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Chapter III

Using Technology for Learning, Teaching, and Designing the Curriculum

ISTE NETS_T, II. Planning and designing learning environments and experiences

Teachers plan and design effective learning environments and experiences supported by technology.

ISTE NETS_T, III. Teaching, learning, and the curriculum

Teachers implement curriculum plans that include methods and strategies for applying technology to maximize student learning.

ISTE NETS_T, IV. Assessment and evaluation

Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies.

Chapter objective: The teacher knows how to plan, organize, deliver, and evaluate instruction that effectively utilizes current technology for teaching.

Using computers to increase classroom resources is both an impetus for and outcome of transforming the role of the teacher in the classroom. Once known as the sole disseminator of information, teachers now identify themselves as facilitators whose roles are to motivate students and engage them in learning and reflection. Most states expect technology applications teachers to demonstrate knowledge and skills in the following areas:

- to plan and implement instruction that allows students to use technology applications in problem-solving and decision-making situations.
- to plan applications-based technology lessons using a range of instructional strategies for individuals and small/whole groups.
- to develop and facilitate collaborative tasks and teamwork among group members.
- to perform administrative tasks.
- to use a variety of instructional strategies to ensure students' reading comprehension.
- to help students learn how to locate, retrieve, analyze, evaluate, communicate, and retain content-related information.
- to evaluate student projects and electronic portfolios using formal and informal assessment methods.
- to use assessment results for gauging student progress and adjusting instruction.

Maximizing Student Achievement

Recently several researchers have suggested that technology serves as a catalyst for change in the content areas and for enhancing students' ability to learn specific content. Statham and Torell (1996) have identified the essential educational conditions that are necessary to maximize student achievement with technology:

- **Better access to technology:** In order to become an integral part of students' learning, computers need to be available for individual student use during extended periods of time. Currently, student access to computers is estimated to be less than 4% of total instructional time. The success of technology depends on having significant critical access to hardware and applications that are appropriate to the learning expectations of the activity. Electrical and communication systems must be updated in order to maximize the benefits of computer technology. Best practice indicates that one computer for every