Questionnaire Results
Personal Information and Previous VR Experience
3rd User Test: 05/06/2023

For this fourth user-test we have merged all the questions in one single questionnaire, in order to make it more comfortable for the volunteers to answer them. Besides, we have deleted the "Feedback" section, as we already received direct feedback from each user after the tests and the questionnaire results didn't add up much information. We have also added a question for asking permission for taking pictures during the experience. In the report we have followed the same structure as in the previous cases: personal information, previous VR experience and virtual experience. As such, for analysing the results, we will be following that same structure.

Only 3 people signed up for the user-test, but in the end 10 people took part and filled out the questionnaire.

Image Permission
All the users agreed to being filmed during the experience (see Graphic 1).

Do you give us permission for filming and taking pictures of you?
10 erantzun
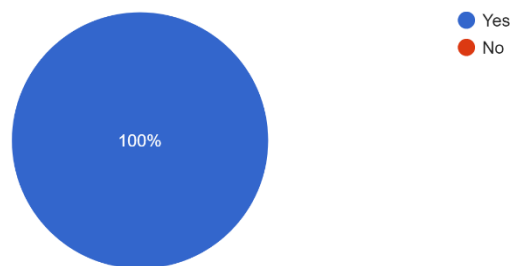
Graphic 1

## Personal Information and Previous VR Experience
The first section of the questionnaire gathered personal data about the participants. The results show that 5 male and 4 female users, between the ages of 20 and 51 took part in our fourth user test. One person answered to the question about gender with the word "Gender", so it is not clear the gender of the 10th user (see Graphic 2 and 3). Regarding the nationalities, there were Basque (1), Belgian (2), Bulgarian (1), German (4) and Spanish (2) (see Graphic 4).

All users except one were students from various study backgrounds: occupational therapy, tourism, education, humanities, mechanical engineer, communication, and public relations and corporate communication. The other user was a lecturer (see Graphic 5, 6 and 7).

All of the users knew what VR was and all except two had had previous experience with it. The experiences they had were diverse: in Anatomy class, our previous EPS experiments, gaming and attractions (roller-coaster, jumping off a building). For all of the students except one, who felt neutral about it, considered the experience as positive (see Graphic 8, 9, 10 and 11).

Regarding the last question about the previous VR experience, it must be said that the order of the questions was not correct, and that people answered this question with regards to the current VR user-test, and not their previous experience. Therefore, we are not considering these answers for the results.

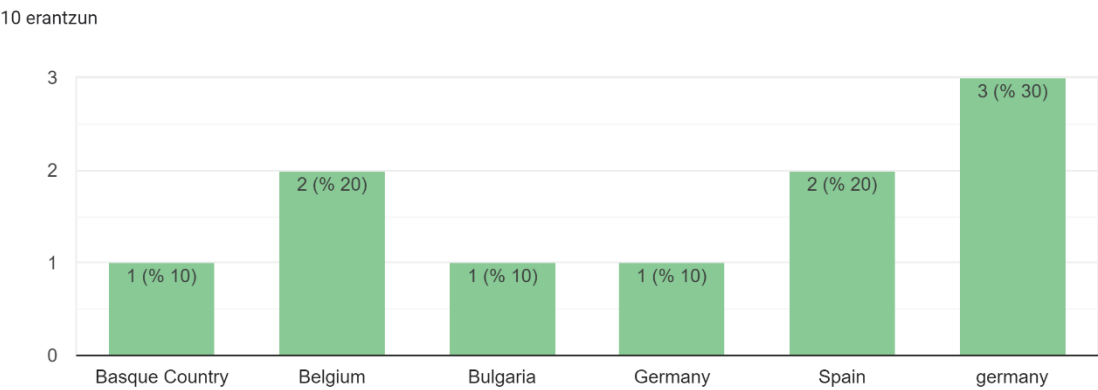These are the graphics for this section of the questionnaire:

