

Chapter 2: Goal 3 Standards as Common Processes and Abilities for the Content Areas



Chapter Highlights

- ◆ Goal 3 Standards
- ◆ Integrating Goal 3 Standards into Day-to-Day Instruction
- ◆ Using the Goal 3 Standards
- ◆ Incorporating Goal 3 Standards into Instruction and Assessment

Although one of the purposes of this document is to identify what a student should know and be able to do in applied technology,—that is, the specific subject area standards and benchmarks articulated in Chapter 3 of this document—it is important to realize that the applied technology standards and benchmarks do not exist in isolation. There are some very general processes and abilities that cut across all subject areas: the mental processes involved in locating information, organizing that information, and then using it to solve some problem or produce a product. Similarly, the mental processes involved in identifying the resources necessary for accomplishing a goal, setting milestones, and then managing those resources are common across subject areas. They are also important to success in home, community, and work world roles.

These practical important transdisciplinary processes and abilities have been identified in the document *A System of School Improvement and Accountability*. In Goal 3 Student Performance of the eight goals that are the foundations for school reform in Florida, it states:

Students successfully compete at the highest levels nationally and internationally and are prepared to make well-reasoned, thoughtful, and healthy lifelong decisions.

Eleven standards are identified within Goal 3. Of these, ten deal specifically with student outcomes. It is important to realize that the term *standard* is used somewhat differently in *this* chapter than it is in Chapter 3. In Goal 3, a standard is a general category of processes and abilities that can be used and are important to all subject areas and the world of work. The

standards described in Chapter 3 of this document refer to the knowledge and skills specific to applied technology.

The Goal 3 Standards have been adopted by the State Board of Education and represent part of what the state will hold schools accountable for teaching.

GOAL 3 STANDARDS

- Standard 1** *Information Managers*
- Standard 2** *Effective Communicators*
- Standard 3** *Numeric Problem Solvers*
- Standard 4** *Creative and Critical Thinkers*
- Standard 5** *Responsible and Ethical Workers*
- Standard 6** *Resource Managers*
- Standard 7** *Systems Managers*
- Standard 8** *Cooperative Workers*
- Standard 9** *Effective Leaders*
- Standard 10** *Multiculturally Sensitive Citizens*
- Standard 11** *Parental Involvement*

In each subject area in the state of Florida, students will be expected to hone their skills and abilities as information managers, effective communicators, and so on. Indeed, Florida's public schools are accountable to parents, taxpayers and business people for students ability to apply the first ten standards of Goal 3. Schools are expected to conduct assessments which will, along with external assessments conducted by the state on the first four standards, show that students are making progress toward Goal 3. This chapter describes some ways in which these eleven general standards can be addressed in applied technology.

Integrating Goal 3 Standards into Day-To-Day Instruction

The Goal 3 standards do not exist in isolation. Given their nature, they should be an integral part of daily classroom instruction and assessment. To a great extent, the Goal 3 standards can be thought of as generic processes and abilities those help students apply specific applied technology content knowledge in real-world situations. As students learn applied

technology content, they apply their knowledge using the processes and abilities involved in being an information manager, effective communicator, numeric problem solver, and so on.

Teachers should directly address these processes and abilities and even call them by name. The specifics of what should be taught regarding each of these processes is presented in the next section. It is important that the Goal 3 processes and abilities should become a common “language” used across every classroom.

Using the Goal 3 Standards

The eleven Goal 3 standards must be included in every subject area at every grade level. In Appendix 2A is a detailed list of the skills and abilities associated with each standard at each of the five grade levels: Pre-K-2, 3-5, 6-8, 9-12, and Post-secondary.

Standard 1: *Florida students locate, comprehend, interpret, evaluate, maintain, and apply information, concepts, and ideas found in literature, the arts, symbols, recordings, video and other graphic displays, and computer files in order to perform tasks and/or for enjoyment.*

Success on Standard 1 is necessary for success in school, life, and the workplace.

Infusion of technology, multimedia, and the Internet has placed increased demands on information management skills. In an information age, people frequently face challenges in locating, interpreting, applying, evaluating, and storing information. Daily tasks requiring competence on Standard 1 include:

- ◆ Interpreting news, weather, or financial reports on TV or in the newspaper;
- ◆ Reading or giving directions to complete a technical task;
- ◆ Understanding and following directions to operate an electronic appliance;
- ◆ Accessing information from data storage systems, such as electronic encyclopedias, atlases, or a library;
- ◆ Setting up and operating a new appliance such as a VCR;
- ◆ Analyzing and troubleshooting technical problems with technology;
- ◆ Following instructions to complete Income Tax returns;
- ◆ Organizing important documents and records;
- ◆ Interacting on electronic networks, such as the Internet;
- ◆ Installing software on a computer; and

- ◆ Applying business related computer applications.

