INTRODUCTION

This chapter contains information that may be used by the Project Team regarding current and future educational "best practices", rules and regulations for students with disabilities, and current standards for Workforce Development programs in the State of Arkansas.

It is important to note that as the School District, Educational Planner, and Design Professionals begin to discuss the design, construction or renovation of school facilities that time be allotted to consider what students will require to help them to be successful in the future. Consideration should be given to current and future trends in educational programs and delivery methods, changes in coursework, impact of technology on teaching methods, and social, economical, and world issues.

This chapter along with Chapter 3 should provide the Project Team with "fodder" to fuel the creative thinking process and develop a school facility that not only meets the standards and guidelines, but positions the district to achieve the highest results in student education.

OVERVIEW

Public education is at a unique point in history. We have transitioned from the industrial age to the information age, and as most organizations have already done, school districts across the country are considering changing the way they do business. School districts are investigating curricula, organizational models, current and emerging technologies, the role of administration, and their local communities to determine the effect each of these has on student performance.

These investigations have resulted in a series of educational "best practices" intended to provide students with the greatest opportunity for success. Implementing educational "best practices" can have a significant impact on facilities. The following describes a few educational "best practices", cites examples where they have been implemented, and expresses the impact each has on facilities. The information included with the examples is to help facilitate the planning, design and construction of school facilities.

CURRICULUM

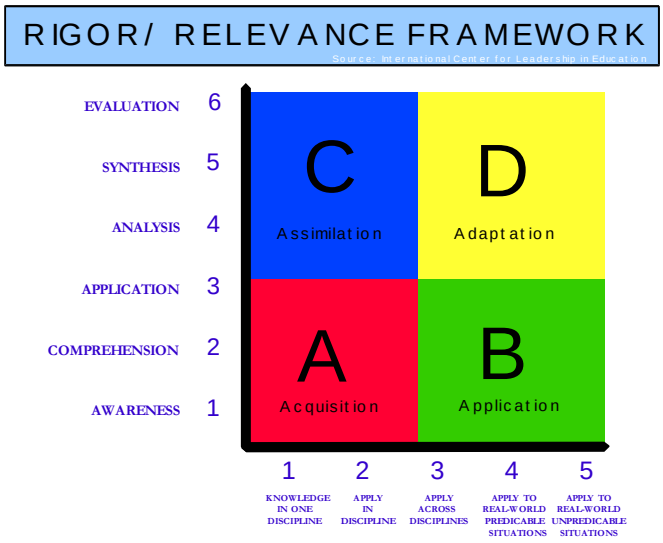
Offer Essential Knowledge, Integrate It, and Make Connections to Real Life

1. Based on federal and state content standards
2. Require content areas to be linked to one another
3. Accommodate multiple-intelligences and learning styles
4. Demand critical thinking and problem-solving
5. Incorporate pervasive technology
6. Utilize multiple performance assessments

CURRICULUM (continued)

A. "Best Practice"

Investigation and research suggest that the core of the high school curriculum must offer both the substance and the practicality to prepare students for an uncertain future. The curriculum should strive to meet individual needs without compromising larger goals. Dr. Willard Daggett, President of the International Center for Leadership in Education and a national expert on education, claims that schools should "make education



rigorous and relevant for all students." Daggett uses a Rigor and Relevance Matrix to categorize curricula into one of four quadrants. Daggett defines rigor as the level of Bloom's Taxonomy achieved in any given lesson. He defines relevance as a continuum ranging from "knowledge in one discipline" to "applications to real-world unpredictable situations."

B. Example

In an effort to make curriculum rigorous and relevant, all sophomores at Oxford Hills Comprehensive High School, located in South Paris, Maine, take a class called the Human Experience (HumEx), which combines the study of math, biology, English and social studies. At the core of the integrated HumEx class is a problem-based approach to the curriculum. Instead of students simply studying content, they are expected to study, understand and then apply the content to a specific, "real" problem. During the school year '02 - '03, the students were charged with creating and maintaining their own model community. To solve the problem, the students studied ecology, philosophy, genetics, literature, economy, geometry, algebra, statistics, government, and poetry.

CURRICULUM (continued)

C. Facilities Impact

Adopting curricula that offer essential knowledge, integrated approaches, and connections to real life can have a significant impact on facilities. Facilities may require student production spaces for the creation of projects, small group rooms for collaboration, and large group presentation spaces for students to show their work.