Age
10 erantzun
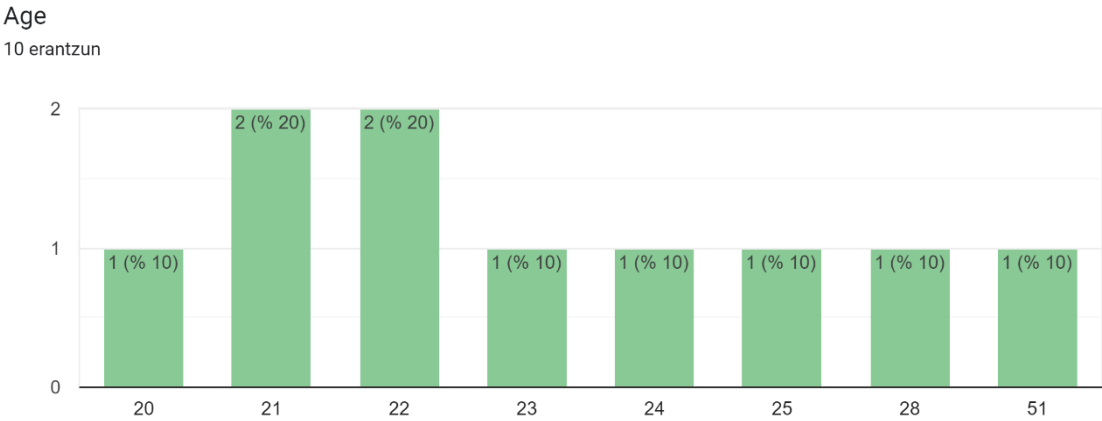
Graphic 2

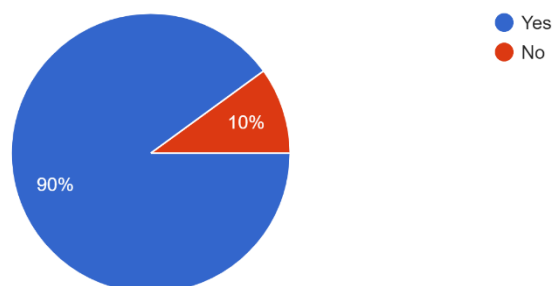**Gender (if you don't feel comfortable disclosing your gender, skip this question)**
10 erantzun
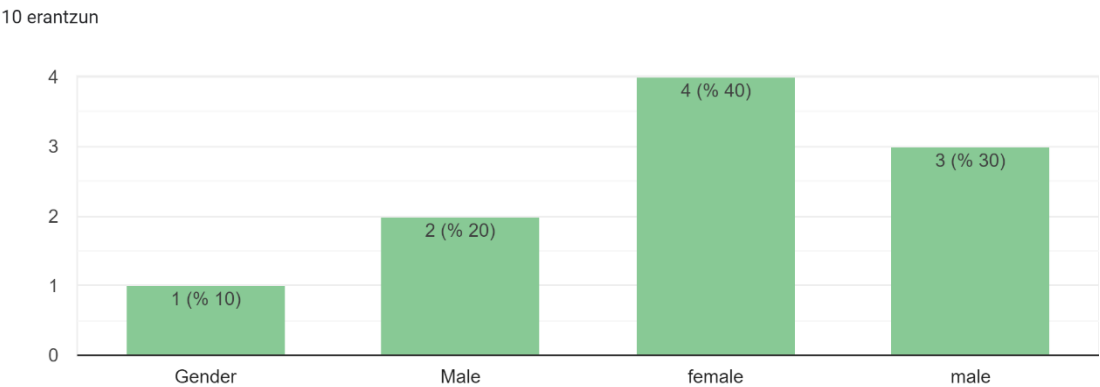
Graphic 3

Country of origin?
10 erantzun

Graphic 4

Are you a student
10 erantzun

- Yes
- No

90%

10%

Graphic 5

Studies

What is your field of study?
9 erantzun

| occupational therapy |
| Tourism |
| Education |
| Humanities |
| Mechanical Engineer |
| Communication |
| PR and Cor`porate Communication |
| primary school teaching |
| special needs |

Graphic 6

Job

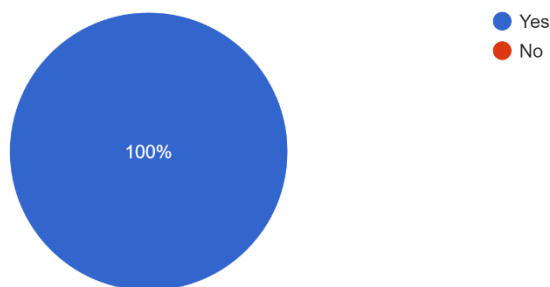**What is your profession? (If you are unemployed, please, disclose it as well)**
Erantzun bat

| Lecturer |

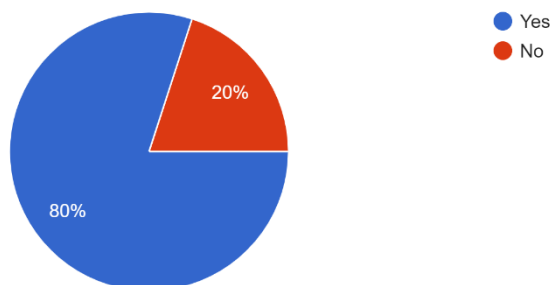Graphic 7

Do you know what Virtual Reality (VR) is?

10 erantzun

Legend: ● Yes ● No

100%

Graphic 8

Have you already had VR-Experience before?

10 erantzun

Legend: ● Yes ● No

20%

80%

Graphic 9

Please tell us a little bit about your prior experience with VR. Was it a game? An immersive experience like a roller coaster? A 360º video? Please, specify the approximate duration, how many times you have experienced VR, etc …

10 erantzun

I used VR before, in class to study anatomy. We used it to let the body turn and have a good image of the bones and muscles etc.

EPS

My previous experience was with you, when I tried your previous immersive experience.

All the EPS experiments + VR games from Meta VRs

I've developed a VR videogame, so I am a little bit used to VR. I've also played some games like Beat Saber or Shoters and done some experiences like roll-costers or jumping from buildings (1 hour experience).

