**Evaluation of the EVE Virtual Reality Research Project Curriculum**

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Last summer, with the help of Professor Stacy Doore, I established the Bowdoin College Virtual Reality Lab, Bowdoin’s first dedicated area for virtual reality (VR) development and research using virtual technologies. Since then, the lab has grown substantially, and over the past year employed students from a variety of majors to contribute to interdisciplinary research projects. While the lab has produced navigable virtual environments, it lacked a standardized means and protocol for conducting human subject research in those environments. This summer, under the mentorship of Professor Stephen Majercik, I researched an avenue for standardized research data collection and analysis in VR environments called the Experiment in Virtual Environments (EVE) framework.

EVE can be integrated into original VR environments and can accurately record such data as position in the environment, head direction, and completion of experiment tasks. During this summer I worked to better understand how these systems are organized, how they work, and how they can be implemented into VR environments. To begin my project, I first went through the process of installing and configuring EVE. I did so with the intention of simplifying the process to be able to apply it to all VR lab computers. After installing EVE, I then spent a large part of my project acquainting myself with the technology to understand exactly how it works and how to manipulate it. I conducted this research while noting improvements that could be made to the software and whether or not it accomplishes our goals of streamlining and standardizing the data collection process. Additionally, our goal is not to use EVE alone but rather in coordination with our existing and future virtual environments, so I also edited aspects of the software to facilitate incorporation into our lab’s projects.

I found that the EVE framework can be a feasible and powerful option for our lab’s research data collection. The incorporation of EVE into virtual environments is largely front-end, meaning after getting EVE set up on lab computers data collection should be automatic, simple, and reliable during research experiment runs. With the manipulations I have made, the software should be easily applicable to our existing and future projects. This makes the EVE framework flexible and easy to use with the full range of our diverse interdisciplinary projects. Perhaps even more important than the streamlining of the data collection is the standardization of the process across lab members and even across labs. One of the major long-term goals of the Bowdoin VR lab is to engage in collaboration with labs that are being set up at other Maine schools such as Colby College, as well as the University of Maine’s VEMI lab. In order to conduct research experiments across different labs, standardization of the data collection process is paramount. Therefore, this framework is a critical step in achieving our goal of collaborating with other labs.

The EVE framework will be applied to our lab projects throughout this academic year. This will allow our lab to delve into true human subject research. It will also allow for a more streamlined process for training lab members in designing and conducting human subject research experiments. Finally, its standardization of research collection across associated labs will allow us to run far larger experiments with far more participants, allowing for larger scale research with more generalizable results. Efficient data collection was a critical step for the growth of our lab and its research capabilities.

**Faculty Mentor: Professor Stephen Majercik**

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