ORGANIZATIONAL MODELS

Provide Student-Centered House Approach

A. "Best Practice"

Student-centered approaches provide students with a variety of opportunities to learn and develop skills and competencies based on their individual needs. Organizational models such as grade-level teaming, schools-with-in-a-school, and thematic approaches often characterize these student-centered approaches.

"Best practices" may suggest that facilities be organized into houses, instructional units comprised of classroom spaces, student production spaces, and teacher preparation areas. "Best practices" may also suggest that double-loaded corridor designs cannot provide the flexibility necessary to accommodate multiple organizational models nor can they foster the same level of cooperation, teaming, and sharing of professional resources as house designs.

B. Examples

1. Grade-Level Teaming

Grade-level teaming is based on organizing the building into separate grade-level units. Grade-level teams typically utilize an interdisciplinary approach.

Medina High School, located in Medina, Ohio, is organized into six 600-student grade-level houses. Each house contains learning centers, regular classrooms, for each of the core academic content areas [i.e. mathematics, science, English, social studies, foreign language, and business]. Students in each respective grade-level take their core academics in their house leaving only for specialty areas such as physical education, visual and performing arts, and technology education. The goal of the grade-level teaming model for Medina High School is to create an environment, which facilitates personalized education and accommodates both departmentalized and interdisciplinary instructional approaches.

ORGANIZATIONAL MODELS (Continued)

2. Schools-Within-A-School
Schools-within-a-school are based upon multiple units of grades 9-12 housed in the same facility, but having separate governing bodies. Thus, a large school can be divided into smaller, more personalized units.

Alhambra High School, located in Phoenix, Arizona, is based on a school-within-a-school organizational model. Houses in Alhambra High Schools are comprised of regular classrooms, small group rooms, science, project lab, and teacher workroom. In addition, decentralized administrative spaces such as an assistant principal's office and an itinerant office are included in each house. The school-within-a-school model provides an opportunity for more interaction between students and administrators and between administrators and staff. The school within-a-school model also provides for the flexibility to operate as independent schools under the same roof.

3. Thematic Teaming
Thematic teaming is based on delivering curriculum within the context of a specific theme. Themes may include Science and Math, Fine and Performing Arts, or Foreign Language and Literature.

Metro-Tech High School, a comprehensive academic and vocational high school located in Phoenix, Arizona, was renovated to incorporate a thematic organizational model. Each house includes regular classrooms, science lab, a student production area, and a teacher workroom. Each house is specialized for one of five themes: Public Service, Construction, Manufacturing, Transportation, Business, and Marketing.

C. Facilities Impact
Implementing these organizational models, specifically the house concept, may offer significant advantages to the delivery of curriculum and observation of students. While the impact implementing the house concept as well as other models, has on facilities is continually being evaluated in terms of major systems, it typically should not outweigh the educational advantages.

TECHNOLOGY

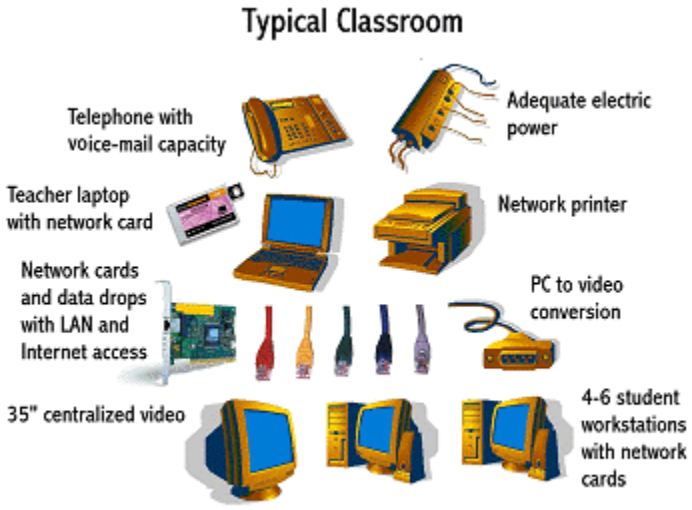
Create Pervasive and Integrated Systems

1. Access to voice, video, data, and electrical outlets provided in every instructional space
2. Proficiencies incorporated into other content areas
3. Utilize distance-learning opportunities
4. Staff development