Very little experience. Playing games, messing around in a room build in unity

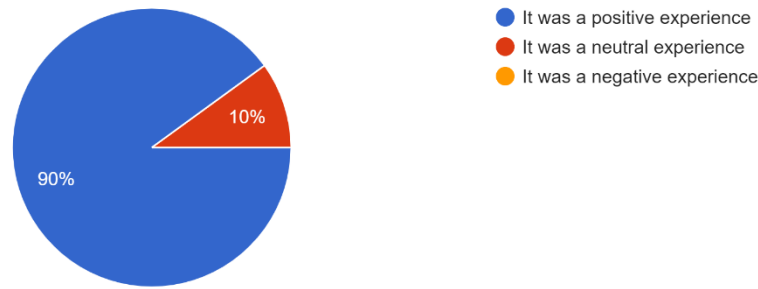Just normal exp. with friend, but always amazing

xxx

i onlz had the experience last week with you

Graphic 10

Choose the option that best describes your previous answer

10 erantzun

● It was a positive experience
● It was a neutral experience
● It was a negative experience

10%
90%

Graphic 11

Personal Experience
When asked to briefly describe the fourth user-test in their own words, they highlight the change of scenery, how dark and cold the cave feels and the relief when reaching the sunset. See Graphic 12 for the whole descriptions.

Personal Experience

Describe briefly in your own words what you have just experienced in the Immersive Lab

8 erantzun

It feels like you're really in a forest. It's cool to feel anxious in the cave and experience even the cold when you go down the cave. You have to follow the path that's made for you, so you know which way you have to go. To feel the underground change, is a big part of the experience, because it feels like the real world.

Very nice experience, interesting and very immersive

I was in a different spaces, first in a forest with a lake that was very dark, then I was in a cave, small cave also in the dark. In that place I feel like I could fall in the hall, but at the end I finished in a beautiful hall with amazing views to the sunset in the sea. From my experience, I am very surprised, it feels real, I was scared about falling, so congrats because you achieve that I forgot where I really was.

An evening out in the nature exploring

An immersive experience where the aim is to make the user feel totally immersed in the scene that he or she is looking at through the headsets.

An immersive vr journey through forrests and caves.

i was so suprised that students from Europe create such a nice lab and getting better and better

a exicited and funny experience!!

Graphic 12

Virtual Experience Test

In this section of the questionnaire the users are asked about the quality of the VR experience.

First of all, in terms of visuals, they all agree that they were realistic and immersive and half of the volunteers felt that they were in the rain (see Graphic 13, 14 and 15).

80% of the users found it easy and safe to move around, because the physical experience matched what they were seeing in VR. Also, there were some people who didn't feel that comfortable because of the scenes themselves; the cave was a bit scary. They also point out that the lights and mushrooms were helpful. All of this, though, made the users feel more immersed in the virtual environment (see Graphic 16, 17 and 18).

All the users stated that it was clear how to navigate the environment and just three confessed that they found disturbing that they couldn't see their body in the VR environment. They would have felt safer if they could have seen their feet, especially in the cave (see Graphic 19, 20 and 21).

As for the umbrella and flashlight, generally, they felt the flashlight was more useful than the umbrella, since some users didn't really feel the rain or thought the umbrella was not necessary. Also, one user missed the possibility of turning the flashlight off and another wanted to hold the rock but couldn't because of the controllers (see Graphic 22).

For the 80% of the users the height of the ground was fine, and the others felt shorter (see Graphic 23).

When asked about which physical inputs did the users notice, and this is what they answered: wind, different grounds (leaves, carpet, sand, rocks), walls, smell, obstacles on the ground, height and tree branches (see Graphic 24).

All the volunteers agreed that the physical set-up matched what they were seeing and that this made them feel more immersed (see Graphic 25 and 26).

The wind was felt by most of the users and this made them also feel more immersed. The bench all matched the one that they were seeing in VR (see Graphic 27, 28 and 29).

When asked about the level of immersion, five didn't forget that they were in a laboratory, but four did and one felt neutral about it. Nevertheless, nine volunteers felt they were actually in a forest (see Graphic 30 and 31).

More than half of the users felt they could fall into the lake and they also thought of actually stepping into the lake (see Graphic 32 and 33).

Seven people felt fear of height in the cave, one claustrophobic and three didn't feel nothing at all. Also, half of the users admitted crawling through the end of the cave. The ones who did it stated that it felt "nice", "funny", "realistic" and "crazy" (see Graphic 34, 35 and 36).

Just one person felt like taking the headset off to see what was happening in the real world and most of the users felt a stronger sense of being in the environment than in the real world (see Graphic 37 and 38).

Just one person was not disappointed that the experience was over, but all of them would like to have the experience again (see Graphic 39 and 40).

