[redacted]

Preliminary Questionnaire

1. Have you ever taken a course on modeling for 3d computer graphics?

Yes

2. Have you ever followed a tutorial in order to create a 3d model?

Yes

3. On a scale of 1 to 5, how confident do you feel that you could create a 3d model that you have never attempted before using a tutorial? 1 being the least confident, 5 being the most confident.

1 2 3 4 (5)

Study Questionnaire

Part I. In general, compare the use of a video or static document tutorial to the interactive visualization system.

1. Rate the usefulness of each of the following on a scale of 1 to 5, 1 being the least useful and 5 being the most useful.

   Usefulness for getting a general overview of how a model is constructed

Tutorial Document:	1	2	3	(4)	5
Tutorial Video:	1	2	(3)	4	5
Interactive Vis:	1	2	3	4	(5)

   Usefulness for investigating key details and understanding how they were achieved

Tutorial Document:	1	2	3	4	(5)
Tutorial Video:	1	(2)	3	4	5
Interactive Vis:	1	2	3	(4)	5

2. If you had to choose only one way of learning how to make a model, please rank your preference for each type of tutorial/visualization in the order you would choose.

   1st choice: visualization

   2nd choice: document

   3rd choice: video

3. What did you like about your first choice compared to the others?

   the ability to customarily look at parts of the geometry and changes to it that I was interested in, rather than being dependent on what the tutorial author thought I would want to know

Part II. Compare the tutorial screenshots to the screenshots from the interactive visualization system.

1. Rate the usefulness of each of the following on a scale of 1 to 5, 1 being the least useful and 5 being the most useful.

   Usefulness for getting a general overview of how a model is constructed

Tutorial:	1	2	3	(4)	5
Interactive Vis:	1	~~(2)~~	(3)	4	5

   Usefulness for investigating key details and understanding how they were achieved

Tutorial:	1	2	(3)	4	5
Interactive Vis:	1	(2)	3	4	5

   Usefulness of the graphical annotations

Tutorial:	1	2	3	(4)	5
Interactive Vis:	1	2	3	(4)	5

2. If you had to choose between the two, which set of images better explained how the model was built (tutorial or interactive vis)? Explain what you liked about your choice.

   Tutorial, errors were excluded and screenshots were chosen that suited the creation process. I would prefer another's choice over arbitrary choice.

3. How did the use of graphical annotations affect your choice?

   Little to not at all, I found them equally clear, with occasional ambiguities in both sets of screenshots

Part III. Compare the interactive visualization system with and without the ability to cluster or filter changes to the model.

1. Rate the usefulness of each of the following on a scale of 1 to 5, 1 being the least useful and 5 being the most useful.

   Usefulness of for getting a general overview of how a model is constructed

Clustering:	1	2	3	4	(5)
Filtering by types of operations:	1	2	(3)	4	5
Filtering by selecting parts of the model:	1	2	3	(4)	5

   Usefulness for investigating key details and understanding how they were achieved

Clustering:	1	2	3	(4)	5
Filtering by types of operations:	1	(2)	3	4	5
Filtering by selecting parts of the model:	1	2	3	4	(5)

2. Would you prefer to have the ability to cluster and filter changes to the model? Explain why or why not.

Yes; why argue against more power to the user? I found the customizable clustering much preferable to attempting to navigate the model without clustering.

Part IV. Consider the interactive visualization system. Please leave a few comments on each of the following.

1. In general, do you think that the ability to interact with the visualization and change characteristics of what you see helps you to understand how a model was created? How so?

Yes - to create a 3D model requires a 3D understanding of it, and it is easier to understand a 3D object by interacting with it rather than looking at it. (or watching it in motion)

2. Do the clustering of operations and the graphical annotations help to give you an overview of how the model was created? Do you find this useful? How so?

Yes, ability to skim irrelevant areas and focus in on specific areas of change is much appreciated

3. Do you think you would change the level of detail in the clustering often? How important to you is the ability to change this level of detail?

Yes, I think I would often change between broad- and small-scale, though I might not fine-tune the clustering detail much more than that. However I still found it more intuitive/helpful than filtering specific actions one by one.

4. Does filtering out types of operations help you to focus on parts of the model creation process that are interesting to you? Please give an example.

As stated above. I did not use this feature extensively but I imagine this would be helpful once I got into the technical details of e.g. creating the texture on the droid wheel.

5. Does filtering out operations that affect only certain parts of the model help you to focus on parts of the model creation process that are interesting to you? Please give an example.

This definitely helped because of the interwoven nature of modeler actions. It was much easier to see changes to the hips of a model using this tool than to scroll through to find each tweak.

6. Do filtering out sections of the timeline and using the thumbnail views help you to focus on parts of the model creation process that are interesting to you? Please give an example.

The thumbnail views may have been useful, but I didn't consciously use them much or look at them closely. Using part-specific filtering seemed ~~more useful than for~~ the most useful type of timeline filtering.

7. In general, please rate the usefulness of each of the following features compared to one another on a scale of 1 to 5, 1 being the least useful and 5 being the most useful.

Graphical annotations:

1 (2) 3 4 5

High level clustering (seeing many operations at once):

1 2 (3) 4 5

Ability to control the clustering level of detail:

1 2 3 4 (5)

Filtering by types of operations:

1 (2) 3 4 5

Filtering by selecting parts of the model:

1 2 3 4 (5)

Filtering by focusing on the timeline and thumbnails:

1 (2) 3 4 5