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Proposal

Proposal Background

After researching Virtual Reality (VR) and its efficacy as an educational tool, I've found there to be a lack of measured data providing insight regarding the actual effectiveness of VR as an educational tool. The prior research that I've found doesn't seem to have enough information to support a conclusion, and that's why I believe additional experimental research needs to be done.

The goal of this proposed project is to provide future readers with research that says either yes VR would be better for delivering educational content in classrooms, yes VR would be a great supplemental tool, or no VR would not be a superior educational tool in comparison to traditional textbooks, powerpoints, videos, and animations.

After some discussion, I believe that success in this project would come from having enough information gathered through experimental research and literature surveys to measure the effectiveness of VR as an educational tool.

Proposed Question

Is Virtual Reality an effective educational tool for learning in comparison to traditional tools like textbooks, magazines, powerpoints, images, and videos?

Proposal Risks

A risk we face in this project is the chance of not finding enough evidence to support a conclusion. In this case, we will likely need to summarize our research and provide readers with a clear data set that may be used to further research in the area of VR as an educational tool and immersive educational tools.

Another risk will be due to the short timeline of the project. This will affect our ability to properly recruit participants, developer prototypes and tests, and request and analyze feedback from participants.

Proposed Plan

Research done to form an answer to the question will include literature survey to analyze prior data collected for comparisons to experimental research done. The experimental research will aim to measure data from a study of interactions and test results from participants provided with independent and dependent variables in the form of VR vs non-VR based learning and it's

effectiveness in learning new material. This will then segue into a study to analyze the internal and external validity of such tests and their resultant data.

The data needed will include a literature survey to find prior research that provided measured data on the effectiveness of VR vs non-VR learning. Some of the data we've found has included research on the comparison within the medical field, and this data will provide us with a baseline of information. For the experimental research, we are going to seek data to determine the effectiveness of VR in a more traditional learning sense. This will include the study of general education topics. If we are unable to provide a prototype or find a learning application to use for our tests, then we will consider the focus of our study and potential aim to increase our literature survey for a large dataset.

Task List
- Confirm overall idea with Mentor
- Gather literature
- Read, note, analyze literature conclusion and methodologies
- Write surveys and experimental prototype and baseline test for research
- Recruitment of participants
- Feedback on surveys and prototype
- Administer research experiment
- Collect Data for Analysis
- Final Paper Execution

High Level Calendar
- Week 5 - Confirm with Mentor, Literature gathering and review, Survey/Experiment Design, Status Report to Mentor
- Week 6 - Analyze Literature, Recruitment, Feedback and Updates, Status Report to Mentor. Aim for Milestone #1
- Week 7 - Administer Research and collect data, Status Report to Mentor
- Week 8 - Analyze experimental data and form conclusions, Status Report to Mentor
- Week 9 - Compare and analyze literature survey and experiment data, Status Report to Mentor, Milestone #2
- Week 10 - Form a conclusion rough draft and final paper rough draft. Finalization of the paper. Feedback and critique, Status Report to Mentor, Presentation.
- Week 11 Final project completion

Milestones
- Research Methodology - I would like to organize the literature survey aspect of this project and aim to put together recruitment ideas for experimental research tests. The goal will be to receive feedback as soon as possible on my experiment goals as to help narrow and focus the research in the following week.
- Presentation - For the second milestone, I'd like to take the information gained from the literature survey and compile it into conclusions we can use in comparison to our

experimental data. The idea will be to take our experiment data and use this literature survey data as a baseline to determine the overall effectiveness of VR. During this phase, we will aim share our data and get feedback on the early hypothesis, conclusions, and final deliverable plans.