positive

What did you think of this application?

* I liked the idea of this interactive visualization. While there are some small design choices that could be improved (such as the placement of the information boxes), it was overall a good experience. One issue that I see is that I always only saw partial information. If I forgot information from one stage, I had to teleport back which takes more time that just moving the eyes on the 2D visualization.
* "Fun but still quite primitive, needs further development. Sometimes it's not providing enough information as I wanted, also didn't really help me understand the workflow better because it's quite distracting to have to re-navigate myself frequently in the middle of the map."
* "It was quite fascinating to use, because I am not very used to VR apps, eventhough I have used them in the past. My first impression was that it was very colorful."
* a bit less intuitve than the AR. pretty colorfull and easy to use. i played several VR games before and the fact that it has the same (or similar) cotnrols is very helpfull to get an easy start.
* It was interesting, but the hardest to navigate. Information was not directly available on each node and showing information about each node required to jump to it.
* Unproductive to walk from node to node instead of seeing them all grouped in once.
* very good visualisation of workflow because I always had an overview of where I am in the process. Because I felt like I'm phsically moving through the stages, it felt more like I was accomplishing big steps rather than if I just had a diagram.
* It's an intersting experience, I could see how the workflow was layed out and inspect every step individually. I could imagine that I, as a scientist from another domain, can learn what the workflow does, if there were more information about the individual workflow nodes in the VR environment
* Interesting and something new for me
* The idea that you are "part" of the workflow model is very interesting and helps you to see how the processes take place (are they different? in parallel? etc.)
* I found it unneseserily playfull. I belive such representation of the workflow does not allow u to see the whole picture, making the understanding harder. I liked that it was more detailed than the desktop version, but AR was more practical and offered the same amount of information, if not more
* The application was very intuitive and engaging. Walking around a workflow inunciates you're brain to think that you are actually making progress, and hence this application feels more 'rewarding'.
* It was an interesting experience. To see a workflow and 3d and move along the steps was very different to 2d. It felt more like I'm actually progressing along, which I don't epxerience when Im looking at a 2D representation.
* interessant das mal zu sehen, wie man das darstellen kann
* "nice to use sah gut aus, sehr ansprechend"
* it was a very creative way to show the topic, in my opinion a bit more complicated than AR because of the movement
* "From all of the applications presented, this one was the most immerse one and contained the most information, allowing for a better understanding of the DAW.
* It was good for grasping the tasks performed in each stage and enabled a more in-depth understanding."
* Fascinating

Can you imagine any specific scenarios where this representation would be useful?

* I feel like the VR application would benefit very complex workflow where a 2D visualization would require line/path crossings. In 3D this could be visible more easily.
* "After fully developing a workflow and would like to have a fun and interactive way to show people my work I would maybe choose this way to visualize the pipeline.
* Maybe if it's fully developed with the functionality to import files, I would also use it to run a small and short workflow."
* "I think especially for (remote) meetings in teams an app like this could help a lot with organizing and planning a project.
* I really enjoyed the summaries that were available at every node, and can imagine that using a 3D space like this would be much more engaging in meetings of different kinds."
* getting In detail views of single parts of the workflow
* Maybe to give a better understanding of each specific step and how they are connected, but only if the user is already familiar with the workflow and its classical representation in a graph.
* If it is a really really complex workflow it could help seeing the flow in 3D (like a path in a room)
* To replace very complicated workflows that have a lot of steps and branches, this way of visualising is a lot clearer and less overwhelming (because not everything is squeezed onto the screen all at once, and you "phsyisally move" through the steps).
* Learning about the workflow in early stages, especially if the users don't know the program. Then, the 3D presentation would allow to show much more information than e.g. a picture.
* Maybe in scenarios which have a lot of information per node
* For individual use, e.g. for a private project or as a presentation for others
* This level of visualisation might be usefull for learning aplications for children.
* This application in itself felt really useful. This would be also great to visualise branching workflows.
* If I do some data transformations for some steps of the workflow that changes the distribution I can image it being helpfull to see these distribution changes with each step.
* bei Forschungen, um anderen Teilnehmern visuelle Einblicke zu geben statt nur theoretisch es zu erklären um schnellere Abläufe darzustellen
* um mit anderen zu kommunizieren bzw. Informationen aus zu tauschen (abwechslungsreiche variante)
* To explain the different steps of a procedure in a more detail way
* "I think it would be useful for presenting DAWs to the layperson while keeping it interesting and also allowing for a somewhat deeper understanding of the DAW compared to the infographic on the monitor.
* Since one can not really interact with the workflow rather than hop around the nodes, it is not as useful for altering the workflow layout or adding new content."
* Medicine

Was there anything that stood out to you?

