ThermoChemistry CS Program Research Introduction

Introduction:

There seems to be a recurring conceptual problem regarding thermal equilibrium, heat transfer, heat capacity, and specific heat capacity in most chemistry/physical sciences classrooms. Regardless of the grade-level and associated-level of difficulty, students and, even teachers to an extent, oftentimes hold misconceptions on these pivotal concepts of ThermoChemistry. This is often boiled down into one problem: the traditional pedagogy of teaching these concepts specific to ThermoChemistry, but is seen throughout most curriculum in the physical sciences. The traditional model of instruction which emphasizes learning definitions, equations, and verification like labs/assignments fails to help students extrapolate these abstract concepts and recognize them in real-world contexts. The solution to this problem is to reinforce inquiry-based learning, allowing students to explore the concepts and make personal connections whilst slowly introducing key definitions, equations, etc.

To achieve this solution, I will be creating a program to help address the confusion faced by many students. The program will focus on visualizing the flow of energy, illustrating the change in mass, temperature, and other variables to aid in visualizing the movement of energy. Also, the ability to manipulate the variables will help students ask “what-if” questions to grow deeper connections and thoughts on the material. The potential to run separate materials at the same time can also help students characterize the changes that occur. Lastly, there will potentially be a module at the end to help clear up common questions and misconceptions.

some of the words used in the first paragraph are very common and I want to make sure that you use words you would use so it has your voice in it.

Thermochemistry, do not need to capitalize C.

I would also add a section of what is the main concepts/equations you will address. This is where you can demonstrate what you have learned about thermochemistry as related to your research. This is also where you can introduce to the readers some of the necessary science background you will address in this research.

So do you think we will be able to have simulation varying M, initial temp and time of heating (relating to final temp and thus delta temp) as well as the unknown problem we discussed? if so, we should remove potential and go for it.