

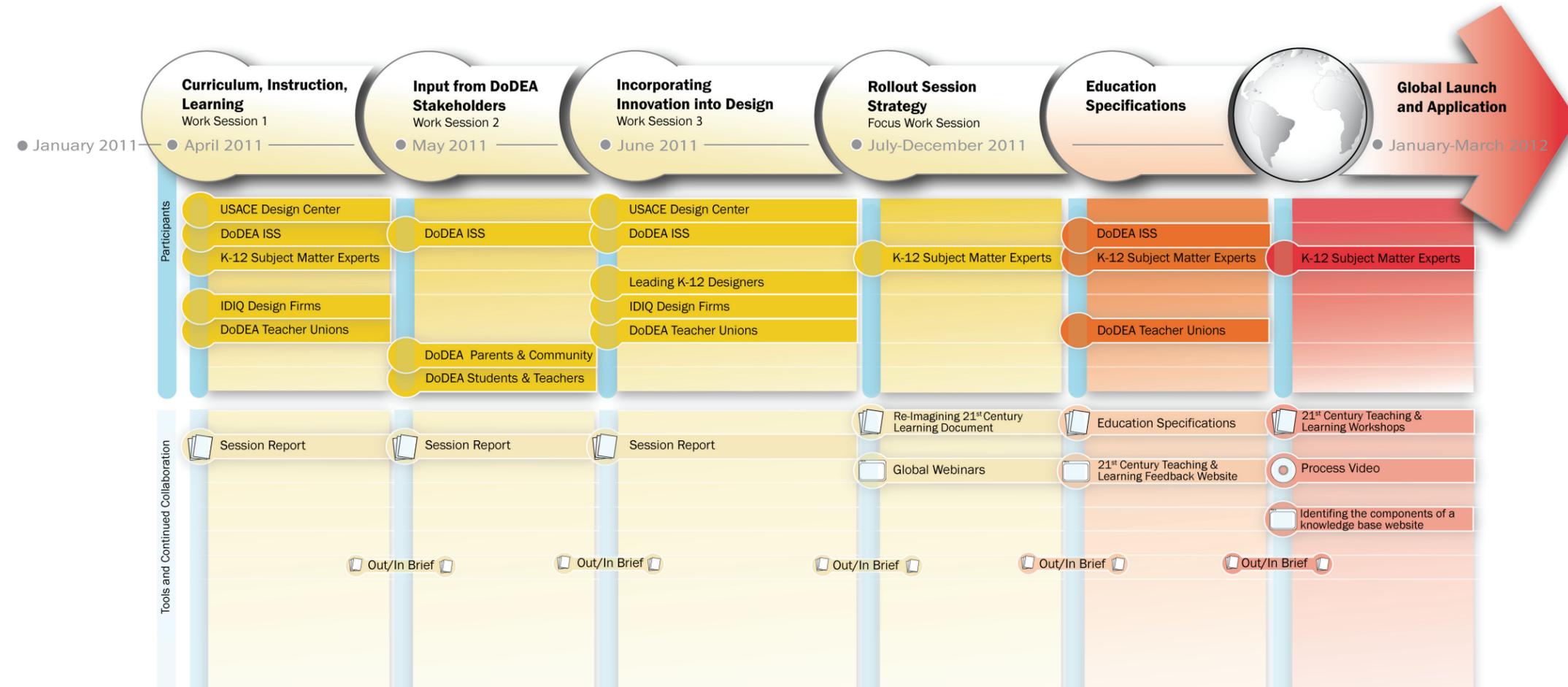


*Work Sessions #1, #2 and #3 Consolidated Report*

*Issued March 20, 2012*

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**PROJECT PROCESS**

The activities illustrated in the timeline above fulfilled a directive from the Department of Defense Education Activity (DoDEA) Director Marilee Fitzgerald to research and implement 21<sup>st</sup> Century curriculum and facilities throughout DoDEA’s global portfolio. This included the following exercises:

1. Over 70 education thought-leaders convened from across the United States to envision 21<sup>st</sup> Century education including instruction, facilities, and policy.
2. Second, a deep look was taken at the future of education within DoDEA, from the perspective of teachers and students, from parents and community, and from the Instructional Systems Specialists (ISS). There were many parallels between the findings of Work Session 1 and Work Session 2.
3. Participants from the first two work sessions assembled to join with leading school planners and architects from across the country to develop facility concepts and plans for 21<sup>st</sup> Century schools.

