Saurabh Singh

Writing Assignment 3 – Business Proposal and Social Impact

Peer Perspective

**OVERVIEW**

Peer Perspective (PEP) provides instructors and students with a new innovative tool that uses an eye tracker to grow student’s understanding of mathematical concepts. Currently students enrolled in STEM (Science, Technology, Engineering, Math) courses have limited options for getting assistance. Textbooks, tutoring, online resources, and meetings with faculty during office hours are the common choices. Students use these resources with the intention of acquiring a better understanding of the application of conceptual math topics. By having someone explain the steps or watching someone derive a solution, students are expected to learn. However these resources have a two-step process, the first requiring a student to identify areas they struggle with, and then seeking out help. However it’s a common trend for students to get stuck on the first step of the process.

PEP offers a way around that process. Current resources used are static for students. PEP utilizes an eye tracker is a dynamic tool that not only uses the student’s eyes to determine where a student is struggling but provides feedback on how to improve. A student will be presented with a screen that has the conceptual topic explained with the steps for solving the problem on the left side, and the visual presentation of a problem being solved in components. The student then gets asked to click true or false if they believed the components to be correct. Once several students have gone through the slide, and PEP collects the data from the eye tracker. PEP will make comparisons of the group’s data to identify patterns of students who answered correctly versus students who answered incorrectly. Resulting in a slide showing the problem and the concept, listing areas of the problem the student focused heavily on with steps of how to solve the problem using differences from the established patterns. Underlying that students and instructors are able to learn where a student’s application and understanding of concepts falters using a collective group of students.

PEP has standard features of searching for conceptual topics, along with the problem that is available to all users but the results vary depending on the user. An instructor’s interface has access to individual student records, common patterns across students in class, and will be able to search in any conceptual math topics for testing. The student interface allows access to the training/search section, the ability track their progression over the course of a semester and access to the list of visual data provided by the instructor.

**ECONOMIC POTENTIAL**

PEP has a golden opportunity to take over the educational market for math/science. Currently, there are no such tools in the market that use eye trackers in order to teach mathematical concepts to students. Most of the current tools that exist are simple programs that are static in the way they teach concepts to students, usually providing the necessary steps along with a visual representation of solving the problem. These tools do not allow instructors to see the performance of their students beyond checking to see if the answers are correct or if the students are struggling in a particular area.

As a tool PEP is flexible to the degree that with minor adjustments, it can be introduced to K-12 and colleges. In order to gain profit an agreement with an eye tracker company will be established to get eye trackers with a discounted cost. To ensure that we can provide a bundle package or separate software package for institutions who are interested. A portion of the money will go to the eye tracker company as per the agreement for the discounted eye trackers. The bundles include a low yearly license fee that will be charged. There will be a trial version that will be provided for institutions that want to test the tool. If institutions do not have an eye tracker and want to do a trial run, we have rental eye trackers that can be rented for one month for $20.

PEP will penetrate the market by providing different institutions from K-12 to colleges of various degrees with a free bundle package for one year. For future semesters, these institutions will have to pay the standard contract amount. This will allow teachers and professors see how PEP will fit in their classroom and what capabilities PEP has to offer to students. Doing this will show the versatility of PEP and provides the option of expanding across different institutions without them having to make a rash decision.

While PEP has the potential to overtake the market space, there are still several problems that need to be overcome before becoming successful. We need to ensure that PEP is compatible with eye trackers outside of the one we provide in our bundle. If we want constantly improve the pattern recognition and analysis to this current development team working on PEP is small thus we need to expand the size. To reach more institutions our marketing team needs to be further established.

Since there is no real direct competitor to PEP, the market could quickly become saturated with our product. Assuming that our innovative and exciting approach inspires others to see this market in a new light, competitors will likely emerge in the near future. The developers behind PEP have an unbending dedication to staying ahead of emerging technologies and are constantly looking for ways to improve our service with the tech of tomorrow. This ensures that PEP will remain the absolute pinnacle of improving education.

**SOCIAL IMPACT**

PEP with the proper funding and support, has the potential to dramatically change the learning environment in classrooms across the country. Students are often hesitant to seek out help when struggling in a class. Recently the New York Times, National Math & Science Initiative among other sources have all said, “U.S. Students still lag Globally in Math and Science” (Rich, Motoko). Presently, U.S. students are ranked 27th in math and 20th in science in the world (Desliver, Drew). The PEP has the potential to improve how students learn, even explore common trends that are occurring throughout the country in the learning process. These patterns not only give information regarding where the students struggle but can be used to identify flaws in the learning process in classrooms. It provides the necessary components in building a stronger foundation for learning for students across all ages in areas of math and science and help to increase U.S’s ranking. For students who struggle with conceptual math problems it will be a tool that will guide them to the solution and stronger foundation to learn from. PEP is designed to be a flexible tool that is applicable to any field that has conceptual topics and the application of them. In a few short years the rankings of the US will change with the US rising higher back to its previous stature.

Rich, Motoko. “U.S. Students Still Lag Globally in Math and Science, Tests Show” NY Times 11 Dec 2012. http://www.nytimes.com/2012/12/11/education/us-students-still-lag-globally-in-math-and-science-tests-show.html?\_r=0

Desliver, Drew. "U.S. Students Improving – Slowly – in Math and Science, but Still Lagging Internationally." *Pew Research Center RSS*. N.p., 02 Feb. 2015.