

STUDENT LEARNING WITH AND ABOUT TECHNOLOGY

Introduction

The West Des Moines Community School District is committed to providing the best possible education to all students. To that end, the district continually addresses the need for change, both in what students learn and in how they are to learn. With the dramatic and dynamic developments in educational technology that mark the world in which we live, the district accepts the challenge of addressing the new imperatives for students to become technologically literate and for them to use technology effectively. Students are asked to not only learn of technology's power and importance, but to apply their skills to the business of learning. The application of technology to their learning will provide authentic applications which will carry into their post secondary experiences and careers. Therefore, technology and information literacy for both staff and students has become an imperative.

Technology is a positive force in the classroom when teachers use it well. Technology training opportunities help staff become more aware of how the instructional use of technology can enhance the delivery of curriculum content and actively engage students in thinking and learning. The students themselves are powerful resources in innovative uses of technology and will be encouraged to help each other as well as their teachers.

Statement of Philosophy for Instructional Technology

The West Des Moines Community School District's philosophy for computer and technology use is driven by the desire to integrate the computer into the student's educational experiences. The district will provide an educational climate which will encourage the appropriate use of computers and other technologies by students and staff in all instructional areas. Staff will assist students in acquiring the ever evolving skills to use technology ethically and effectively. The district will endeavor to keep abreast of advances in technology and the impact of those technologies on student needs.

It is significant to note the philosophy statement includes both students and staff.

- Teachers will use technology as an integral part of instruction.
- Students will make use of technology to access, manipulate and communicate information.
- Training opportunities will be provided to assist teachers to successfully use and integrate information technologies into instruction.
- Access to technology will be equitable throughout the district.

Curriculum Strands and Goals

In conjunction with the statement of philosophy, the following strands and goals focus on learning technologies in a *just in time* model and weaving the use of technology into the daily activity of learning.

Technology for Solving Problems

The student will view technology as a tool to aid in solving problems. **Problem solving** is the means by which a student uses previously acquired knowledge, skill and understanding to satisfy the demands of an unfamiliar situation. Students will actively seek to construct meaning from the sources of information they encounter and will create products that shape and communicate that meaning effectively. Students will apply strategies for solving problems and use appropriate tools for learning, collaborating and communicating.

The student will have an understanding of the fundamental operations typical in most application programs.

The student will be able to select appropriate application software to aid him/her in solving a problem.

The student will gain the skills necessary to retrieve and organize information from electronic databases and information service systems whether they be local or Internet-based.

The student will have the ability to manipulate text and graphics with a word processor or other productivity tool to produce publications and other creative works.

The student will have the ability to produce multimedia presentations which assist in communicating information.

The student will have the ability to organize information by manipulating data within an existing database or spreadsheet or by building an original database or spreadsheet.

The student will have a rudimentary understanding of the computer science and computer programming as related to the use of programs and the problem solving process.

Technological and Information Literacy

The student will become a literate user of technology in our information and communication age society. **Technological and information literacy** is a general knowledge of the abilities, limitations, and operations of different technologies as well as technology's role in society. Knowing how to obtain and use information properly is increasingly essential both for the students' success in school and for their personal and professional development as socially responsible adults. Students will gain the understanding needed to learn and evaluate new applications as they relate to their personal endeavors.

The student will access information efficiently and effectively.

The student will be aware of the ethical implications when using a computer or other technology resources.

The student will be practice critical thinking skills in evaluating different resources, especially Internet resources.

The student will be aware of the different career opportunities associated with computers and other technologies.

The student will become familiar with the historical development of technology and its impact on society.

The student will be able to identify the major components of a multi-media computer, a computer network, and understand the functions of those components.

The student will learn the proper care of a computer's hardware components.

The student will properly operate and apply related technologies, such as digital cameras, scanners, video technologies, and audio systems.

Most of the technology goals are met by infusing the current curriculum with activities which allow students to use the technology in their work. An example is word processing of papers written for a class. To raise student technology awareness, discussions of the advantages of using technology for given tasks can be held in the context of the assignment.

Student Expectations (ISTE NETS)

Starting back in 2000-01 school year, staff began engaging in activities to increase support for the themes used by the National Educational Technology Standards (NETS) from the International Society for Technology in Education (ISTE).

The ISTE student standards are as follows:

ISTE NETS for Students

The technology foundation standards for students are divided into six broad categories. Standards within each category are to be introduced, reinforced, and mastered by students. These categories provide a framework for linking performance indicators within the Profiles for Technology Literate Students to the standards. Teachers can use these standards and profiles as guidelines for planning technology-based activities in which students achieve success in learning, communication, and life skills.

Technology Foundation Standards for Students

Basic operations and concepts

- Students demonstrate a sound understanding of the nature and operation of technology systems.
- Students are proficient in the use of technology.

Social, ethical, and human issues

- Students understand the ethical, cultural, and societal issues related to technology.
- Students practice responsible use of technology systems, information, and software.
- Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

Technology productivity tools

- Students use technology tools to enhance learning, increase productivity, and promote creativity.
- Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.

Technology communications tools

- Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
- Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Technology research tools

- Students use technology to locate, evaluate, and collect information from a variety of sources.
- Students use technology tools to process data and report results.
- Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.

Technology problem-solving and decision-making tools

- Students use technology resources for solving problems and making informed decisions.
- Students employ technology in the development of strategies for solving problems in the real world.

These parallel district themes. A varied group of teachers will assist in providing model lessons which tie these standards to national and West Des Moines standards and benchmarks. The goal is to have an electronic resource of lesson examples. Each activity or lesson will reference both district and NETS standards. This follows the district philosophy of not teaching technology skills in isolation of the learning already being done by the students.

Keyboarding Instruction

The effective use of a computer demands the ability of a user to enter data in an efficient manner. Therefore, introductory keyboarding instruction will be offered to all students per the following schedule.

3rd grade: 15 minutes/day for 15 days

4th grade: 15 minutes/day for 10 days (reinforcement)

5th grade: 15 minutes/day for 10 days (reinforcement)

Reinforcement of keyboarding skills is provided in the junior high consumer education program required of all seventh grade students.

The expected result of keyboard instruction would be that the student will acquire keyboard entry skills which allows him/her to process data at a speed similar to the ability to print or write.

The high school program offers keyboarding courses which focus on generally accepted formats for communications, such as business and personal letters and research writing. Students will be encouraged to take this instruction to increase the effectiveness and efficiency of their communications and to learn standards for typical documents.