4. Rollout strategy sessions were convened that involved DoDEA teachers, educators, union reps, staff, facilities, and leadership as active participants, as they had been throughout the project process.
5. These ideas were developed into updated education specifications.
6. The global launch and application will be used to guide design of the next generation of sustainable Facilities for 21<sup>st</sup> Century learning.

This document provides a consolidated overview of the materials created for the above exercises to date. These exercises were performed in order to research and consecutively evolve the topic of 21st Century education. This document should not be looked to for curriculum development, education specifications, nor school design because those were subsequent activities to the exercises recorded by this document.

# Facilities for **21<sup>ST</sup>** Century Learning

## WORK SESSION #1

On April 4-7, 2011, some of the most highly-regarded thought leaders in 21<sup>st</sup> Century K-12 education gathered for a collaborative brainstorming session. Their task: to collaborate with DoDEA to provide a vision for education based on best-practices and promising new trends that promote student success. This vision will impact the development of more than 100 DoDEA schools that are slated for replacement or renovation in the next five to seven years.



### THEMES

From this workshop, four major themes emerged. Outlined below, these themes set the framework and tone for exploring 21<sup>st</sup> Century education. The four themes are:

**Differentiated Learning:** Students are individuals with unique learning requirements. To facilitate more effective and accelerated rates of learning, 21<sup>st</sup> Century education must respond to students' individual learning needs. Scholastic needs vary greatly and students have varying skill and interest levels. Some students work best as individual learners, while others prefer one-on-one or group arrangements. Additionally, some students may benefit from atypical space layouts. The current model of one instructor to many students in a 900 square-foot classroom box will not provide sufficient opportunities for personalized education. 21<sup>st</sup> Century models of learning must empower each student by optimizing learning potential through personalized, diversely facilitated instruction.

**Multiple Modalities:** To accommodate this wide array of learning styles, students also need facilities that adapt to different spatial and furniture arrangements, both inside and outside the educational facility. 21<sup>st</sup> Century education must think outside the traditional classroom configuration and instead provide spaces that can respond to a variety of concurrent instructional activities, including team-building events, small group sessions, individual learning, and peer presentations—all potentially simultaneously.



*A report summarizing the results of Work Session #1 was prepared by the Jacobs Advance Planning Group.*

*DODEA has an incredible opportunity to first define the instructional pedagogies it will deploy globally across its 194 schools, and then design and construct almost 60 percent of its school portfolio to support that pedagogy with innovative, flexible, sustainable, high technology, safe, and secure schools that embrace the digitally native students of today, preparing them for the knowledge-based economy they will most certainly face.*

Space shared between teachers, subjects, and even communities can provide enhanced investment opportunities in a wider array of room typologies without necessarily increasing the footprint and resultant cost of a facility. Instead, sharing spaces increases the usefulness of each room by keeping them fully utilized for more hours of each day.

**Multidisciplinary Teaching:** Teaching across disciplines directly supports the concept of differentiated learning while being directly supported by multiple modalities. Providing students ways of exploring new subjects within the context of familiar and more approachable topics can enhance each student’s access to, and interest in, their own individual learning journey.

*An excerpt video of speaker, Joel Klein, Vice President at News Corp, with vignettes from other Work Session #1 professional participants, is available for greater insight into non-DoDEA perspectives.*



The process of synthesizing subject content across disciplines enhances critical thinking skills. As teachers assemble lesson plans, they have opportunities to explore and integrate other subject matter while simultaneously receiving and providing expert peer input via collaboration. This enhances professional development.