Standard 2: *Florida students communicate in English and other languages using information, concepts, prose, symbols, reports, audio and video recordings, speeches, graphic displays, and computer-based programs.*

Effective communication deals with the learner's capacity to convey thoughts, ideas, and information purposefully. Communications are transmitted when a student speaks, writes, charts, graphs, or performs. Media technologies significantly enhance communications. The purpose of Standard 2 is to ensure that Florida students are skilled in communicating in English and other languages. Proficiency in *other languages* means that students are expected to function using not only English, but using other foreign languages. Languages pertinent to specialized areas include for example, mathematical notation and vocabulary, scientific language, Latin terminology, music notation, American sign language, industry specific technical terms, and computer terminologies.

Communication is an essential form of human engagement. Success on Standard 2 is necessary for success in school, at home, and in the workplace. Common activities that involve communication skills are:

- ◆ Initiating, listening, and maintaining conversation;
- ◆ Creating a multimedia presentation to sell a new marketing strategy;
- ◆ Writing a letter of application (for jobs or educational programs);
- ◆ Producing formal or informal announcements;
- ◆ Writing, reading, and utilizing technical reports;
- ◆ Writing, delivering, or analyzing a speech;
- ◆ Viewing, listening, and evaluating a technology learning activity; and
- ◆ Describing and debating problems, solutions, or action as a team or committee member.

Standard 3: *Florida students use numeric operations and concepts to describe, analyze, communicate, synthesize numeric data, and to identify and solve problems.*

Numeric problem-solvers analyze and solve mathematical, logical, or quantitative problems in the context of school, home, and work. The intent of Standard 3 is to help learners use mathematical concepts and related results to make real life or workplace decisions. Numeric

problem solvers gather, read, manipulate, interpret, organize and analyze quantitative data. They use mathematical symbols and language to verify, display, explain, and justify solutions to quantitative or mathematical problems. Students must take advantage of technologies such as calculators and computers to support their work.

Common examples of activities that require mathematical problem solving proficiency include:

- ◆ Analyzing, estimating, displaying and presenting costs for a project or activity;
- ◆ Analyzing, determining, displaying and explaining profit or loss in various situations;
- ◆ Organizing, developing and maintaining a personal business plan, forecast and status;
- ◆ Analyzing, calculating, and communicating area or parameter costs; and
- ◆ Explaining, developing, and communicating statistical displays using measurements, charts, graphs, formula and verbal explanation.

Standard 4: *Florida students use creative thinking skills to generate new ideas, make the best decision, recognize and solve problems through reasoning, interpret symbolic data, and develop efficient techniques for lifelong learning.*

Developing critical and creative thinking skills in students involves gathering new information to answer questions and make conclusions, connections, and inferences from existing information. Creative thinking involves originality, the ability to find novel or unique relationships, and unusual solutions. Creative thinkers have a high tolerance for ambiguity and seek out opposing viewpoints.

The intent of Standard 4 is to help students become proficient in using critical and creative thinking processes to solve problems. They are eventually expected to apply various problem-solving processes such as the scientific method, statistical analysis, trial and error, and simulation techniques. Attitudes of persistence should be nurtured. Common examples of activities that require proficiency in critical thinking include:

- ◆ Developing, maintaining, and analyzing accounts and budgets for different purposes and
- ◆ Gathering, summarizing, analyzing and displaying data so that an informed, reasonable decision can be made.

Standard 5: *Florida students display responsibility, self-esteem, sociability, self-management, integrity, and honesty.*

Developing ethical and responsible workers focuses on developing positive social skills, self-management behaviors, self-esteem, and honesty.

Unlike Standards 1 to 4, which focus on cognitive and academic development, Standard 5 deals with affective and social growth. Instruction in Standard 5 occurs in formal and informal interactive settings. Teachers, parents, the school, the business community and the community as a whole work as partners to develop students as responsible workers. The environment must be conducive to nurturing the personal and social attributes that define Standard 5. Positive behaviors can be reinforced through consistent role models between peers and adults during school years. Mentoring, counseling and behavioral contracts are effective ways in which to develop Standard 5 in students. Consistent, constructive, and timely feedback can play an important role in shaping desired behaviors. Some examples of how responsibility and honesty can be imparted are:

- ◆ At the primary level children learn to share and learn with each other, which initiates the concepts of fairness and community;
- ◆ At the intermediate level, children learn the concept of doing their own work as well as accepting the responsibility of their performance in cooperative projects;
- ◆ At middle school level, students are exposed to concepts of ownership and copyrights through differentiating among the applications for freeware, shareware and licensed software;
- ◆ In high school, students can learn responsibility and the value of team work through cooperative or service learning projects that require each individual to plan contribute and reflect on a project; and
- ◆ At the community college level, students can examine legal and ethical procedures and practices for a specific industry.

