Educational Framework

Introduction

An educational framework is a series of broad principles associated with organizational, facility, program, and service issues. In conjunction with the Educational Facility Planning Concepts, the Educational Framework establishes the foundation on which educational facilities are designed.

The *Connecticut School Construction Standards and Guidelines (Standards and Guidelines)* are not intended to address every possible condition. Flexibility is important to develop appropriate solutions given the diversity of educational programming, student needs, community requirements, existing building conditions, and site constraints found in each LEA.

Grade Configuration

Following are common grade configurations. Each LEA is responsible for determining the appropriate grade configuration for its students and facilities.

- Elementary School: PreK-5
- Middle School: 6-8
- High School: 9-12
- Combination Schools: PreK-8 or PreK-12

School Size

School size is based on the number of students projected to attend a particular school facility.

The Compilation of Space found in Chapter 5 provides required spaces and a support space allowance for the selection of spaces needed for the various program areas found in each grade level of a school.

Class Size

Class size is defined as the number of students occupying a space at one time. Class size is not necessarily synonymous with the student/teacher ratio. Following are the suggested class sizes to be used for planning purposes.

- PreK - 5th Grade 25 students
- 6th Grade - 8th Grade 25 students
- 9th Grade - 12th Grade 25 students
- Career Technical Classes varies

Programs

As programs and services change, it is important that each LEA identify the current and future educational needs of its students. Once those needs have been identified, the LEA should then determine the types of instructional programs that will result in a successful student.

The *Standards and Guidelines* are based on current and future trends in education and include the following programs. As stated above, ultimately, each LEA is responsible for determining the appropriate programs for its students.

- Elementary Schools
  - Core Academic (including Preschool)
  - General Education Intervention Spaces
  - Special Education
  - Visual Arts
  - Music
  - Technology Education
  - Physical Education

- Middle Schools
  - Core Academic
  - General Education Intervention Spaces
  - Special Education
  - Visual Arts
  - Music
  - Technology Education
  - Family and Consumer Science
  - Physical Education

- High Schools
  - Core Academic
  - General Education Intervention Spaces
  - Special Education
  - Visual Arts
  - Music
  - Performing Arts
  - Health and Physical Education
  - Career and Technical Education (CTE), including but not limited to:
    - Business/Finance Education
    - Technology Education
    - Marketing Education
    - Family & Consumer Science Education
    - Teaching & Training Education
    - Agriculture, Science & Technology (ASTE)

High Performance Learning Environments

High Performance Learning Environments (HPLE)

High Performance Learning Environments contain multiple approaches, concepts, and attributes that reflect an LEA's specific needs, which have implications for the design of the curriculum as well as the physical facility. Simply put, an HPLE provides for engagement and interaction, teamwork and learning, and concurrent, interdisciplinary themes.

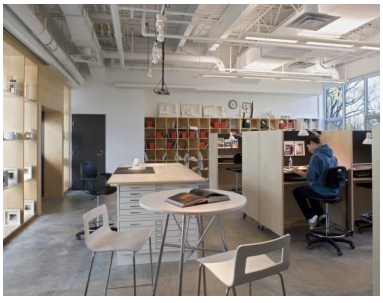
While the role of "teacher" is shifting, so is the built environment. An objective in an HPLE is to support these shifts in teaching methods, such as team-based teaching and project-based instruction, while also being agile and flexible. Additionally, the HPLE should encourage lifelong learning and support individual, group, and team activities.

In Chapter 2, Section 2000, three learning environments were described in detail:

- Traditional Learning Environment (TLE)
- Student-Centered Learning Environment (SCLE)
- Blended Learning Environment (BLE)

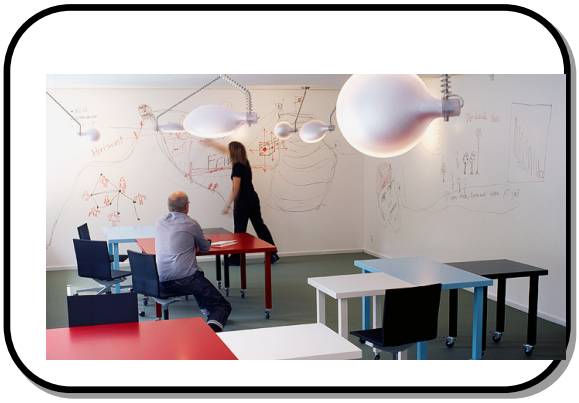
All three types of learning environments may contain a variety of spaces, such as:

- Collaborative large group spaces
- Project spaces
- Niche spaces for individual and small group work
- Individual study spaces and work stations with storage
- Science/discovery areas
- Break-out spaces
- Reconfigurable labs for science, art, and project activities
- Learner display areas
- Formal and informal presentation spaces
- Combined music, art, performance, and dance labs or studios
- Wellness and physical education space beyond the traditional "basketball only" gymnasium
- Outdoor learning spaces
- Varied food service and dining areas throughout the facility
- Common spaces serving as multi-purpose/multi-function spaces
- Welcoming entries
- Indoor and outdoor connectivity
- Facilitator spaces
- School and community connectivity and shared spaces



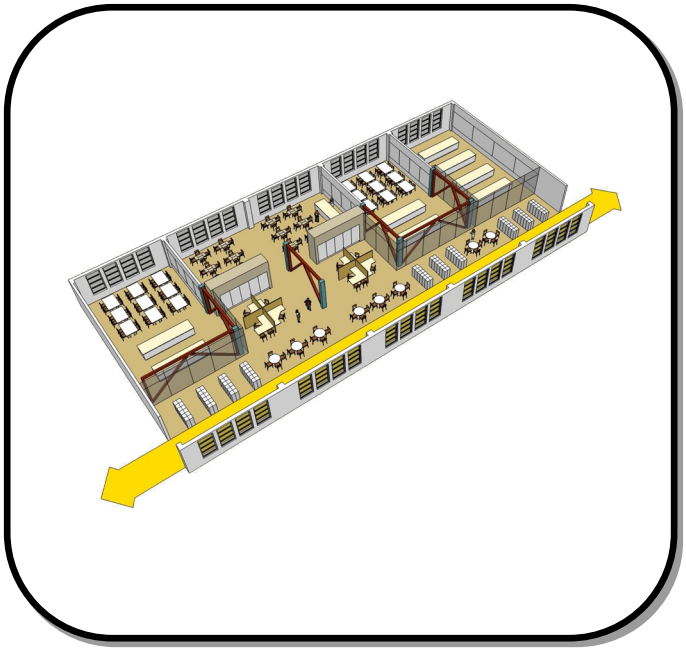
Additionally, all three types of learning environments should:

- Support self-directed learning
- Provide for individual and small group instruction
- Encourage problem-solving
- Promote positive peer interactions in the course of learning
- Encourage learner discovery
- Allow instructor-guided learning
- Allow for continuous assessment of learner knowledge and mastery level



As we have come to understand more about how people learn and the role of technology in learning, our notions of effective learning spaces are changing. Increasingly, spaces need to be flexible and networked—bringing together formal and informal activities in a seamless environment which acknowledges that learning can occur in any place, at any time.

Educational spaces themselves are agents for change. Changed spaces can affect educational practice. Learning can occur in classrooms ("formal learning"). Other times, learning results from unexpected interactions of individuals ("informal learning"). Spaces that provide experiences, stimulate the senses, encourage the exchange of information, and offer opportunities for practice, feedback, application, and transfer will most likely support learning and allow any space within the facility to become an HPLE.



Learning environments should be considered holistically. While each learning environment will differ, learners need to be able to move seamlessly from large group instruction to small group collaboration to independent study to formal presentation. There should be a clear connection to the outdoors as well. The activities of reading, writing, research, sharing, investigating, analyzing, performing, introspection, and movement should be accommodated thoughtfully within the HPLE.

The following features should be considered in the design of the HPLE.

- **SPACES THAT ARE AGILE/INSTANTLY FLEXIBLE**
  Learners should be able to change quickly from listening to one teacher (traditional "Chalk & Talk" lecture or demonstration) to working in groups or to working independently. Spaces need to be capable of quick reconfiguration to support different kinds of activity. Moveable tables, chairs, partitions, casework, and furnishings are a few examples of providing an agile space. Additionally, spaces should be designed with building

systems that allow the ability to reconfigure more permanent spaces in the future with minimal costs.

