<u>Prototype Assessment</u>

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In order to assess the usability of the prototype 2 participants were asked to usability testing. Each participant was given a short description of the project:

"Blender is an open source software used to create 3D models, animations, and . The goal of this project was to reduce the learning curve of 3D modeling in Blender. This project attempts to provide beginners with some of the most important 3D modeling functions. You will be asked to complete 3 tasks in order to help improve the usability of this prototype."

Each participant was then asked to do the following tasks:

1. Apply smooth shading to the base object.
2. Apply 2 loop cuts to the base object.
3. Apply a single subdivision to the base object.

During the tasks, the interviewer assessed the learnability, speed, and errors made by each user. (See notes below each questionnaire)

After completing these tasks, each participant was asked 10 questions:

1. Prior to this demo, had you ever used the 3D modeling program Blender before? Had you used any other 3D modeling applications, if so, which programs?
2. Prior to this demo, had you used any digital art creation softwares?
3. On a scale of 1 to 10, 10 being an expert and 1 being a complete beginner, how would you rate your level of experience with 3D modeling?
4. On a scale of 1 to 10, 10 being an expert and 1 being a complete beginner, how would you rate your level of experience as a digital artist?
5. On a scale of 1 to 10, 1 being extremely difficult and 10 being extremely easy, how difficult was the first (smooth shading) task?
6. On a scale of 1 to 10, 1 being extremely difficult and 10 being extremely easy, how difficult was the second (2 subdivisions) task?
7. On a scale of 1 to 10, 1 being extremely difficult and 10 being extremely easy, how difficult was the third (loop cut) task?
8. How would you rate the looks of this prototype. On a scale of 1 to 10, 1 being extremely bad and 10 being extremely good?
9. Overall, how would you rate your experience during this prototype. On a scale of 1 to 10, 1 being extremely bad and 10 being extremely good?
10. Do you have any other comments/suggestions?

For each of the participants, the results of the questionnaire are as follows:

Participant 1
1. Some Blender experience, some experience with Sketchup
2. Yes, some Adobe Photoshop experience
3. 1
4. 3
5. 10
6. 10
7. 10
8. 6
9. 8
10. "Maybe include keystrokes. Pretty good altogether. I was not aware that there is an option for manually entering digits."

Interviewer notes on participant 1:
It was not immediately clear to the user that there was a difference between the edit mode and object mode functions. This uncertainty cause the user to enter the edit-mode menu when they should have been in the object mode menu, and became confusing when the functions were not there. The participant was able to complete task 3 far quicker than task 2, likely due to the similarities among the two processes. No major errors made.

Participant 2
1. No previous Blender experience. A very minimal amount of experience with AutoCad and Sketchup.
2. Yes. Adobe suites: illustrator, Photoshop, etc.
3. 1
4. 5
5. 10
6. 10
7. 10
8. 10
9. 10
10. No comments.

Interviewer notes on participant 2:
This participant was able to easily distinguish between object and edit mode. There was no major difference in speed between task 2 and task 3, task 1 was completed in the least amount of time. No major errors.

In addition to the questionnaire, Participant 1 was asked to do a heuristics evaluation.

Visibility of system status:
The participant was consistently aware when the prototype menu was up. They were also aware of sub-menus and aware of their depth within the sub-menu tree. Text in center indicating sub-menus was not immediately observable.

Match between system and the real world:
The prototype menu overshadows the object making it difficult to see the effects of the menu, but is aware after the menu closes.

User control and freedom:
There is enough control to complete the tasks which were limited in scope.

Consistency:
There is high consistency among the highest levels of the menu and among all sub-menus

Error prevention:
Minimal

Recognition rather than recall:
Menus were minimal in depth which allowed

Flexibility and efficiency of use:
The radial menu was difficult to close out of whenever a mistake was made.

Aesthetic and minimalist:
Minimal, aesthetic needs work. Coloring

Error recovery:
When entering the wrong menu mode there was no strong indication of how to reach another modes functionality.

Help and documentation:
Help was provided within the context of the menu.

Based upon the above reports, the priority list of items to be changes is as follows. (1 is highest priority)
1. Change the font in the center of the sub-menus and minimize the text to make it clear to the user that the center of the radial menu has changed and indicates the next step within the selected function.
2. A strong indication of the mode that the blender screen is in. (This is especially important for beginner users)
3. Allow for the menu to pop-up dependent upon where the user's mouse is rather than the center of the screen.
4. Prototype and test an option for clicking outside the radial menu to close out.
5. Minor amounts of repetitive clicking (indicative of limitations placed by the prototyping software rather than a reflection of the final product)