen before Irina mentions him in video).
• People expected to see more notes about the client to make the scenario more realistic.
  ➢ Age, cultural background, financial situation. Why she was referred, and the signs of abuse.
• The word ‘game’ gets peoples attention, though some felt it didn’t accurately reflect what they were about to play. Some used different terms like simulation, scenario, case study, simulated practice.

RECOMMENDATIONS:
1. Provide a link to the Client Chart from the Game intro page.
2. Mention that ‘Suggested Reading’ links will be provided at the end as part of the summary report so that people won’t waste time taking notes during the game.
3. Expand the language to include the term ‘Decision Points’
4. Include a short video explaining how to play the game (nice to have).
The Gaming Experience
At start:

- Users were surprised in a good way about the high quality video and movie experience. Visual, interactive, users thought they were learning things.
- Everything they thought the game would be it was, in many cases the video exceeded their expectations.
- All participants enjoyed playing the game that they refer to as a simulation, scenario or situation with good quality video.
- The fact that game can be replayed is perceived as positive.
  - This helps reduce any anxiety that you have to get correct scores the first time.
  - Users are encouraged to play and further improve themselves.

During Game Play:

- For those playing the game, there’s no need for any tools or options. (Links at the top which are missed in most instances).
- Majority of participants took the time to study options and to read the feedback.
- Older participants spent more time reading copy vs. younger participants.
- Participants were genuinely interested in learning from each choice they’ve made.
- Getting things right was more important compared to getting a good score.
- Feedback screen evoked an emotional response in majority of participants. Some laughed, some argued with the Feedback.
Game: Overall impressions

Content impressions:

• A couple users commented that the opening of the video makes them feel dizzy (camera work)
• Video feels real – scary at times. They want to continue in many cases just to see what happens with the client.
• Answer options are seen as easy to read, wording isn’t too much. Answer options are generally well received, though some argued that that’s not how they’d act or say in that situation (bruises on client and where to sit is questioned).

Game Completion:

• All participants would be able to easily complete game. They engage immediately and progress quickly through answer options. They learn as they play very quickly.
KEY OBSERVATIONS
• When users get an answer wrong they are typically confused by why they’re presented with the same wrong option again.

RECOMMENDATIONS:
1. Choose one way of presenting options and be consistent.
2. Upon first time usage provide user with a TIP when they get an answer is wrong. Include also what happens with the options if they’ve not chosen the best answer. This will help users to understand what happens next. Having this information provided means users won’t be surprised when they are presented with the same question again.
INSIGHT: Users only click on ‘Client Chart’ when prompted.
Client Chart impressions

KEY OBSERVATIONS
• Users like the idea of a Client Chart, though felt its more useful in the beginning of the game – to get client’s background info and in the end in conjunction with the Summary report as a learning tool. (would print it)
• For nurses have experience with Client Charts and expect to see notes from previous visits and want to know if it’s a first visit or if relationship has been established.
• Users from the start, throughout and at the end of the game want to know more about their client. The game introduction doesn’t provide the amount of information they feel they need and the Client Chart is seen by some as a way of presenting that information more clearly.

RECOMMENDATIONS:
1. Make Client Chart accessible and clarify how it works from the start (progressively updated).
2. Include more Client background information to make scenario more real.
   - If accessed at beginning of game: Client Information: Name, age, marital status, financial situation and general reason for visit.
   - If accessed at end of game: Tell what happened, what nurse was able to assess about the client and what interactions, the signs and symptoms. Users expect to use as a study tool. Print, Save as..., Email and Share options are expected to be here.
Decision Points

Mental Health Assessment During a Home Visit

Navigate Decision Points
You can review videos for previous Decision Points (DP), but you cannot change your answers once submitted.
Decision Points impressions

**KEY OBSERVATIONS**
- ‘Decision Point’ link at top is not an obvious indication of functionality (on Game screen).
- Upon clicking the link users describe what they see as their path, or decision tree.
- Users see Decision Points screen as potentially useful as a study tool along with the Summary Report.
- Some users want the screen to be interactive providing them with the feedback.
- For visual learners this would be a preferred screen to the Summary Report or used in conjunction with the Summary Report. (user like the color coding)

**RECOMMENDATIONS:**
1. Consider making Decision Points clickable with access to feedback.
2. Make the link from the Summary Report to Decision Point screen more visible.
3. Provide same options as Summary Report, ie. save or print this page.
4. Be inspired by ‘Choose your own adventure’ books and online tool. 3 participants recalled these books upon trying out the game. Create an “You May Choose Your Own Adventure” – have a poll, let users choose, or provide feedback on where the story will go next.

Correct Response

Your score for this decision point: 300/400

You have introduced yourself and provided the client with information about your role. This is appropriate for the Orientation Phase of the therapeutic nurse-client relationship, as you are meeting Irina for the first time.

Turn off feedback option, but negative response feedback will remain. It can be turned back on under Menu.

Continue
Feedback screen impressions

KEY OBSERVATIONS
• Users really like that they get feedback during the simulated assessment.
• Checkmarks provide affirmation and reward which is positive.
• None of the participants would turn off screen using on/off toggle at the bottom.
• Some found how to turn on/off instructions confusing.
• Color coding, green, yellow and red add to the experience and understanding of correct or wrong responses.
• People commented on missing Reflective Questions and wanting to see Feedback copy to stand out more.