- **SPACES THAT ARE COMFORTABLE**

  Individual seating must take into account different body sizes and the amount of time learners need to be seated. Varying types of moveable and reconfigurable seating and lounging will provide comfort for various types of learners. Discomfort is a compelling distraction to learning. Areas should provide surfaces for writing and supporting computers, books, and other materials. Natural lighting, day-lighting, natural ventilation, and controls should be available to occupants to customize the comfort of the spaces dependent on the activity taking place at a given time.

  Additionally, special attention should be given to accommodating students with disabilities and special learning needs in relation to comfortable seating.

- **SPACES WITH AN AMBIANCE**

  Learners yearn for color, controlled natural and task-appropriate lighting, attractive finishes, interesting room shapes and configurations, and a variety of interior and exterior views. Spaces with multiple and accessible levels help to create interest and attract learners and mentors. These types of spaces will be the most successful environments for learning.

- **SPACES WITH TECHNOLOGY/CONNECTIVITY**

  Creating, reviewing and sharing student work, as well as the collection analysis, dissemination, and display of data, knowledge, or student products can be maximized using technology. An HPLE requires seamless, flexible technology. As technology changes, smaller mobile devices will travel with users, who will expect wireless environments, ample access to power, and the ability to network with other devices.

  An HPLE will need flexible plug-and-play capabilities based upon the current configuration of the space. Technology should be as transparent as the pencil and paper were in the 1950s. Technology should be something to use, not something to do.

- **INTEGRATED SUSTAINABILITY**
  Solar, rain harvesting, recycling, natural ventilation, day-lighting, edible gardens, and LEED strategies should be implemented into the facility and become part of the diversified curriculum.

- **ALL SPACES ARE PART OF A HOLISTIC LEARNING ENVIRONMENT**
  Implications for space planning should include the whole facility, campus or LEA as a learning place rather than emphasizing traditional classrooms. Provide universal, flexible places for discussion and study across the entire facility, campus, or LEA.

Special Education

Special Education

The Connecticut State Board of Education believes that all students, including students with exceptionalities, are unique and influenced by cultural, linguistic, intellectual, psychological, health and economic factors. *(Excerpted from the State Board of Education's Position Statement on the Education of Students with Exceptionalities*)

The Bureau of Special Education of the Connecticut State Department of Education complies with the federal regulations for the Individuals with Disabilities Education Act (IDEA). It is the intent of the *Connecticut School Construction Standards and Guidelines (Standards and Guidelines)* to accommodate the needs of all students—realizing that most students with an Individualized Education Program (IEP) may utilize a variety of spaces throughout the school day.

The *Standards and Guidelines* provide square footage guidelines to comply with educational program requirements. IDEA requires LEAs to provide a Free and Appropriate Public Education (FAPE) to all students with disabilities in the Least Restrictive Environment (LRE) to the maximum extent appropriate, ensuring that services are appropriate, individualized, and meet the needs of each child with a disability.

There are numerous factors to be considered when planning school facilities for students with disabilities. Size, quantity, flexibility, adaptability, accommodations for assistive equipment, and space for movement are just a few factors to consider.

It is important to start planning for these students early in the process by identifying the necessary programs and services, spaces, and staffing to ensure that student needs will be met through the design and construction of the facility to the maximum extent appropriate.

As each LEA is planning for specific educational program needs in its new or renovated facilities, 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.

Definition of Terms (excerpted from IDEA 2004)

1. *Autism* means a development disability significantly affecting verbal and non-verbal 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 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 item #4 below. A child, who manifests the characteristics of autism after age three, could be identified as having autism if the criteria in the first paragraph of this section are satisfied.

2. *Deaf-Blindness* means 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.

3. *Deafness* means 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 a child's educational performance.

4. *Emotional Disturbance* means 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:
   - An inability to learn that cannot be explained by intellectual, sensory, or health factors.
   - An inability to build or maintain satisfactory interpersonal relationships with peers or teachers.
   - Inappropriate types of behavior or feelings under normal circumstances.
   - A general pervasive mood of unhappiness or depression.
   - A tendency to develop physical symptoms or fears associated with personal or school problems.

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

disturbance.

5. *Hearing Impairment* 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.