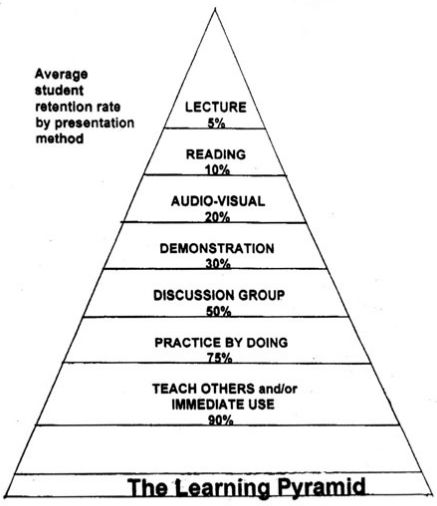
TECHNOLOGY (continued)

A. "Best Practice"

Technology continues to evolve and influence education. Technology has traditionally been perceived as a stand-alone content area with its own dedicated spaces. "Best practices," however, may suggest that technology should be incorporated into every learning space and into all curricula. Incorporating technology can accomplish two basic goals of education: linking traditionally isolated content areas and providing teachers with tools to utilize understanding of multiple intelligences in their lessons.



Howard Gardner has indicated in "Frames of Mind" that there are several different types of intelligences (linguistic, mathematical, musical, kinesthetic, spatial, intrapersonal, interpersonal, and natural intelligence). Each person has strengths in some intelligences and weaknesses in others. Experts have indicated that students retain more information when several intelligences are involved in the learning process. For example, The NTL Institute for Behavior Science reports that students retain only 10% of what they read, but retain 90% of what they read, see, hear, experience, and teach.



NTL Institute for Applied Behavior Science, 300 N. Lee Street, Suite 300, Alexandria, VA 22314. 1800-777-5227.

B. Facilities Impact

Incorporating technology into all learning spaces and into all curricula can have a significant impact on facilities. First, all learning spaces would require access to voice, video, data ports, and electrical outlets. Second, infrastructure must be designed in such a way to allow access for maintenance and upgrades as technology continues to evolve.

ADMINISTRATION

Increase Student Contact and Flexibility

A. "Best Practice"

As a result of recent violent crimes occurring in school facilities, school districts across the country are searching for both active and passive means of security. While not the only reason, "best practices" suggest that decentralizing administration may serve this purpose. The decentralization of administrative services may also provide the flexibility and opportunity for increased student contact, decreased student anonymity, and opportunities for passive supervision.

In addition, assistant principals, deans, and counselors form teams, are closer to the student and teacher, and can more efficiently use their time, expertise, and resources because their offices are located in the academic clusters. Communication between administrators is no longer an issue as access to instructional information and student records and maintaining a positive and secure school environment can be achieved through the effective use of technology.

B. Facilities Impact

Decentralizing administration affects facilities only by the necessity to relocate offices and support spaces within each learning community and/or other areas.

COMMUNITY USE

Instill a Sense of Participation, Ownership, and Pride

1. Cooperative Alliances
2. Youth Services
3. Shared Decision-Making
4. Community Service Volunteers
5. Parent Involvement
6. School/College Partnerships

A. "Best Practice"

"Best practices" suggest that facilities could serve not only as an instructional centers for students, but also as user-friendly centers of the communities. Facilities could provide programs and access to resources for adults, businesses, and other community organizations. Community/school partnerships are playing an increasing role in high school facilities. These partnerships provide students with expanded learning opportunities, professional development opportunities for staff, and a venue for community activities.

B. Facilities Impact

Providing access to and forming partnerships with the community can have a significant impact on facilities. Additional spaces such as parent or community volunteer rooms, community locker rooms, and storage spaces may be necessary. In addition, for security purposes, community access may require careful attention to the organization of the facility. Community accessible portions of the facility may need to be located in areas that permit the remainder of the facility to be secure before, during, and after school hours.

SUMMARY

As a result of the transition to the information age as well as the aging of facilities, school districts are investigating curricula, organizational models, current and emerging technologies, the role of administration, and their local communities to determine the effect each of these has on student performance.