* By going through the different stages you felt like you had some kind of progress (as in "look how far I've come). This could be motivational in study session or when working on a project.
* The nice color and immersive feeling that I'm actually standing on the top of the workflow is quite nice.
* "I was slightly confused by the arrows symbolizing inputs/outputs. I didn't enjoy that the stage information moved with my view as I was trying to read it. I also would have liked to have better markers for different nodes, so that you could see what a node stood for, even if you are not currently on it. I think this would ease my navigation through this workflow, especially if there was a much bigger workflow at hand. VR headsets in general are always super heavy, and make my head hurt a little.
* I was positively surprised by the ease of use and general clarity of the app, however! I really enjoyed that you could pop up information as required, and get summaries for different nodes within the workflow, which was missing in the desktop version. I also really liked the lessened FOV when looking around, as I have struggled with motion sickness in the past when using VR, and this made me feel a lot less sick."
* easy to get into
* It was easy to get disoriented because the nodes all look the same and there is no animation to move between the nodes. That makes it sometimes difficult to grasp which direction one is facing.
* Input and output nodes look similair
* "LIKED: the open sky made me not feel confined to a small space and the walls helped me get an idea of how big or small the workflow is. At the same time, I liked how you could not see the exact NUMBER of stages left, because that would be overhelming. So while getting an overview of the size was good, not being able to know the exact number was also good. Because of this, the POV where you are standing on the platforms is great. I also liked the colour coding of the lines, seems very useful. Because I felt like I was phyisically, myself, moving through the workflow, it felt like the steps I had finished were more rewarding.
* DISLIKED: the controller vibrating each time it passed over a platform, even if they were very far away. the pop-ups with extra information are good but it would be better if their size could be changed because they are very ""in-your-face"""
* see audio reciording
* The workflow looked bigger than with the desktop application. There were more information per node though
* "I liked the view as being part of the workflow, therefore you see the different processes and note intuitively if something changes (e.g. due to different structure or colour).
* The representation might be more suitable for experienced VR users, mainly because of the motion sickness effect."
* designed like a game, highly interractive.
* "liked -- The ability to 'walk' through the workflow. It felt I had more real-estate to walk around and process information.
* disliked -- nausea and dizziness while walking. An initial birds-eye-view of the workflow would have been helpful to track better."
* The different possible paths were visible in different colors. The stages were helpfull in understanding the whole workflow, however, when in the middle of a large stage I would loose my orientation.
* no
* leichte Anwendung und spielerische Darstellung
* I liked the opportunity to move in this area and see all the different stages, The colours and borders between the statges were a bit confusing
* "What I liked was that each node and each stage provided more detailed information on the tasks performed and that input- and output-nodes were displayed in a way that one could understand their purpose.
* What I disliked though was that compared to the monitor or AR version, the user was forced into a position in a 3d space with limited visibility of the entire workflow structure, meaning that only a limited range of nodes around the user was clearly visible and their connections could be grapsed quickly.
* Another thing is that with bigger workflows one could ""get lost"" since there is no clear direction of the data-stream and the workflow still has to be layed out on a 2d-space on the ground of the vr-room."
* Colours

Do you have any additional feedback or suggestions?

* Color coding of input/output nodes so you can see what it is without standing on the field. In general it would be good to be able to see from afar which node did what (at least very roughly), so it's easier to remember.
* With a bit more time and more refinement on the details, this would be a great tool to visualize and present one's work on a fully established workflow and I can even imagine using it to run a short and simple workflow example with test datasets for demostration purposes which would be a really innovative way to present people with my workflow. However in reality when it comes to large population data which is extremely error prone and might commonly take around a week to run on a cluster, this is not the most ideal way to choose for running the workflow.
* "In regards to navigating the workflow: Having a 2d map that you can pop up similar to the stage information would be incredibly helpful, I think. That way, you could maybe teleport to far away nodes or just check in on the progress/summary regarding a different node than the one you are currently on.
* Overall, this workflow was super engaging to be inside of!"
* "a main hub platform above everythign else so that i can teleport there and get, First and overview over the entire wrokflow, that was missing and second an easy way to teleport larger distances to a specific point.
* the input adn output should be clearer fro mthe outside. generaly i was missing the direction of the (work)flow"
* Information about each node should be available easier, ideally somewhere more in the field of view (not requiring to turn the head 90 degrees) and viewable from other nodes.
* Maybe each node should have a text flowing above it, that shows even when far away. Maybe flying would be a great movement method
* "While the concept and the implementation are good, I wonder how many people would go out of their way to turn on and put on a VR headset for this, since the current headsets all come with their setbacks, and many people find them uncomfortable.
* I would suggest a progress bar on the side, which could be turned on and off."
* There was less overview for me. Generally, I like to put some chart which visualizes data flow in papers or documentation for a quick introduction into the data flow
* A top view of the workflow (e.g. to see where you are currently in the process) would be helpful.
* #
* no
* sah sehr cool aus und hat mich sehr an Kindheit erinnert
* I think it can be a well organized and funny way to explain and show a process
* -

keep working