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

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

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

9. *Other Health Impairment* means 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--
   - 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, sickle cell anemia, and Tourette syndrome; and
   - Adversely affects a child's educational performance.

10. *Specific Learning Disability* means 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 perpetual disabilities, brain injury, minimal brain dysfunction, dyslexia, and development aphasia.

Specific Learning Disability does not include learning programs that are primarily the result of visual, hearing or motor abilities, of mental retardation, of emotional disturbance, or of environmental, cultural or economic disadvantage.

11. *Speech or Language Impairment* means a communication disorder, such as stuttering, impaired articulation, a language impairment, or a voice impairment, that adversely affects a child's educational performance.

12. *Traumatic Brain Injury* means 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. Traumatic brain injury 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. Traumatic brain injury does not apply to brain injuries that are congenital or degenerative, or to brain injuries induced by birth trauma.

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

Additional Definitions

1. *FAPE*: A free and appropriate public education and related services, provided to students with disabilities that is provided at public expense, under public supervision, and without charge to parents; that is appropriate and individualized to meet the needs of each child with a disability and part of the public education provided to all children and in conformity with a child's individualized education program (IEP).

2. *LRE*: To the maximum extent appropriate, children with disabilities are educated with students who are not disabled; and special classes, special schooling or other removal of children with disabilities from the regular educational environment occurs only if the nature or severity of the disability is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily.

Early Childhood Education
PreK and Kindergarten

Introduction

The Office of Early Childhood (OEC) uses the following standards to guide and monitor program quality in early childhood environments:

- Environment Rating Scales (ECERS – R, ECERS – 3, SACERS;
- The National Association for the Education of Young Children (NAEYC) Program Standards and Accreditation Criteria; and
- Federal Head Start Approval.

The OEC requires that preschool programs that receive state funding achieve accreditation from NAEYC or be Head Start approved by the third anniversary of funding, as determined by the original start date for funding established as the first day children attend the program. PA 15-134 extends this requirement to preschool programs overseen by charter and magnet schools. The accreditation criteria of NAEYC build on the State of Connecticut's licensing regulations. For those programs that receive OEC funding but have not yet achieved NAEYC accreditation, an Environmental Rating Scale (ECERS for preschool programs) is required and serves as the interim quality assurance measure during the three years that the program has to achieve NAEYC Accreditation/Head Start Approval.

The following sections illustrate how these standards promote a physical environment best-suited for preschool and kindergarten children. It is important to consider the early childhood classroom's use of space as it influences the design of the building.

The Early Childhood Environment

Children benefit from an environment that is designed to support rich learning experiences that foster competent learners with essential dispositions to be:

- Creative
- Inquisitive
- Flexible
- Critical Thinkers
- Purposeful and Reflective
- Social Learners

Guided by a curriculum that includes content, concepts, and activities that foster social, emotional, physical, language, and cognitive development, the early childhood environment allows high-quality play experiences that contribute to children's growth and development. A planned environment includes a schedule that is predictable yet flexible and responsive to the individual needs of children. Planned experiences include both indoor and outdoor settings and allow for periods of active and quiet play.

Over the course of the day, children have the opportunity for play, creative expression, large and small group activities, active and quiet time, and child-initiated activities.

Space Considerations

Space considerations include:

- Minimum of 35 sq. ft. of total indoor usable program space per child in each of the primary indoor activity areas.
- Maximum group size in preschool of 20 children and in kindergarten of 24 children.
- Access to minimum of 75 sq. ft. of outdoor space per child.
- At least one child-sized toilet and one low sink with hot and cold running water for every 16 children.
- Teaching staff must have ability to see and/or hear children at all times.
- Space is arranged so that many different types of activities can take place simultaneously without impacting each other.
- Provide for a variety of activities such as: motor experiences (running, climbing, riding, crawling, etc.), dramatic play, block building, manipulative play, art, and exploration of the natural environment (including a variety of natural and manufactured surfaces and areas with nonpoisonous plants, shrubs, and trees).
- Space to accommodate indoor equipment for large motor skills.
- Shaded outdoor areas (avoid excessive sun).
- Outdoor space shall be fenced or otherwise protected for safety.
- Outside equipment shall be anchored for stability. Anchors shall be buried below ground level.
- Outdoor gross motor space has a variety of surfaces permitting different types of play.
- Handwashing areas.
- Easy to clean surfaces.
- Drinking water shall be available and accessible.
- Appropriate changing and sanitary areas for children who need assistance with toileting or who are not independent

with toileting.