More than half of the users wouldn't change anything from the experience, but these are some suggestions that they gave us (see Graphic 41 and 42):

- Add water
- Add smells
- Add branches hitting the head
- Add the big tree trunk to climb over
- Add wall-obstacle
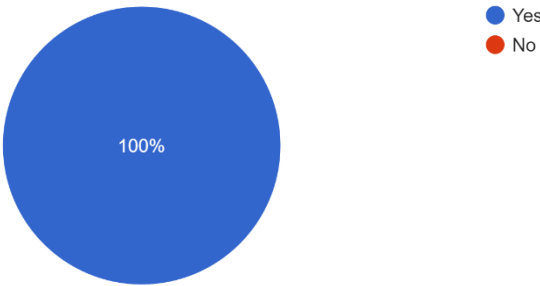
How realistic did the forest look like?
10 erantzun
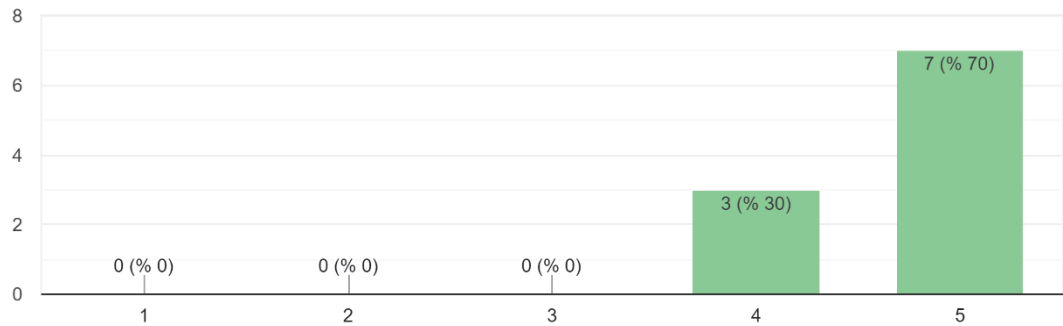
Graphic 13

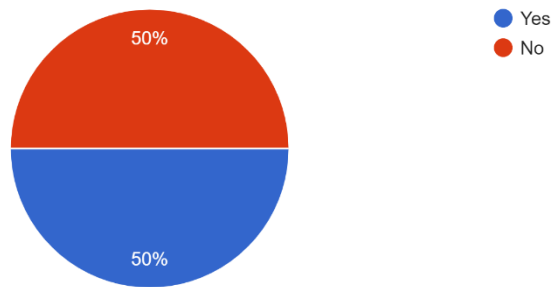Did this make you feel more immersed in the environment?
10 erantzun

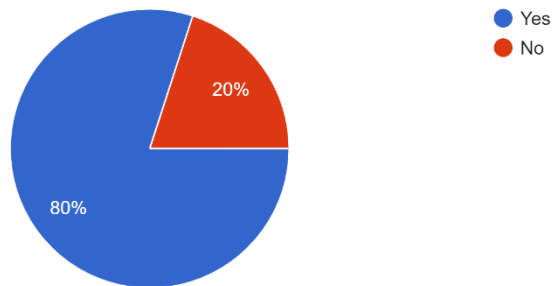Graphic 14

Did you feel, at any point, that you were in the rain?
10 erantzun

Yes
No

50%

50%

Graphic 15

Did you find it easy and safe to move around the place?
10 erantzun

Yes
No

20%

80%

Graphic 16

Explain your previous answer
10 erantzun

What you saw in the game, is also what you felt in your environment, so I really felt it safe to move around in the forest, as well in the cave.

Where the high area was, it would've been nice to have some physical aid because I really felt that I could fall

The immersive experience scared me, so I don't feel very safe moving around the different areas.

Adding the lights + the mushrooms was a good one

It had no difficult obstacles and It was easy to walk around.

It was exciting and intuitive. The only scary part was the cave with the abyss.

It was so realastic

it was super nice and exciting and it felt so real!! Also the different weather conditions felt very real. With the rain of course I couldnt feel the drops but since i have an umbrella in my hand its realistic that i dont
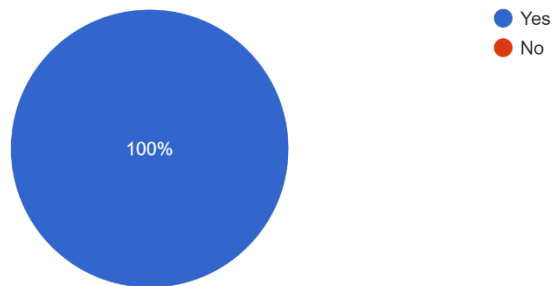
is was not easy because it was not a comfortable situation but in real live i felt safe