**Real-world Skills Development:** Key to the success of 21<sup>st</sup> Century learning is the ability to prepare students to be competitive in the real world. To achieve this, learning environments must provide access to hands-on instruction, as well as opportunities for students to apply their knowledge, while still providing a rigorous focus on core curricular competencies.

Shifting the delivery method of core competency education to include related real-world problem solving, enhanced by multidisciplinary critical thinking, can provide efficiency in fulfilling all requirements.

# Facilities for **21<sup>ST</sup>** Century Learning

## **STUDENT-CENTERED EDUCATION**

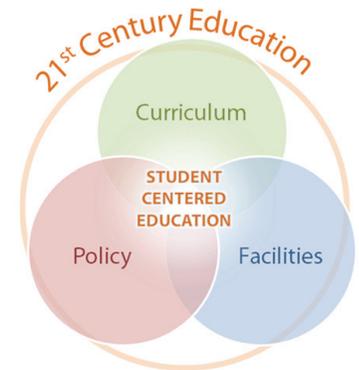
The themes described previously culminated in the overarching theme of *student-centered education*. This concept was pervasive and carried implications for change in three areas of 21<sup>st</sup> Century education, including curriculum and instruction, facilities, and policy.

**Curriculum and Instruction:** 21<sup>st</sup> Century education must provide a wide spectrum of curricular opportunity both for students to excel and teachers to grow professionally and personally. Instead of narrowing curriculum to enhance performance on standardized tests, learning environments should provide for broad-ranging, multifaceted, and interdisciplinary instruction; this approach will produce long-term decision-making and critical thinking skills applicable in the real world. 21<sup>st</sup> Century education should also offer flexibility in curricular pace and instruction, as well as provide real-time, interactive experiences. This facilitates an array of learning opportunities while also providing teachers the flexibility they need to customize their lesson plans.

**Facilities:** The physical spaces in which students learn, play, and grow can be extraordinarily influential. Many ideas were presented and discussed to describe the envisioned facilities needed to support and enhance 21<sup>st</sup> Century curriculum and instruction, including:

- **Adaptable and flexible** indoor/outdoor space to support multiple modalities
- **Hard and soft spaces** (both physically and psychologically)
- **Accommodations** for students, teachers, parents and community elements
- **Sustainability** that promotes leadership by example, supports community values, and leverages technology and competition
- **Safety and security** considerations that facilitate community accessibility, provide experiential consistency, address unique operational and installation requirements, and provide physical and psychological safety and protection

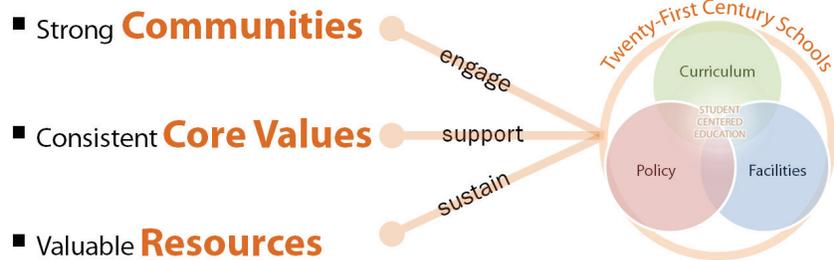
**Policy:** Often, policy limitations hinder, complicate, or eliminate the possibility for change. Therefore, any dialogue on propelling 21<sup>st</sup> Century education forward must supplant obsolete policy with proactive, evolutionary directives that support the ever evolving needs of children. Furthermore, policy change should provide for greater educator support, clearer communication of expectations, openness to new ideas, account for lessons-learned from mistakes, and diverse technologies that enhance and further facilitate the learning process. Policy change should allow for schools to share community resources while also creating spaces that inspire.



### CONCLUSION FROM WORK SESSION #1

In line with President Obama’s directive to strengthen our military families, Secretary of Defense Robert Gates has made a significant investment in DoDEA schools. Work Session #1 highlighted this unique opportunity for DoDEA to reassess their current path for 21<sup>st</sup> Century education.

