

Technology in Education

Technology is the application of science to commercial, educational, health-related, military, or industrial objectives including computers, calculators, communication devices (telephone, video-conference devices), or other entities and methodologies used to achieve those objectives. Thus, technology can be broader than, and not synonymous with, the use of computers.

In an educational setting, a teacher may address technology in the following ways:

- **Actual use of technology**
The teacher and/or the students use the technology in a “hands on” setting. For example, the teacher may use a graphing calculator or multi-media in developing a concept or skill or uses a telephone interview with someone in the community as part of the lesson. Students use computers in their learning or students use some new advancement in glazing techniques for their art project. Students use a video or digital camera in physical education to analyze their skills.
- **Use of products of technology**
The teacher and students use products of technology in instruction and learning. Products may include such things as information gathered from the Internet, computer print-outs, results of grammar checks and readability levels for written material, results of a criminology report using DNA testing, imaging results for analyzing a motor skill, etc.
- **Simulation of technology**
The teacher and students simulate the technology in instruction and learning. For example, the teacher may use a model of a computer for showing how information is inputted, processed, and outputted to the user. Students may take on the role of a computer and enact how processing works using binary numbers. The teacher may model how a satellite is used in communication.
- **Discussion/activities around technology**
Classroom activities and discussions focus on technological concepts, principles, impact, and applications. For example, as part of an assignment, students may discuss or write about ways in which technology has affected their lives.
- **Teaching the technology**
The teacher teaches the technology as subject matter (e.g., computer science class, programming class). In this case, the technology is treated as any other subject (such as English, mathematics, language arts, etc.) and, for PEPE purposes, the technology is not a focus of evaluation.

In the PEPE teacher evaluation system, evaluators will focus on how a teacher uses or promotes technology or its products in instruction and learning. “Uses” means that the technology or products of technology are integrated into the instructional process. It is not simply a practice

tool or a referent without purpose. The use of a particular technological device or product of technology must be appropriate to the lesson content. The use or promotion of technology may be by the teacher when he/she is developing the lesson or conducting other teacher activities related to instruction/student learning or by students engaged in learning.

Technology in the PEPE system can be viewed from three perspectives:

1) Technology Assisted Instruction

- the teacher uses the technology or the products of the technology to present information or provide examples and illustrations;
- students use the technology or the products of the technology in responding to the teacher's instruction.

2) Instruction About Technology

- technological concepts, principles, impact, and applications are the focus of classroom activities and discussions. For example, in a history class the teacher and students may conduct activities and discussions around the impact differing technologies had on the Afghanistan conflict vs. World War II, and more generally, the teacher considers as part of his/her lessons the impact of technology. A lesson may have activities and discussions on how the Mars Rover may change scientific thinking, and more generally, the teacher considers applications of technology in his/her lessons. Discussion activities might include the social impact of technology as well as the consequences of misusing the technology. The teacher may simulate a process to illustrate a technological concept.

3) Technology as the Medium or Object of Instruction

- the technology is the means of instruction; e.g. students using the Internet to gather information from partner students in another school (teacher is directing), students being shown how to use PowerPoint for use in presentations.

Note: The technology being taught as a subject or through a class (e.g., basic programming class, computer science class) is not considered as “use of technology” for PEPE evaluation purposes unless the teachers uses technology as a tool in teaching the class.