The VR was realistic enough to feed the eye-foot coordination

Graphic 17

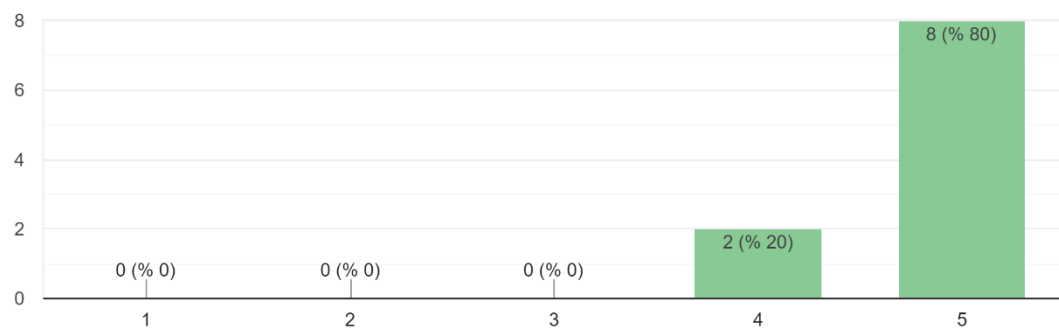Did this help you be more immersed in the virtual environment?

10 erantzun

- Yes
- No

100%

Graphic 18

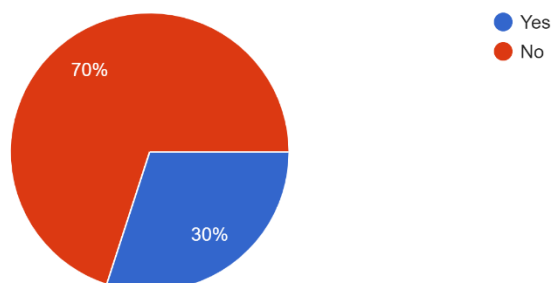Was it clear for you how to navigate the environment? (Follow the lights, teleportation...)

10 erantzun

8					8 (% 80)
6					
4					
2				2 (% 20)	
0	0 (% 0)	0 (% 0)	0 (% 0)		
	1	2	3	4	5

Graphic 19

Did you find disturbing that you couldn't see your feet or, in general, your body in the virtual environment?

10 erantzun

- Yes
- No

70%

30%

Graphic 20

If you answered "Yes" in the previous question, explain briefly why and how this affected your immersive experience.

3 erantzun

I would prefer to know where is my feet, to feel more safe, and to be more aware about my movements.

maybe you felt that the steps did not match perfectly

In general it was not something that I missed but when I was in the cave I was so focused looking at the floor that then I realised that I had no legs.

Graphic 21

How did you feel about the umbrella and flashlight? Was it comfortable to carry them? Explain in your own words the experience

10 erantzun

Yes, for me it was no problem to hold the controllers, it felt more realistic to have a flashlight to use in the cave. The umbrella zas usefull for the rain, so it didn't feel disturbing.

Yes, it was comfortable

Yes, I think they were comfortable, and It is really cool to see in the game the umbrella and the falshlight.

the umbrella is quite passive but is cool to play with it + the flashlight

Yes, it was cool to have them. But I missed the possibilite to turn off the flashlight.

The umbrella was (sorry for the hard words) kind of useless because i never really felt like it was raining. The lamp however was very immersing and intuitive. It feels like a real lamp

was very helpful

was fine. I think the umbrella was less necessary but the flashlight was super cool and authentic, especially in the darker environments

yes but sometimes i wanted to hold the rock to feel more safe but taht wasnt possible

I hate umbrellas and never use them but I get why you implemented it. The flashlight was great.

Graphic 22

Did you feel comfortable with the height of the ground? That is, in the VR experience, did you feel you were shorter or taller than you really are?
10 erantzun

- ● I felt shorter
- ● The height was fine
- ● I felt taller

80%

20%
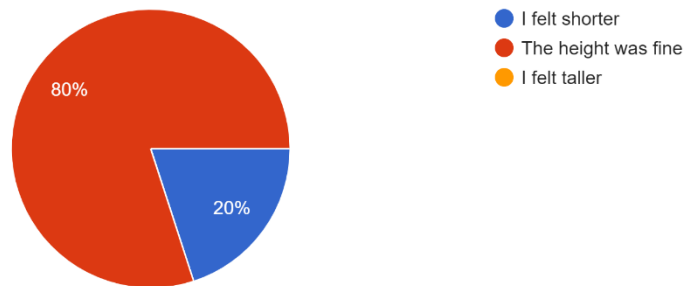
Graphic 23

**Physical Stimulus**

What physical inputs did you notice?
10 erantzun

The wind was blowing, the underground was changing from leafs and sand, to rocks and back again to sand.

Wind, stones, platforms, carpet, sand, etc

rocks, sand, wind and walls

wind, rough terrain and different textures

The "wind", the smell, the obstacles on the ground...

Wind, smell, sand and rocks on the floor, height and cliffs, tree branches on the floor

sometime when the enviroment changed i scared a bit

i sometimes hesistated do do a step or walk further because it felt so real and sometimes scary (in a good way), i felt very calm in the relaxing environments like the rainy forest and the sunset cliffs

the rocks, the underground changed, the wind

Different undergrounds and levels

Graphic 24

Did the physical set-up match what you were seeing?