The research and investigations provided within this chapter describes "best practices" that suggest the following:

- Curriculum
  Offer Essential Knowledge, Integrate It, and Make Connections to Real Life

- Organizational Models
  Provide Student-Centered House Approach

- Technology
  Create Pervasive and Integrated System

- Administration
  Increase Student Contact and Flexibility

- Community Use
  Instill a Sense of Participation, Ownership, and Pride

These "best practices" are not intended to be solutions to all of the issues confronting schools. Schools may choose to utilize these "best practices" as they work as a team to discuss how best to provide educational opportunities to improve student achievement in their district.

OVERVIEW

The Arkansas Department of Education – Special Education Unit complies with the Federal Regulations for the Individuals with Disabilities Education Act (IDEA) and the Arkansas School Facility Manual provides square footage guidelines to comply with the educational program requirements. IDEA requires a district to provide a full continuum of services in a student's neighborhood/home school to the greatest extent possible in the Least Restrictive Environment.

The *Rules and Regulations Governing Special Education and Related Services: Procedural Requirements and Program Standards* provide eligibility criteria for students with disabilities to meet the Least Restrictive Environment requirement for all special needs students. These criteria assist in differentiating the type and number of spaces that are needed in each school to address the facility needs for students with disabilities. As each school district is planning for specific educational program needs in their new or renovated facilities, identifying the number of students in each of these options is important to appropriately provide the unique space requirements. The terms used to establish eligibility criteria are provided as part of this document to assist in identifying all of the students who need to be considered in the facility program needs.

DEFINITION OF TERMS

A. Autism - a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age 3, that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences. The term does not apply if a child's educational performance is adversely affected primarily because the child has an emotional disturbance, as defined in paragraph (b)(4) of 34 CFR 300.7 and at § 6.08.3 of the Arkansas regulations.

B. Deaf-Blindness - concomitant hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational needs that they cannot be accommodated in special education programs solely for children with deafness or children with blindness.

C. Emotional Disturbance - a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance.
   1. An inability to learn that cannot be explained by intellectual, sensory, or health factors.
   2. An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.
   3. Inappropriate types of behavior or feelings under normal circumstances.
   4. A general pervasive mood of unhappiness or depression.
   5. A tendency to develop physical symptoms or fears associated with personal or school problems.

The term includes schizophrenia. The term does not apply to children who are socially maladjusted, unless it is determined that they have an emotional disturbance.

D. Hearing Impairment (Including Deafness) - a hearing impairment that is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification, that adversely affects educational performance.

"Hearing impairment" also means an impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance but that is not included under the definition of deafness.

Audiological Indicators

1. An average pure-tone hearing loss in the speech range (500 - 2000 Hz) of 20dB or greater in the better ear. A child with a fluctuating hearing impairment, such as one resulting from chronic otitis media, is classified as hearing impaired (HI).
2. An average high frequency, pure-tone hearing loss of 35dB or greater in the better ear at two or more of the following frequencies: 2000, 3000, 4000 and 6000Hz.
3. A permanent unilateral hearing loss of 35dB or greater in the speech range (pure-tone average of 500 - 2000Hz).

E. Mental Retardation - significantly subaverage general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period, that adversely affects a child's educational performance.

F. Multiple Disabilities - concomitant impairments (such as mental retardation-blindness, mental retardation-orthopedic impairment, etc.), the combination of which causes such severe educational needs that they cannot be accommodated in special education programs solely for one of the impairments. The term does not include deaf-blindness.

G. Orthopedic Impairment - a severe orthopedic impairment that adversely affects a child's educational performance. The term includes impairments caused by congenital anomaly (e.g., clubfoot, absence of some member, etc.), impairments caused by disease (e.g., poliomyelitis, bone tuberculosis, etc.), and impairments from other causes (e.g., cerebral palsy, amputations, and fractures or burns that cause contractures).

H. Other Health Impairment - having limited strength, vitality or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational environment, that -

1. Is due to chronic or acute health problems such as asthma, attention deficit disorder or attention deficit hyperactivity disorder, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, and sickle cell anemia; and

2. Adversely affects a child's educational performance.

I. Specific Learning Disability - a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia.

Disorders Not Included - The term does not include learning problems that are primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage.

J. Speech Or Language Impairment - a communication disorder, such as stuttering, impaired articulation, a language impairment, or a voice impairment, that adversely affects a child's educational performance. The operational definition under these regulations, which is designed to be compatible with the Federal definition, is as follows:

> "Speech or Language Impairment" means a communication disorder such as deviant articulation, fluency, voice, and/or comprehension and/or expression of language, spoken or written, which impedes the child's acquisition of basic cognitive and/or affective performance skills as established in the Basic Educational Skills manual developed by the Arkansas Department of Education.

