

Outcome test 1 Magic Leap

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Introduction

In total, 8 tests were conducted during the first usertest round. In this document, all the results are written down. Out of this, a conclusion will come. After this, the recommendations will be written.

Outcome tests

Questionnaire 1:

Out of 8 test persons, 2 have used the Magic Leap before. These 2 haven't used it intensively before.

Test persons knowledge of AR varies. Most of them have a basic knowledge of what AR is, some have more advanced knowledge.

Test 1:

1.

- liked to use the controller.
- Got scared as the sounds pop (need more visual guidance)
- Button mapping not clear
- First button pressed -> home button
- used the controller with 2 hands.

2.

- Riddle 3 opened by accident
- Riddle 1 was easy
- The sign wasn't intuitive on how to use it -> Tried to draw the sign with the controller.
- Touch was intuitive.

3.

- Not good at riddles
- 1st interaction was easy
- Really liked the gesture
- Comfortable with the eye tracking

4.

- Controller worked well, testperson picked it up and felt comfortable.
- Gesture was a bit hard to use, didn't understand that she needed to look at it to activate it.

5.

- Picking up controller number one, went well.
- Amazed by sign working
- Use eye signs for number 3, still activated because he was looking at it.
- pressing is ok.

6.

- First thing he did was picking up the controller
- 1st riddle was easy
- amazed by gesture capability
- 3rd was easy/natural for him

7.

- Riddle box was clear

8.

- instantly got gesture one
- knew the gesture but not how to use it

- thought it was a gesture
- Easy.

Test 2

1.

- Rotating with the controller is hard (too low sensitivity)
- General manipulation with the controller is not intuitive.
- Knowing which buttons for right combination is hard.
- hard time selecting the object by hand.
- distant manipulation with hand not clear.
- moving with hands was fine.
- scaling not intuitive with both devices. (hand wrong axis to scale.)

2.

- Pressing the object was hard with hands.
- After figuring out how to hold the object, the manipulation were easy to understand.
- Button mapping on controller not clear.
- Button combination is hard to keep track of, too much information needed.
- Likes the hands more, but controller is easier to use at the moment.
- Tried to grab the object same way as in real life.
- Buttons are in the way of the object.

3.

- Grabbing and moving object with controller is easy.
- Rotating not comfortable, too low sensitivity
- depth moving not easy.
- Selecting object with hands is hard.
- Lost tracking of object, object had snapped out of FOV.
- comfortable with controls.

4.

- use of controller went naturally, when teached the controls, it went well.
- Hand were harder to use, buttons were in the way.

5.

- Was hard to select object with hands, because of the bubbles.
- Hand got out of FOV many times.
- Learning controls with controller is pretty hard
- rotate sensitivity is too low with controller.

6.

- Fast selecting the object and manipulate it
- The bubbles are in the way
- Hard time locking with the controller because of bubbles still in the way.

- Easy movement with the controller
- Rotating was hard to trigger
- Scaling and rotating with controller are not intuitive.

8.

- Tried opening the teapot with the hand
- used the controller to manipulate it instantly
- hard time selecting the bubbles, figuring out how it works
- not clear what to do or interact -> need clearer user journey to test.

Questionnaire 2 - General thoughts

What were you feeling when the first level started up?

- It was cool visually.
- Cool first impression
- It was cool, although weird (she could see something we couldn't)
- weird and cool
- Searching for object.
- Futuristic and cool to integrate 3d objects in the environment.
- It is weird needing to move to interact with objects, because we are used to using screens.
- Seeing thing around other people cant see.

Was it clear how to manipulate objects in AR?

- Not at first, but after learning it went pretty smooth
- Pretty easy
- After understanding the basics it went pretty easily
- controller was easier, hands were cooler
- Hand controls were more liked, more obvious.
- The hands feel more natural, controller button mapping is hard.
- Riddle box is clear, but the object manipulation isnt as intuitive without guidance.
- Instead of buttons, use tools to represent the action.

Uncomfortable?

- eye strains
- heavy
- sound needs to get blended in better.

Conclusion

The riddle box was positively received by the audience. The test persons were amazed by the capabilities of the Magic Leap, the gestures were liked very much.

The manipulation of the object with the controller is hard to learn but when taught it goes pretty well. Rotation with controller is hard, because the rotation is the same as the rotation of the controller. This makes turning something 180 degrees nearly impossible.

The manipulation of the object with hands is generally more intuitive according to the testers. The first thing people tend to do is trying to grab the object, the same as in real life. However, the selection of the object is too difficult and the manipulation bubbles are in the way of the object itself. Because of FOV limitations, the hands get out of the screen too many times, which results in the snapping of the object.

Recommendations

To make the manipulation of the object easier, the control buttons need to change position to a point that is on the user (like on the arm).

The touching of the object needs to be optimized, like with the touch of the control buttons

Tools could be thought of to manipulate the object, like having a magnifying glass for scaling.

Think of a way to combine the controller with the hands, they both have their strengths and weaknesses.

Rotating needs to be redone, both ways were not intuitive.