10 erantzun
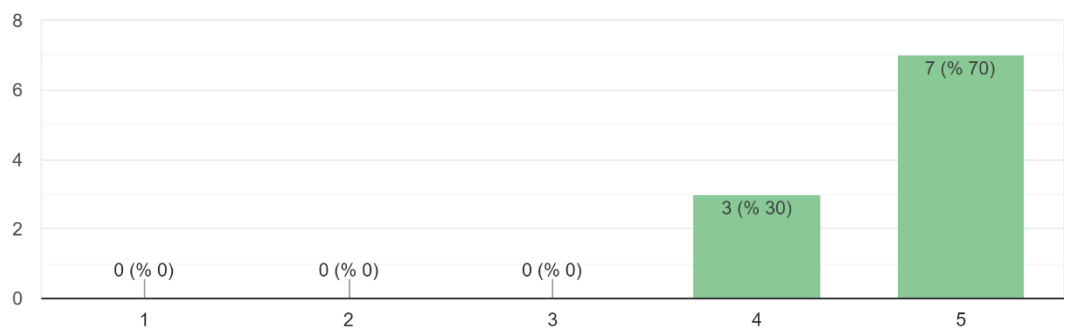
Graphic 25

Did this set-up help you feel more immersed in the virtual environment?
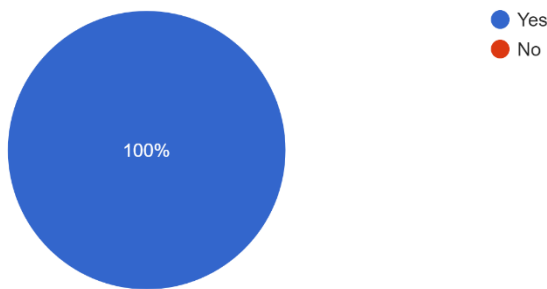
10 erantzun

Graphic 26

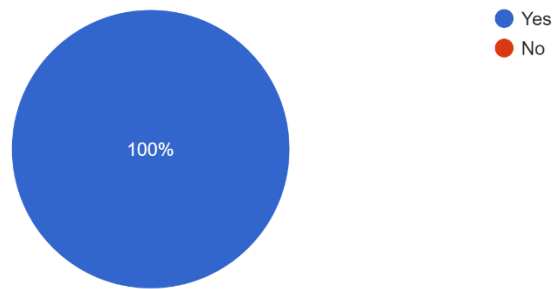To which extent did you feel the wind?

10 erantzun
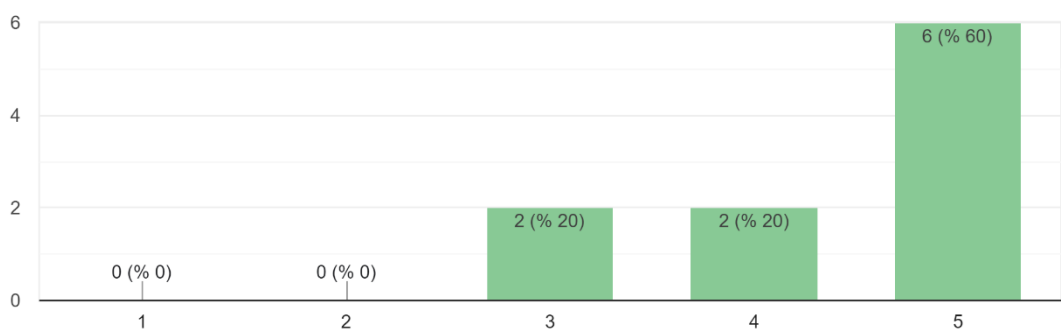
Graphic 27

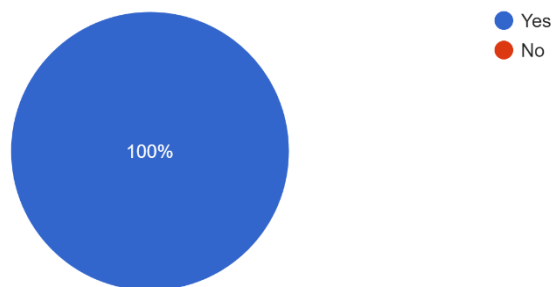Did the wind help you feel more immersed in the virtual environment?

10 erantzun

- Yes
- No

100%

Graphic 28

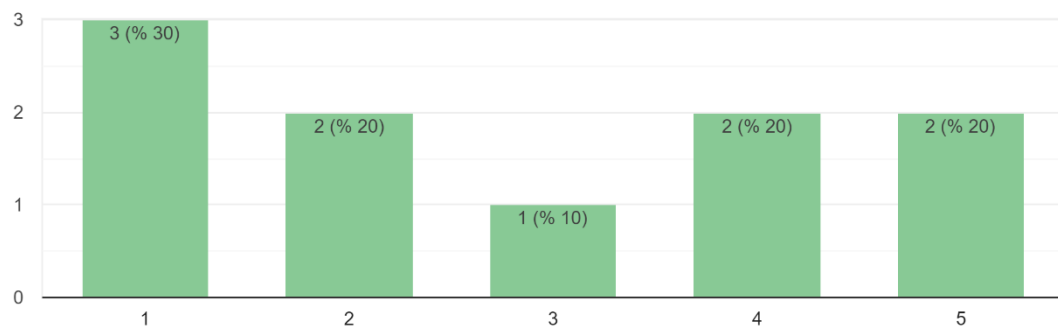Did the physical bench match the one you were seeing in VR? (surface, height...)

