Learning Styles and Technology

As we consider the future and how active learning, learning communities, and technology converge to create new school environments, we must consider a variety of approaches to learning. Technology can impact all forms of learning. The following examples show how many different strategies can be enhanced by the effective use of technology.

Active Learning: Active learning is a strategy for education in which students take personal responsibility for how and what they learn.

What students do….

When students are active learners, they become involved in learning rather than being audiences for instruction. Active learners create and produce as they learn. They're engaged in their work, try out new ideas, and gain understanding by constructing their knowledge from the world around them rather than acquiring it through memorization. On the journey of learning, active learners are more like pilots than like passengers.

What teachers do…

Teachers create an active learning situation by assigning a complex topic and helping the students to identify the resources they need to investigate it. Then the students, rather than the teacher, explore and organize the information to be learned. As the students work with the information and identify and interpret the main ideas, the teacher facilitates their learning.

Some examples of active learning….

- Research projects, in which students – performing like real scientists – create a hypothesis and then collect information to test it.
- Presentations in which students demonstrate their knowledge in front of peers and teachers
- School-community projects, in which students learn in real-life situations.

How technology enhances active learning….

- Students can use powerful tools, such as word processors, music synthesizers, video cameras, audio recorders, and scanners to make professional-quality products.
- Students can use computer simulations when doing the actual activity is too dangerous, time-consuming, expensive – or simply impossible.
- Students can use computers to gain access to and manipulate vast amounts of information stored on video and compact discs.
- Students can use telecommunications to find real audiences for their work.
- Students can use computer-based tools to demonstrate their problem-solving and higher-order thinking skills interactively.

Cooperative Learning..... Cooperative learning is a strategy for education in which students work in groups to achieve shared goals.

What students do….

When students are cooperative learners, they work together – rather than separately – to learn information and skills, to formulate concepts, to build products, or to refine ideas. The model is similar to the "quality circle" concept oftentimes used in business and industry. Cooperative learning teams often include members of different abilities, interests, and backgrounds.

What teachers do….

Teachers create cooperative learning environments by establishing groups, helping students to determine group goals, and teaching students cooperative learning skills. Principles of cooperative learning include distributed leadership (group members have different roles within the group), heterogeneous interdependence (all students sink or swim together), positive acquisition (everybody needs to contribute), and group autonomy (the group develops its own unique process).

Some examples of cooperative learning….

- Peer and cross-age tutoring, in which students teach concepts or skills they have mastered to other students or adults
- Collaborative writing, in which elementary students write books together or older students brainstorm together and also comment on one another's work as it progresses.
- Peer collaboration, in which student teams analyze complex issues, such on poverty, from a variety of perspectives.

How technology enhances cooperative learning…..

- Students can create documents together, because the computer makes it easy for them to share and display data, comment on drafts, keep records of other's comments, and integrate the comments into current drafts.
- Students can undertake complex group projects and have the computer handle the project management.
- Students can use telecommunications to work together, even when they're separated geographically or can't get together at the same time.
- Students can pool their strengths – such as skills in making video clips, scanning images, digitizing sound, creating animations, and writing text – to produce multimedia presentations.

Interdisciplinary Learning……Interdisciplinary learning is a strategy for tying together traditionally separated school subjects.

What students do……

When students explore concepts and learn skills through interdisciplinary units or projects, their learning is connected and they naturally integrate ideas from many content areas. Students working on interdisciplinary projects develop a more complete understanding of complex issues and real-world problems than they would from a single-subject approach.

What teachers do…..

Teachers often work together to create the environment for interdisciplinary learning. At the high school level, teachers from different departments may collaborate on interdisciplinary projects of classes. For example, social students and science teachers or English and math teachers may team-teach courses. At the elementary level, teachers may take a thematic approach, which is inherently interdisciplinary. Individual classes, groups of classes, or the entire school may do projects based on specific themes. And, at any level, teachers may make instruction interdisciplinary by focusing two or more subject areas on a real-world problem.

Some examples of interdisciplinary learning…..

- Writing across the curriculum, in which students report on a biology experiment, a geometry proof, or a music experience – and the writing is critiqued for style as well as content.
- Interdepartmental collaboration, in which, for example, economics students create marketing plans for products made by art students.
- Thematic projects – such as Earth Day of the American family – in which students connect what they learn in several content areas to an overall theme.
- Community based research projects, in which students address political, financial, media, and environmental concerns about local issues such a redevelopment or toxic waste.

