Chapter 10

Technology Integration (Level 5.0)

Definition and Historical Origins

As this critical level of the taxonomy, technology integration provides for “teaching with technology.” In the previous chapter, infused technologies centered on learning. At level 5.0, the focus is on “creating new technology-based materials by combining otherwise disparate technologies to teach.”
Within an effective educational setting, technology becomes an enabling tool for teaching and takes many forms at this level of the taxonomy. A prime function of integrated technologies is to provide learners with knowledge of specific subject areas. Traditionally, students learn from technologies used as delivery tools to communicate messages just as they learn from teachers. But at this level of the taxonomy, learners will create “new technology-based materials, combining otherwise disparate technologies to teach.”

Likewise, integrated technology tools promote meaningful learning. They engage learners in the construction of new knowledge and the expansion of personal understanding. Computer-based tools such as databases, spreadsheets, hypermedia construction, networks, the Internet, and online learning environments serve as extensions of the mind. Learners enter into an intellectual partnership with technology by creating their own instructional materials.

Lastly, a key purpose of integrated technology is to enhance professional productivity. Technology assists administrators with a variety of responsibilities such as keeping student records, scheduling classes, creating school budgets, organizing library cataloguing and circulation, improving communication and collaboration between educators, and providing tools such as computerized grade books, templates and test/worksheet generators.

It has been said that meaningful learning occurs whenever technologies actively engage the learner. Technologies aptly integrated into the curriculum achieve conversation—not reception, articulation—not repetition, and collaboration—not competition. The applicable characteristics of technology integration are introduced in this chapter.

**Standards for Technology Integration**

The ISTE NETS*S technology standards for students is noticeably weak in its campaign for student-initiated technology integration. But, they do advocate for “students’ use of productivity tools to … produce creative works” (ISTE, 2003). Similarly, very few instances were found encouraging students to create their own instructional materials based on technology-enhanced resources. When these enticements were uncovered, they occurred mostly at the top levels of the K-12 curriculum. Yet, ask any classroom teacher (at least from grades 5 and up) and they will probably tell you that it is the younger student who is most likely to use technology to create new instructional materials. The skills