- Ample storage that is closed/lockable to ensure safety and open storage accessible to children.
- Good ventilation.
- Temperature control.
- Natural lighting.
- Sound-absorbing, durable materials.
- Sturdy, comfortable, easy to clean furniture.
- Dramatic play equipment.
- Sensory materials such as sand, water, play dough, paint and blocks.
- For staff, provide an adult-sized restroom, a secure place for personal belongings, and administrative area for planning and preparing materials that is separate from the children's areas.

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Career and Technical Education

Introduction

The Carl D. Perkins Act of 2006 defines Career and Technical Education as organized education activities that:

- Offer a sequence of courses that provide individuals with coherent and rigorous content aligned to challenging standards, relevant technical knowledge, and skills needed to prepare for further education and careers in current or emerging professions.
- Provide technical skill proficiency, an industry-recognized credential, a certificate, or an associate degree.
- May include prerequisite courses (other than a remedial course) that meet the requirements of this subparagraph.
- Include competency-based applied learning that contributes to the academic knowledge, higher-order reason and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of an industry, including entrepreneurship, of an individual.

The Office of Career and Technical Education focuses on seven program areas of study:

- Agricultural Science & Technology
- Business & Finance Technology
- Cooperative Work Education/Diversified Occupations
- Family & Consumer Sciences
- Marketing Education
- Medical Careers Education
- Technology Education

These programs areas align with the National Career Clusters and the Connecticut Career Pathways. Twenty-one areas of concentration exist within the program areas. These areas of concentration represent the most prominent categories of CTE course sequences in Connecticut and are assessed yearly using the CTE assessment.

Program Area Descriptions

Agricultural Science and Technology Education prepares students for careers in the areas of agriculture mechanics, animal science, aquaculture and marine technologies, biotechnology, food science, natural resources and environmental systems, and plant science.

Business and Finance Technology Education is offered through the middle and comprehensive high school. These courses are an integral part of the total academic structure that provides students with the competencies to be competitive in a business-oriented society. The mission of this program is to ensure that students have the opportunity to develop skills, knowledge, understanding, and attitudes necessary for successful participation in post-secondary education and the global economy.

Program areas include accounting, business management, business law, computer information systems, economics, entrepreneurship, international business, and personal finance.

Cooperative Work Education/Diversified Occupations (CWE/DO) refers to the placement of students throughout all career pathways. These programs are designed to prepare students for post-secondary education and/or employment.

Family and Consumer Sciences Education empowers individuals and families across the life space to manage the challenges of living and working in a diverse global society. Its unique focus is on family, work, and their relationships.

Program areas include culinary and food production, early childhood education and services, human services, nutrition and food production, parenting, personal finance, and textiles and design.

Marketing Education is the teaching and learning of the multi-faceted, critical business function, undergirded by such social sciences as economics, psychology, and sociology. The successful performance of marketing relies on the application of mathematics and English principles, use of scientific problem-solving, and application of technology to marketing situations and problems.

Medical Careers Education provides secondary students with a foundation of basic skills, knowledge, and attitudes necessary for pursuing post-secondary education and employment in health care.

Technology Education is the study of human innovation, which provides an opportunity for students to apply and manage knowledge and resources related to the human-made world. It

incorporates collaborative, application-oriented, activity-based strategies used to develop creative thinking skills while solving real-world problems. The study of technology education prepares students to become lifelong contributing members of our technological society who comprehend the impact of technology and use it to improve the quality of life for all people.

Areas of concentration include automotive technology, computer aided drafting and design, engineering technology, digital video production systems, and wood technology.

Space Considerations

The types of classroom and lab spaces required for career technical education vary widely based on the program and activities, which take place in the learning environment.

The Design Professional should work closely with the appropriate LEA representative to determine the space, furniture, furnishings, and equipment needs of the career technical programs offered. Spaces that are adaptable, flexible, and accommodate an ever-changing curriculum should be incorporated. To meet these needs, Applications Labs have been included in these standards and guidelines in lieu of subject specific spaces. Refer to Chapter 6 for illustrations of these spaces.

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