Simulations are instructional scenarios where the learner is placed during a "world" defined by the teacher. They represent a reality within which students interact. The teacher controls the parameters of this "world" and uses it to realize the specified instructional results. Students experience the truth of the scenario and gather meaning from it. A simulation is a form of experiential learning. It is a strategy that fits well with the principles of Student-Centred and constructivist learning and teaching (UNSW Sydney Teaching, 2018). According to Sapp (2018), there are six (6), reasons why science teachers should use simulations in teaching. Here are some reasons why science teachers should use simulations.

1. **Simulations allow for more lab experiences.** With virtual simulations, students get to see and interact with concepts outside the realm of a standard lab.

2. **Simulations make it easy for every student to participate.** In one-to-one classrooms, simulations let each student practice and interact with scientific skills and ideas; this enables for multiple and varied data sets to be collected, analyzed, and shared in collaborative groups.

3. **Simulations are interactive, so students retain what they’ve learned.** Modern simulations are more than click-and-play applications; some allow for a full and complex laboratory experience mathematically designed to function as a real laboratory. Adding simulations to your science curriculum can enhance students’ skill development as well as their conceptual knowledge of science.

4. **Simulations can provide immediate feedback.** Raw data, successful completion notifications, failed attempts, or even culminating reports are possible with today’s innovative simulations, thus allowing students to correct misconceptions and teachers to intervene in the midst of the learning process.
5. **Simulations are readily available.** Easy availability of virtual simulated labs allows students 24/7 access, providing a great venue for making up missed labs, flipped and blended learning, or repetition of labs without concerns of limited supplies and consumables.

6. **Simulations are safe and cost-effective.** When students are occupied in virtual labs, safety is no longer a concern. Teachers can provide assistance to individual students instead of having to continually monitor adherence to lab procedures and safety.

In the study of Widiyatmoko (2018), suggests that simulation may play important roles in the science classroom and science instruction. Simulation gives learners opportunity to watch a true world experience, and that they can interact with it. Through using simulations, learners can experimentally get an understanding of difficult to grasp concepts in science learning.

---

**References:**

