USING EDUCATIONAL TECHNOLOGY TO INCREASE STUDENT ACHIEVEMENT IN A STANDARDS BASED ENVIRONMENT

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During the mid '80s, American school systems purchased computers for administrative and teacher use. Student computer use was limited to the occasional lab setting. Typically, procurement was predicated upon best pricing or software bundled with promotional items. As computers arrived in classrooms, educators with computer knowledge began to use the systems, and software was purchased based upon individual preference. During this time period, academic accountability and standard curricula had not attained priority status among the educational issues of the day. Teachers were free to modify instruction to teach the information they deemed important using instructional strategies the teachers felt were correct. This environment led to the evolution of technology plans driven by the hardware purchases with software and teacher training added on as after-thoughts.

The classroom of the '90s is a very different place. State mandated standards-based curriculum and testing programs are the motivating force in all educational decisions. The goal of a standards-based curriculum is to produce high levels of student achievement. Therefore, any method of instruction selected within a school must support state testing programs and lead to higher levels of student success in standardized testing programs. Much information included on standardized tests relies upon rote memorization of dates, places in history and essential facts and algorithms. How has technology continued to remain an important focus for schools in this rigid environment? With increased technology funding purchasing expensive hardware and software, the selection and use of both within a standards-based curriculum must show positive influence on achievement and test scores.

This end result has been paramount in the evolution of technology plans developed for schools. Rather than purchasing equipment and determining its use later, current technology plans focus first on curriculum and student testing. Software is selected to support the curriculum, hardware and networks are designed to deliver software and Internet services, and most importantly, extensive staff development is provided on a continual basis.

Heterogeneous classrooms are today defined not only by the students' cognitive abilities but also by their multiple learning styles. As learning occurs, students need to express and apply the learning in various ways. The current generation of students has grown up learning electronically

with a hands-on approach to many activities. The information explosion has caused society to rely upon electronic access to data. Additionally, the preparation of a 21st century workforce requires the technologically literate graduate. Even the conventional teacher preparatory programs and certifications require teachers to provide evidence of mastery of technology skills.

Just as state curriculum has mandated a standard knowledge set of expectations for students, this concept applies to the configuration of hardware and software in our schools. Equity of access is no longer an issue, development of lessons using software and Internet sites can be shared throughout the division, and technical support for the equipment and software becomes less problematic for information technology services personnel. Continuous professional development for administrators and teachers based upon initial assessment of application skill levels evolves to true integration of these tools into daily instruction. This instruction reflects the various differentiation strategies necessary to create an environment for positive achievement for all students.

Both lab settings and computers in the classroom allow for technology-enhanced instruction and assessment and management of student progress via computer. Teachers then provide appropriate interventions promoting greater retention and application of knowledge. As students receive report cards from standardized testing programs, technology is used for remediation in conjunction with other instructional strategies. Testing data and other information about schools is easily accessible by parents in the community to school and division web sites. These sites influence the relocation decisions of parents as they select a school and community based on their perception of their school via this Internet. Today's parents enter the virtual classroom through electronic learning sites provided for classroom and home use.

Assessment has focused on student achievement but is actually multi-faceted in the world of technology. Technology skills for teachers are tied to teacher pre-service and in-service programs. Educators must show evidence of mastery of basic computer skills outlined by the state. When student test data and teacher computer competencies require it, technology plan revisions are based upon documented outcomes and technology plans are modified to support the needs of staff and students.

Instructional technology is criticized by politicians, community members and some educational experts as being expensive while showing little effect on student achievement. However, we have found that student achievement is enhanced while we also teach basic skills such as word processing. Technology skills are not taught in isolation, promoting inclusion in the classroom rather than the lab setting. Schools today meet

student needs in standardized testing programs but more importantly, by changing instruction, prepare students for university education and the work force. Changing the face of the technologically infused classroom models the expectation of business and industry in our nation.