**Personal reflection can serve as feedback. What output from your work in last semester (like; your portfolio, poster, prototype or even your presentation) can be used as a feedback to modify your capstone developing process? \*BLUE**

In stem schools, capstone in general is one of sources that we can apply our knowledge in it. In the last semester, there we some disadvantages that delay the progress and doing well in the whole semester. For example, our presentation skills were not very good, and the time management was not applied at all and that cause fights, delays in tasks and missing many important points to perform. Our lectured sites in our portfolio have sites from .com. and although they were trusted websites, but we prefer this semester to use more trusted and accurate sites.

The most important one this semester we want to focus on is the presentation skills and English. We tried this semester to practice every meeting about language body and our scientific speech about the project. We write down the notes we took on each other and try to improve and manipulate our presentation skills. As we know to persuade and deliver your idea to the judge, you must have a very big background and great search about your scientific base thus we searched in many websites, go to factories, universities and ask professors to make sure our project is doing well. But all this in nothing if you cannot deliver your idea to the Judge and explain it. So, we work on improving our English through talking to each other in English during the meeting and in our free time we watch videos in presentation skills and say the advices in these videos to each other to learn more and help improving our accent.

**You are going to decide a topic for your feedback capstone project. How will you make sure that your topic is good for a feedback capstone project?** **\*BLUE**

Our challenge this semester is to improve industrial base and scientific and technological environment. So, what first is the feedback. A feedback is a mechanism like collecting data, defect sensor and many other forms that focus on the products or a process of all the processes of production to make a layout to improve the defects found in products or the process. The feedback is determined to be true or false by comparing the properties of the products and that of theoretical products that must produce according to the factory labels. So, if properties of products were not the same theoretical properties, then there is a negative feedback on this product. After that we start search about causes during the process of manufacture producing these defects.

Then we start looking for solutions solving these problems. And after applying our modifications on the process, if the feedback was positive and the properties matches the required in case that our project do not affect the environment badly, then, our feedback is correct and need to be applicable. For example, a factory producing juice and when we took feedback on this juice, we found that it tastes acidic and when measuring its PH value, we found that it was higher than the required and theoretical one. So, we take a feedback on the process and found that the machine has an error that cause this defect. So, we solve this problem with putting a sensor that detect if there is an extra amount of chemicals added to the juice in manufacturing process. After taking a feedback found we matched the required properties.

**In chemistry you discussed the electrolytic purification of copper. How would you use an output from this process to feedback and make a change to the process conditions to improve the results? Be sure to describe the output information you are using and the process you might change.** **\*BLUE**

One of the important industries in the purification of cupper. In the electrolysis of copper, we have solution copper sulphate (CuSO4) which is our electrolyte, two electrodes and source of electricity. As we connect the electrodes to electricity and passes through the solution and oxidation reduction reaction begins. As CuSO4 === (Cu2+) + SO4(-2), and H2O ===(H+) + (OH-). At the anode (impurity copper) the oxidation of Zn & gt; Fe & gt; Cu & gt; Ag & gt; OH &gt; Au. Zn ===Zn2+. Cu=== Cu2+. And after oxidation occurs Ag, Au fall as particles at the anode and participate. And at the cathode (Pure Copper) the reduction of Cu2+& gt; H+& gt; Fe2+& gt; Zn2+. (Cu2+) + (2e-) === Cu. And thus, the copper purified and forms. And the negative feedback may be taken on the process is that its high rating of electricity consumption. So, we need to modify it to reduce the electricity consumed. For example, we could use a catalyze to speed up the reaction and make it consume less electricity and, in that way, we help in improving the process of purifications of copper.

**In English you have been learning to read, understand and take notes/summarize the main points and significant details of long and detailed texts. Your capstone challenge document includes a description of systems and feedback. Write a paragraph on the meaning of feedback designed to make sense to a student that is twelve years old. Include an example of the meaning you chose. \*BLUE**

Have you heard about defects in any product manufacturing that lead to health problems and big losses to the producer or the company? The problem this semester is trying to solve this defect. And the only way to do this is through taking a feedback. A feedback is a mechanism like collecting data, defect sensor and many other forms that focus on the products or a process of all the processes of production to make a layout to improve the defects found in products or the process. We need to improve the industrial base. For example, if a factory producing milk after some short days the milk spoil. And when taking a feedback, the process and examining the product we found that it has many bacteria and microbes that cause it to spoil and cause very harm disease if a human drink it. And to solve this problem a sensor using X-rays was used. The milk was examined by this sensor and according to differences in the ray’s frequency we conclude that there were microbes. So, we made the company made some modifications to solve this problem.