RECOMMENDATIONS:
1. Make Feedback copy to stand out visually.
2. Downplay or remove toggle feature from this screen.
3. Improve feedback instructions if choose to keep it.
KEY OBSERVATIONS

• Majority of users said Score is needed for this type of game. That’s what made it a game.
• Most users care about getting an answer right or wrong vs. collecting point or score.
• In some cases they don’t feel score is fair as some answer options come across as ambiguous. They also felt that the system should reward them when they picked the right answer on the second try. This can cause frustration and in the future we can expect it may create loss of confidence in the system for some users.
• No participants were able to understand how score was calculated even after reviewing score instructions.
• All users state that they’d care about score if this is part of a mark, or if an instructor has told them this is important. In this case the instructions did not state the score was important.
• Some users mentioned that score would encourage them to play more, until they improve it and become “The Best Nurse”.
• One user wanted to see a Scoreboard to compare their score to other players.
Score – Recommendations

1. Explain how Score is calculated right from the start.
2. Explain that Score provides bigger picture, allows you to improve your own knowledge.
3. Consider in the future to provide a game that does not include scoring (one that has a different scoring system, like stars or a count of right and wrong answers).
4. Make info on how score is calculated easy to understand.

WELL DONE!
Menu button and functionality

Menu icon and the expected functionality associated with clicking on this icon is not clear.

KEY OBSERVATIONS
Users don’t click on Menu button unless prompted to. All users were confused by the icon, no users were sure what they’d see upon clicking on it.

RECOMMENDATIONS:
1. Content needs to be added or removed based on what this page is to provide. The mix of menu options and settings on the menu page is confusing.
2. Chunk information according to functionality it provides, if associated with the game style content appropriately so users understand clicking on these affect the game.
3. Use game interfaces (ie. options view on right) as an inspiration on how to make improvements.
4. Many users mentioned Wheel icon that they’d expect in that place to change Game Settings.
Summary Report

Here is the breakdown of your results for each Decision Point (DP) where you can see when you’ve picked incorrect or less than ideal option, read the feedback and access suggested reading resources.

Your final score is 1300 out of 1700
If you want to improve your score, you can start from the beginning and replay the game. Just make sure you save this report before playing new game, as these results will be reset each time.

DP 1: What do you want?
You picked: Option A: Refer to arranged appointment - Correct Response!
Points earned: 300

Feedback:
You have introduced yourself and provided the client with information about your role. This is appropriate for the Orientation Phase of the therapeutic nurse-client relationship, as you are meeting Irina for the first time.

DP 2: Where to Sit?
You picked: Option C: Ask where to sit - Not the Best Choice
Points earned: 200

Reflective Question:
What seating arrangement will promote active listening as well as maintain your safety?

Suggested Reading:
Module 1, p.x, Strategies to support therapeutic communication
RESULTS: Combined Summary View preferred
• 6 out of 7, all but one user preferred the summary screen combined.
• The Summary report allows them to know how they answered questions with many stating they’d go back right away and read the modules and then re-play the game knowing where they went wrong.

RECOMMENDATIONS:
1. Combine Congrats screen with the Summary Report
2. Add Feedback content to Decision Point chart (make it clickable)
   For those that identify themselves as visual learners this provides an alternative way of understanding the results and path that the nurse could take.
**Game 2 - Future Opportunities**

**KEY OBSERVATIONS**
- The tool is considered of high value.
- Some participants mentioned that they would like to play more games from the same series – a follow up visit to Irina etc.
- Others mentioned that would like to play a new (similar) game, but now focusing on drug abuse or other situations, potentially with a different client.

**RECOMMENDATIONS:**
1. Consider the tone of voice the nurse uses in the film as she interacts with the client.
   - A couple of the participants commented on how the nurses tone (seen as high pitched scaring client at times). Users commented that her voice didn’t reflect how they’d speak to a client during an assessment.
   - The male nurse participant wished there was an option to have a male voice so he could be more immersed in the experience
2. One user suggested a voice over for feedback, instead of text – He didn’t like reading!
Game 2 - Future Opportunities

KEY OBSERVATIONS
• Nurses value relationships and are very empathetic. Users very quickly begin to empathize with the client. (One person mentioned that she wouldn’t ask about bruises so early into the conversation. She didn’t feel that the trust with the client was established yet).

RECOMMENDATION
1. Instead of counting the Score there might be value using a different scale for client trust level scale. As users would play the game, it would show them Client’s Trust Level – going Up or Down, depending on their choices.
Game 1 options

Views need to be retested due to time limitations and state of prototype. Results are inconclusive, views requiring re-testing.

**KEY OBSERVATIONS**
- Things that are presented as ‘greyed’ out mean that they’re not clickable, not available or not working. This is based on previously learned behaviour.
- ‘Pick an answer’ is clear.
- Users don’t get that they’d have to watch all 3 videos first before making a choice.
- Not everyone correctly identified “Replay” icon.
- Everyone understood “Your pick” badge above one of the options, as being the one that they’ve chosen already.