10 erantzun

- Yes
- No

100%

Graphic 29

To what extent did you forget that you were in a laboratory?

10 erantzun

Graphic 30

To what extent did you feel you were actually in a forest?

10 erantzun
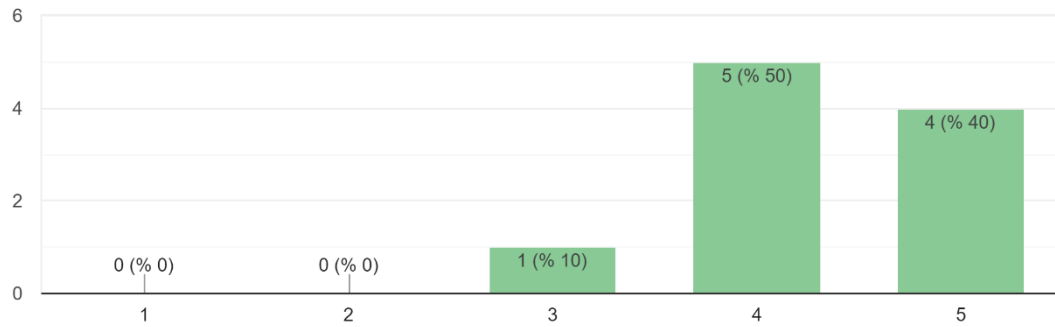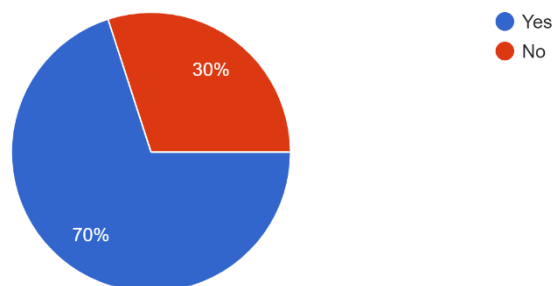

Graphic 31

Did you ever feel like you could fall into the lake?

10 erantzun
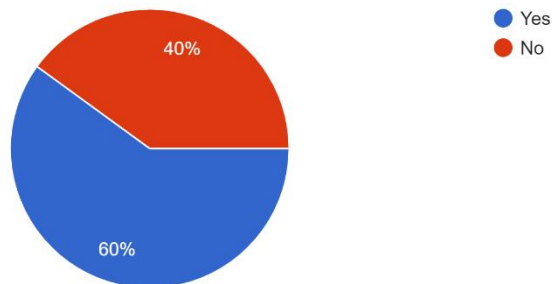
Graphic 32

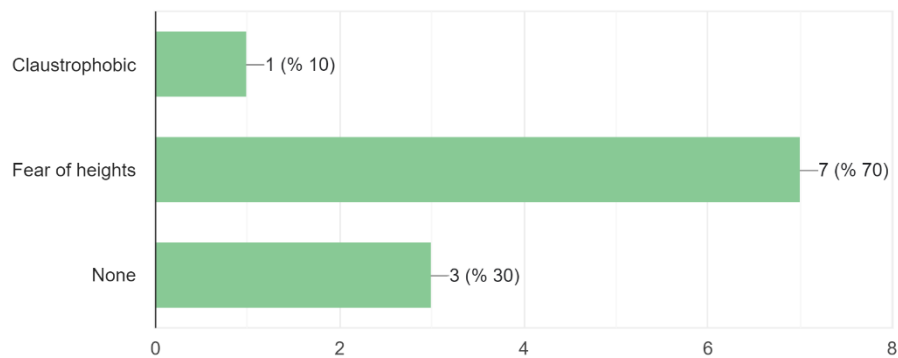Did you ever think of stepping into the lake?

10 erantzun

Graphic 33

Did you feel claustrophobic or fear of heigths in the cave? (You can choose more than one)
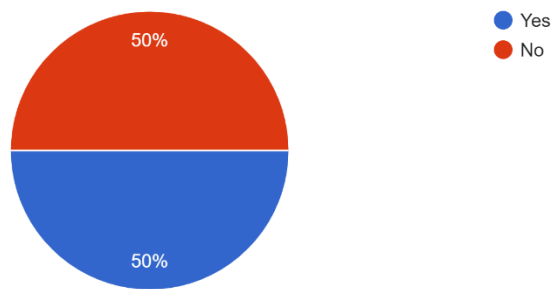10 erantzun

Graphic 34

Did you crawl through the end of the cave?
10 erantzun

Graphic 35

If you answered "Yes" to the previous question, explain briefly how did it feel.
5 erantzun

