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1. How would you define learning through inquiry? I would define learning through inquiry as an ongoing investigative process. Inquiry based learning follows a creative thought process beginning first with a question and followed by a series of steps relating to research, experiments, and critical thinking. Students use evidence to answer questions created from observations and interactions with their environment. The most important aspect of scientific inquiry is continuous discovery and further learning. To inquire is to seek further knowledge and understanding. Within science, total understanding is not a reality, so learning through inquiry is never over. Scientific inquiry is a cyclical process that leads to new questions and ideas. In this way, students can conduct an investigation, collect collaborative data, determine a meaningful explanation or interpretation of their findings, and finally defend their conclusions.
2. What skills do students need to have in order to do inquiry? Students need to be able to formulate an effective question. They also need to be able to communicate through recording data, and in collaboration with other students and with their teacher. Students also learn how to organize and create models to reflect their findings. Students should also have some content background which can be taught by the teacher. The content provides structure for their predictions, observations, and classifying skills.
3. What skills do teachers need to have in order to teach using inquiry? Teachers need to first have a very thorough understanding of the content of the course. Only then can they teach their students the content, so that way they are able to scaffold and prompt the students in their exploration. Teachers must also be able to plan inquiry experiments with short term and long term goals, allowing for adequate inquiry time and reflection. Teachers should also know the ins and outs of developing question strategies, writing out inquiry programs, and lesson plans for their students. Organization is absolutely key when creating structure for the inquiry process.
4. Describe a classroom environment conducive to inquiry. They will also need access to appropriate resources, tools, and conducive learning environments to create and perform meaningful experiments. This means appropriate measuring and recording devices, outdoor accessibility, and updated technology. While these resources are helpful to achieving effective scientific exploration, students also need a supportive community. The supportive community includes the scientific community itself, parents, family members, and teachers. In this way, students have full permission to discover new ideas.
5. What do you see as the advantage of teaching for inquiry? A special attribute of learning through inquiry is its ability to cross over to other sectors of learning. In other words, scientific inquiry enables literary, mathematical, and scientific thought processes to develop. Scientific inquiry teaches students to problem solve individually and in groups. These are very valuable skills, to be able to individually process and relate information and to then communicate effectively with classmates and teachers. This investigative collaboration correlates strongly with all learning throughout the rest of their educational career. If the students can develop effective critical thinking skills through scientific inquiry, they can go on to apply the same principles to other sectors of their education.
6. What do you see as the disadvantages of teaching for inquiry? I have a very difficult time identifying any disadvantages of teaching for inquiry. I think that the skills gained from inquiry learning are applicable throughout the rest of the child’s academic career.
7. Do you have any other thoughts or concerns about teaching for inquiry? The only concern that I have for teaching inquiry would be assessment. Sometimes, there are concrete answers that students are prompted to find; however, scientific inquiry may lead the students in a different direction. While this is a wonderful learning process for the students, there are often scholastic and administrative pressures which demand results and concrete assessments. This can be difficult to do when assessing the process and not the result. Inquiry exploration is more subjective than a true or false worksheet about the rock cycle.