K. Traumatic Brain Injury - an acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that adversely affects a child's educational performance. The term applies to open or closed head injuries resulting in impairments in one or more areas, such as cognition; language; memory; attention; reasoning; abstract thinking; judgment; problem-solving; sensory, perceptual, and motor abilities; psychosocial behavior; physical functions; information processing; and speech. The term does not apply to brain injuries that are congenital or degenerative, or to brain injuries induced by birth trauma.

L. Visual Impairment - an impairment in vision that, even with correction, adversely affects a child's educational performance. The term includes both partial sight and blindness.

Students with partial sight are those whose vision, although impaired, is still the primary channel of learning and, with adjustments, are able to perform the visual tasks required in the usual school situation. Generally, their visual acuity with correction is 20/70 or less.

Students with blindness are those with no vision or with little potential for developing vision as a primary channel for learning and, therefore, must rely upon tactile and auditory sense to obtain information.

INTRODUCTION

The current *Standards for Accreditation of Public Schools* require that secondary educational facilities offer a minimum of three programs of study from three different occupational areas. A list of all approved occupational areas, clusters or pathways, and programs of study is included in this manual to assist school districts, educational planners, and design professionals with anticipating space needs for these requirements.

Included below is an outline of the current workforce development programs. Each Occupational Area is organized in the following organizational structure.

A. Occupational Area
  1. Pathway or Cluster
    a. Program of Study

OCCUPATIONAL AREAS

A. Agriculture
  1. Agriculture, Food, and Natural Resources
    a. Agribusiness
    b. Agricultural Power, Structural and Technical Systems
    c. Agricultural Science – Animal or Plant Systems
    d. Horticulture/Plant Systems
    e. Natural Resources/Environmental Science Systems

B. Business and Marketing
  1. Business Management and Administration
    a. Management
    b. Office Administration
  2. Hospitality and Tourism
    a. Hospitality
    b. Lodging
  3. Information Technology
    a. Desktop Publishing
    b. Multimedia
    c. Programming
  4. Finance
    a. Accounting
    b. Banking and Finance
  5. Marketing, Sales, and Service
    a. Marketing

OCCUPATIONAL AREAS (continued)

C. Family and Consumer Sciences
   1. Family and Consumer Science Education
      a. Family and Consumer Sciences
   2. Education and Training
      a. Education and Training
   3. Hospitality and Tourism
      a. Food Production, Management and Services
      b. Facilities Management, Maintenance, and Services
   4. Human Services
      a. Child Care Guidance, Management and Services
      b. Cosmetology

D. Architecture and Construction
   1. Construction Technology
   2. HVACR

E. Arts, A/V Technology and Communications
   1. Advertising Design
   2. Career Communications
   3. Commercial Photography
   4. Graphic Communications
   5. Performing Arts
   6. Radio/TV Broadcasting

F. Government and Public Administration
   1. ROTC

G. Health Science
   1. Medical Professions Education

H. Law, Public Safety and Security
   1. Criminal Justice

J. Manufacturing
   1. Electronics
   2. Furniture Manufacturing
   3. Industrial Equipment Maintenance
   4. Machine Tool Repair
   5. Major Appliance Repair
   6. Welding

K. Science, Technology, Engineering and Mathematics
   1. Drafting and Design
   2. Computer Engineering
   3. Geospatial Technology (GIS)
   4. Pre-Engineering

L. Transportation, Distribution, and Logistics
   1. Automotive Collision
   2. Automotive Service Technology
   3. Aviation Mechanics
   4. Diesel Mechanics
   5. Power Equipment Technology

SPACE NEEDS

In order to meet the needs of Workforce Development programs, adequate laboratory, classroom, storage, and office space is needed. Chapter 5: Program of Requirements [Bracketing] contains a detailed list of the spaces that a District may include when designing a High School facility with Workforce Development programs.

It is important to point out that the District should determine the Occupational Areas to be delivered, the associated cluster or pathways, and the programs of study and then proceed to Chapter 5 to complete the Program of Requirement Worksheet. When completing the worksheet, the Project Team should select the laboratory space for each program of study and the related spaces such as offices, tool rooms, and storage needed to serve the laboratory space. Additional information can be found in Chapter 5.