It felt nice

It was funny to do it. I knew that I didn't have to do it but I really wanted to do it.

feels so realistic

so the fear of heights was actually not so scary more of a cool feeling that i could step out of my confort zone becuase i would never do this in real life! so cool! Crawling through the cave made it so real!!!

crazy, i really felt that i have to do it, that was fun

Graphic 36

Did you ever feel like taking the headset off to see what was happening in the real world?
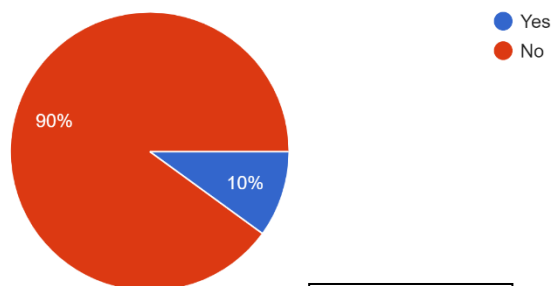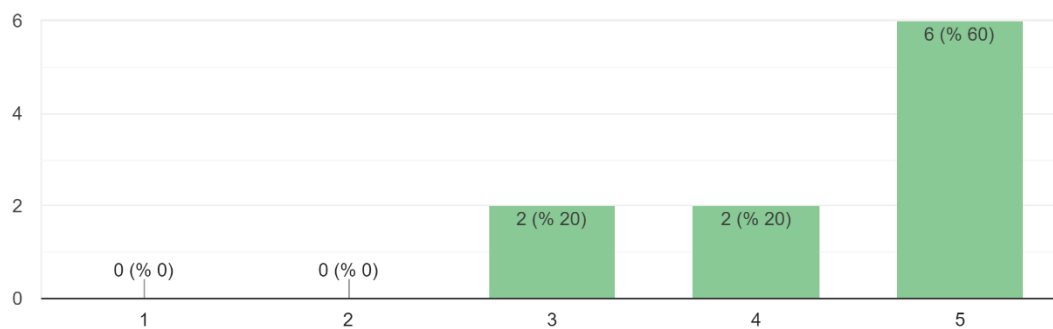
10 erantzun

Graphic 37

To what extent was your sense of being in the environment stronger than your sense of being in the real world?
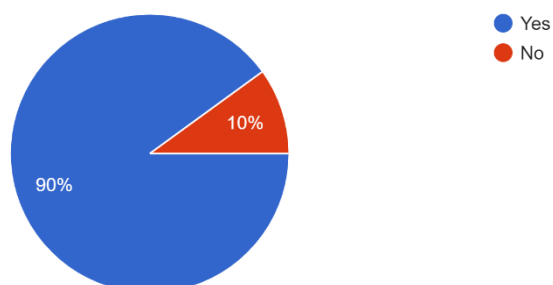
10 erantzun

Graphic 38

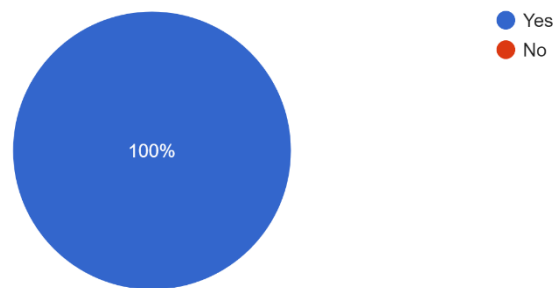When interrupted, were you disappointed that the experience was over?

10 erantzun

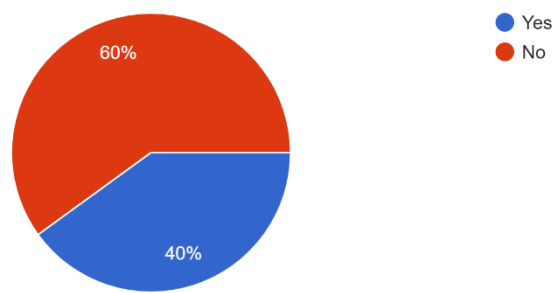Graphic 39

Would you like to have the experience again?

10 erantzun

Graphic 40

Would you change the set-up in any way (amount of rocks/sand, size of rocks/tiles...) or add anything to make it feel more like in the virtual environment?

10 erantzun

Graphic 41

Leave us your suggestions, please :)

8 erantzun

I'd add some water sprays and smells but in general it's an amazing experience

maybe some branches hitting on the head

It was very fun. The cave was the best part because it was very scary. Maybe the forest was the one that felt less inmersive because I missed some physical objects like the wide tree but It still was a very funny experience.

Even though you had one and it didnt work out, some kind of wall-obstacle would mayve have been nice

amazing

the only thing i remember was that i was kind of walking through the tree stump in one situation because i knew that there is not a real tree. Maybe it would be fun to add some object/obstacle to climb over something. Otherwise just AMAZING

thank you!!!

Great job and great experience. Thanks for letting me try it out¡ Well done¡

Graphic 42