Standard 6: *Florida students will appropriately allocate time, money, materials, and other resources.*

Developing effective resource managers involves skills in the allocation and management of resources to complete projects and tasks. Instruction and assessment of Standard 6 occur as students prepare action plans to accomplish tasks, allocate resources, implement the plan, and evaluate whether or not adequate resources were allocated. Students can demonstrate their effectiveness as resource managers in school, at home, in the community, and the workplace.

The intent of Standard 6 is to help students become proficient in managing time, preparing and following time lines, preparing budgets, acquiring and distributing materials, allocating people, and other resources needed. Other resources could include facilities, technologies, or environmental considerations. The nature of the activities depends on purposes of the task and the developmental level of the child. Activities could be related to student government, clubs, school newspapers, school yearbooks, community service projects, part-time employment, or school projects. Common examples are:

- ◆ Managing a household or personal budget,
- ◆ Time management in school or work,
- ◆ Designing, managing, and evaluating a major project, and
- ◆ Managing tools, technologies, and materials in an applied technology task.

Standard 7: *Florida students integrate their knowledge and understanding of how social, organizational, informational, and technological systems work with their abilities to analyze trends, design and improve systems, and use and maintain appropriate technology.*

Developing proficient systems managers deals with helping students understand what systems are, how they work, and how to use the systems approach to solve problems or design solutions. Instruction and assessment of Standard 7 occur as students solve problems that help them see the big picture, its parts, and the relationship between the parts.

The intent of Standard 7 is to help students use the systems approach as a way of looking at the relationship between events and phenomena in their world. Efficient systems managers use systems concepts to solve problems, develop new models, or change existing systems to produce better results.

Various subject area concepts are integrated using the systems approach. Students should be able to identify and understand natural, social, organizational, informational, and technological

subsystems and interdependence between them. Examples of grade level specific systems that students learn are:

- ◆ At the primary level, children learn that lunch at school occurs at a specific time, which may vary by age group, that they obtain food by passing through the food counter in a single file, and that there is a certain area of the lunch room where they are to sit;
- ◆ At the intermediate level, the concept of systems in the human body is developed;
- ◆ At the middle school level, students learn about various governments and specifically, the governmental system of the United States;
- ◆ At the high school level, students learn computer systems including hardware components such as a CPU (Central Processing Unit), I/O's (Input, feedback, and Output devices), and software such as operating systems, word processing programs, spreadsheet programs, etc.; and
- ◆ At the community college level, students learn the system of manufacturing in a specific industry including processes, inventory control, flow of a product, etc.

Standard 8: *Florida students work cooperatively to successfully complete a project or activity.*

Developing cooperative workers deals with the attributes and interpersonal skills necessary to work effectively in teams, a process being used extensively in the work world. Unlike Standard 5 (Responsible Workers), which deals with affective and social growth on a personal level, Standard 8 deals with goal- or task-oriented social behaviors that involve group work. To develop cooperative workers, opportunities must be provided for students to perform tasks and projects in cooperative groups. Such opportunities help students understand group processes, assume various roles in the group, keep the group on a task, motivate the group toward task completion, and evaluate the effectiveness of the group in accomplishing goals.

Standard 9: *Florida students establish credibility with their colleagues through competence and integrity and help their peers achieve their goals by communicating their feelings and ideas to justify or successfully negotiate a position which advances goal attainment.*

Developing effective leaders deals with the attributes and interpersonal skills necessary for students to advance group and individual goals, using appropriate skills in listening, communicating, decision-making, conflict resolution, and negotiation.

Standard 9 (Effective Leaders) is closely related to Standard 5 (Responsible Workers), which deals with affective and social growth on a personal level, and Standard 8 (Cooperative

Workers), which deals with goal- or task-oriented group behaviors. In order to help develop effective leaders, opportunities must be provided for students to assume leadership responsibilities in safe, non-threatening environments. Such opportunities should help students in valuing direct communication, unbiased treatment of individuals, and in separating work and group-related issues from personal ones.