How technology enhances interdisciplinary learning……

- Students can collect information from different content areas in its "native" form – charts, pictures, text, or numbers – and create integrated product or multimedia presentation.
- Students can use computers to work with mathematical models or social, economic, or physical phenomena in the real world.
- Students can use the same powerful tools, such as spreadsheets, and the same analytical way of thinking, to examine data and pose hypotheses in a variety of disciplines.

<u>Individualized Learning</u>……Individualized learning is a strategy for meeting the diverse needs of learning styles of students.

What students do….

Students learn in different ways, at different speeds, and at different times. Some students learn easily by reading, some by listening and watching, and some by hands-on experience. Some students may be visual learners in one area and auditory in another. In addition, developmental issues and preferences affect how – and how well – students learn.

Student from non-English –language backgrounds acquire greater competence in English by working with language in many modalities. Students with learning disabilities may need to work with information in specific ways, and physically disabled students may need adaptive devices to have the same learning experiences as their classmates.

What teachers do……

When teacher provide for diverse needs and learning styles, they vary the subject matter as well as the tools and materials their students use. Teachers increase opportunities for learning by using a number of media to present ideas and information and by encouraging students to construct and express knowledge in a variety of ways.

Some examples of individualized learning….

- Learning activities in several modalities, in which students access and interact with information by reading, watching, listening, manipulating, writing, discussing and experimenting.
- Multimedia research projects, in which students college and analyze data from photos, text, video, and audio.
- Alternative forms of assessments, in which students present oral reports, group projects, and demonstrations to exhibit what they've learned.

How technology enhances individualized learning…..

- Students can use computers to transform data from numbers to graphs or to translate words form one language to another.
- Students can use computer-based tools to develop their visual, kinesthetic, aural, and oral skills.
- Students can interact with the technology at their own pace, and review when necessary, to ensure understanding or check memory.
- Students with physical disabilities can use computers with adaptive devices so that they can participate fully with their classmates.

Teaching Today…….. Teacher professionalism is the sum of what teachers do – both inside and outside the classroom – to orchestrate student learning, contribute to the art and craft of teaching, and influence educational policy-making.

What teachers do…..

Teachers guide and facilitate learning based on their knowledge of both the content area and the craft of teaching. In the classroom, they create meaningful learning experiences, and they encourage students to take responsibility for their own learning. Classroom teachers also take on the roles of coach, problem poser, expert, facilitator, manager and clinician. Beyond the classroom, teachers share their knowledge and expertise with colleagues. They also collaborate with administrators and parents in making school and district policy decisions. And, in general,

teachers exemplify learning by keeping abreast of school-based research, new methods of diagnosing student needs, and emerging knowledge in their subject areas.

What the educational community does…..

Administrators, the school board, and community members (especially parents) recognize the teacher as the individual best able to design and assess the day-to-day taught curriculum that is based on the district wide written curriculum guides. They acknowledge the teachers expertise in the subject matter and in the teaching and learning process. They regularly consult with the teacher on decisions affecting students and school and district policies. It is the responsibility of the administrators and the school board to plan budgets that include funding for the continued professional development of teachers.

Some examples of teacher professionalism…..

- Lesson and unit development, in which teacher plan and customize lessons to meet the needs of individual students.
- Coaching, in which teachers act as consultants to student learners.
- Mentoring, in which experienced teachers help beginning teachers get started in the profession.
- Collegiality, in which teachers work together to plan curricula, solve school problems, or develop district plans and policies.
- Leadership, in which teachers conduct workshops or conference sessions for other educators.
- Professional development, in which teacher hone their skills and knowledge by participating in professional associations, taking graduate courses, reading books and articles, and consulting with experts.

How technology enhances teacher professionalism….

- Teachers can use technology to overcome the barriers of time and distance to collaborate on professional issues.
- Teachers can retrieve information from local and online data bases to plan lessons.
- Teachers can use computer-based tools to collect, store, and exchange information for efficient decision making.
- Teachers can use desktop publishing to create instructional materials.
- Teachers can use computer-based multimedia to make more effective classroom presentations.
- Teachers can use computers to individualize learning and empower students to become active learners, interdisciplinary learners, and cooperative learners.