By exploring best practices in curriculum, instructional technology, innovative and sustainable design, DoDEA began a process of re-visioning their mission. Drawing from the recognized expertise of Work Session #1 participants, DoDEA is poised to rise above many of the pervasive issues that plague so many non-military educational facilities in the United States. DoDEA’s strong communities, consistent core values, and access to valuable resources are all conducive to engaging, supporting, and sustaining a 21<sup>st</sup> Century student-centered educational model.



As stated by participants in Work Session #1, this effort represents DoDEA’s “shot at the moon.” Their charge is to be **bold, demand change**, and leverage that change to expand and **enhance diverse learning**. DoDEA has begun that journey.

## WORK SESSION #2

From May 6 through June 16, 2011, DoDEA stakeholder engagement was broadened as teachers, students, parents and community partners joined DoDEA's Instructional Systems Specialists (ISS) to contribute their input. The task: to target key groups with DoDEA connections, and obtain input on their vision for education—based on their experience, best-practices and promising new trends that promote student success. This vision will impact the development of more than 100 DoDEA schools that are slated for replacement or renovation in the next five to seven years.

### OUTCOMES

This work session tapped into a **vast reservoir of innovative thinking**. The input received during this six-week period confirmed **similar themes from Work Session #1**. As a result of this collaboration, a **deeper awareness of significant programs and opportunities was generated**. **Gaps in existing facility requirements were identified** that will better inform the purpose of Work Session #3.

### PARTICIPATION - THREE AUDIENCES

Comprehensive input was received with more than 500 entries submitted including ideas, concerns and general knowledge related to 21<sup>st</sup> Century schools. Teachers and students provided their input via the Intersect website established by DoDEA with more than 200 entries, including group and individual student projects. Parents and community partners contributed nearly 150 postings via a website blog created by DoDEA for this purpose. In addition, there were about 200 DoDEA's ISS participants providing global, cross-curriculum expertise via email, teleconference and the Intersect website.

### METHOD - CAPTURING THE DATA

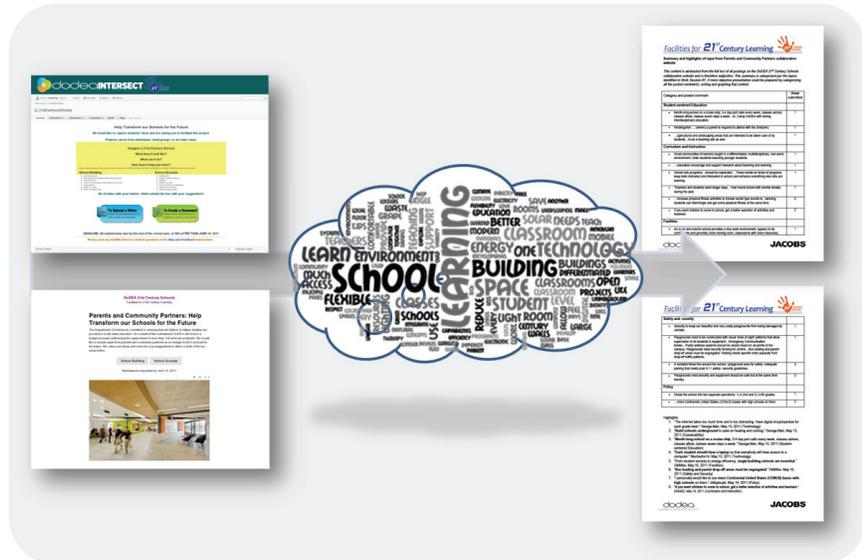
During this six-week work session, weekly downloads from the websites were captured, categorized and summarized. In addition, participation by the ISS was monitored and collated at the DoDEA headquarters. The process is illustrated by the following graphic:



*A report summarizing the results of Work Session #2 was prepared by the Jacobs Advance Planning Group.*

*DoDEA has an incredible opportunity to first define the instructional pedagogies it will deploy globally across its 194 schools, and then design and construct almost 60 percent of its school portfolio to support that pedagogy with innovative, flexible, sustainable, high technology, safe, and secure schools that embrace the digitally native students of today, preparing them for the knowledge-based economy they will most certainly face.*

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### METHOD - MAPPING THE CATEGORIES

DoDEA classified and sorted the ISS contributions from all the academic areas using four Quality Indicator Map Categories:

- Curriculum
- Instruction
- Assessment
- Environment

The adjacent graphic is an example of a categorized horizontal slice through the collected data.