Standard 10: *Florida students appreciate their own culture and the cultures of others, understand the concerns and perspectives of members of other ethnic and gender groups, reject the stereotyping of themselves and others, and seek out and utilize the views of persons from diverse ethnic, social, and educational backgrounds while completing individually and group projects.*

Developing multiculturally sensitive citizens and workers deals with helping students become knowledgeable about their own cultural backgrounds and those of others. The intent of Standard 10 is to help students value and affirm the need for human dignity and respect. It involves broadening students' knowledge and understanding of the language, customs, beliefs, traditions, and values of different cultures.

Standard 11: *Families will share the responsibility of accomplishing the standards set in Goal 3 throughout a student's education from preschool through adult.*

Educators are encouraged to invite and facilitate the involvement of families in their children's education. Examples of standard 11 are **for parents, care givers and other supporters** to:

- ◆ Assist at home with homework and projects,
- ◆ Monitor progress through teacher conferences,
- ◆ Volunteer in the classroom,
- ◆ Generate community support, and
- ◆ Model lifelong learning.

Incorporating Goal 3 Standards into Instruction and Assessment

Schools will be held accountable for incorporating the Goal 3 student-achievement standards into instruction and classroom assessment. The following are examples of applied technology classroom activities that integrate the Goal 3 standards:

High school students are asked to bring in a job description or job advertisement that interests them; each student must write a cover letter and a resume for that job using the correct format and business-writing skills learned in class. Afterwards, students pair

up to role-play an interview situation in which one student acts as a job applicant and the other as an interviewer. After each pair performs its role-play for the class, a discussion is held in which students offer constructive feedback. The role play may become a connecting activity by using business and industry personnel to conduct the interviews. Through this activity, students apply their oral and written communication and analytical skills to a real-life scenario.

This example uses Standard #1, (Information Manager); Standard #2, (Effective Communicator); Standard #4, (Creative/Critical Thinker); and Standard #8, (Cooperative Worker.)

Students assess each other's technical manual while working in pairs. Each student critiques his or her partner's analysis and summary based on criteria created by the class with the teacher. Before the exercise, the instructor leads the students in an activity that demonstrates and models how to give constructive criticism. As the students critique each others' work, they use student developed guidelines for giving and receiving constructive criticism.

This example uses Standard 1 (Information Manager), Standard 2 (Effective Communicator), Standard 4 (Creative/Critical Thinker), Standard 5 (Responsible/Ethical Worker), Standard 8 (Cooperative Workers), and Standard 9 (Effective Leaders).

Key Chapter Points

- ◆ **As identified in Goal 3 of Florida Department of Education's, A System of School Improvement and Accountability, there are eleven general standards or processes that are necessary and should be imbedded in life and work roles.**

- ◆ **The eleven Goal 3 standards are:**
 - Standard 1 Information Managers - capable of obtaining information from a wide variety of sources and utilizing the information in a productive and/or enjoyable manner.**
 - Standard 2 Effective Communicators - in English and other languages**
 - Standard 3 Numeric Problem Solvers - capable of applying skills and knowledge to solve real life and work problems**
 - Standard 4 Creative and Critical Thinkers - capable of analyzing, interpreting, summarizing, and making appropriate connections to complete a task or solve problems.**
 - Standard 5. Responsible and Ethical Workers - who have positive self-esteem, honesty, and good sociability skills.**
 - Standard 6 Resource Managers - capable of efficiently allocating time, money, materials, staff, and other resources.**
 - Standard 7 Systems Managers - who understand and utilize natural, social, organizational, information, and technological systems.**
 - Standard 8 Cooperative Workers - who work with other people with various backgrounds in an effective, productive manner.**
 - Standard 9 Effective Leaders - who can communicate effectively, make decisions, resolve conflicts, and lead a diverse group effectively and productively.**
 - Standard 10 Multiculturally Sensitive Citizens - who are knowledgeable and respectful of their own cultural background and those of others.**
 - Standard 11 Parental Involvement - by being good role models and by physically, mentally, and emotionally supporting their children and the educational process.**

- ◆ **Schools will be held accountable for incorporating the Goal 3 student-achievement standards into instruction and classroom assessment.**

Applied Technology Selected Resources

Goal 3 Standards

Florida Department of Education. (1995, September). Florida's system of school improvement and accountability: Blueprint 2000. Tallahassee, FL: Florida Department of Education.

Bechtol, W. M., & Sorenson, J. S. (1993). Restructuring schooling for individual students. Needham Heights, MA: A Longwood Professional Book.