This method provided the tools to academically categorize and evaluate quality and compliance of disciplines represented within the horizontal slice.

Curriculum	Instruction	Assessment	Environment
<ul style="list-style-type: none"> <li>• Individualized</li> <li>• Experience-based</li> <li>• Real-world life skills</li> <li>• Increase in flexible research opportunities</li> <li>• Role playing</li> <li>• Language immersion</li> <li>• Career / technical education</li> <li>• Hands-on instruction / less virtual</li> <li>• Enhanced athletic and fitness education</li> <li>• Performance training</li> <li>• Strength training</li> <li>• Exercise to &amp; from school</li> <li>• Technology training</li> <li>• Community service</li> </ul>	<ul style="list-style-type: none"> <li>• Student-centered</li> <li>• 21st century teachers</li> <li>• Expanded instruction</li> <li>• Year-round school</li> <li>• Classrooms for one</li> <li>• Encourage discussions</li> <li>• Encourage expression</li> <li>• Sharing of ideas</li> <li>• Small groups</li> <li>• One-to-one tutoring</li> <li>• Cross-age &amp; peer tutoring</li> <li>• E-textbooks</li> <li>• Paperless classrooms</li> <li>• Parents in schools</li> <li>• Special interest clubs</li> <li>• Individual mobile learning devices</li> </ul>	<ul style="list-style-type: none"> <li>• Individualized &amp; equitable</li> <li>• Adaptable to meet the needs of each child</li> <li>• Track progress via wikis</li> <li>• Technology assessment</li> <li>• Virtual tutoring</li> <li>• Higher than 2.0 grade requirement</li> <li>• Electronically assignments &amp; feedback</li> <li>• Teacher professional development</li> </ul>	<ul style="list-style-type: none"> <li>• Variety of space types</li> <li>• Think-tank spaces</li> <li>• Living classrooms</li> <li>• Learning gardens</li> <li>• Performance spaces</li> <li>• Dedicated science spaces</li> <li>• Natural light</li> <li>• Sound attenuation</li> <li>• Accommodating of all disabilities</li> <li>• Technology infrastructure</li> <li>• VPN &amp; cloud computing</li> <li>• Integrate sustainability</li> <li>• Recycling and renewable energy</li> <li>• Passive heating/cooling</li> </ul>

### METHOD - CORRELATION OF KEY VARIABLES

The input received from all three sources: teachers and students; parents and community partners; and ISS was further analyzed and processed to





## **WHAT WAS LEARNED**

**Student assessment** should be (1) individualized, (2) more frequent, (3) more qualitative and (4) provided to students more quickly for on-the-fly adjustment for optimized performance.

**Teacher professional development** should be expanded to better prepare teachers for paradigm shifts in (1) curriculum, (2) technology, (3) collaboration, and (4) broadened participation.

**Real world experience for students** is important for academic achievement in a student-centered delivery model and can be achieved through an integrated curriculum, hands on learning, and access to a variety of educational environments.

Output from Work Session #2 is in large part **aligned with many of the conclusions of Work Session #1**. This alignment is considered in many ways to be outside the traditional approach to current educational delivery methods, and a conclusion that can be drawn is while there is alignment on 21<sup>st</sup> Century education, until DoDEA's 21<sup>st</sup> Century Schools initiative, **there was not a comprehensive mechanism for implementation** where instructional pedagogy, technology, curriculum, and facilities are designed to work together to support this new paradigm in instructional delivery.

**Work Session #2 provided significant value to DoDEA.** The process of soliciting input from stakeholders conveyed DoDEA's need for and expressed appreciation to those participants. Indeed, the active participation from a comprehensive spectrum of global stakeholders produced broad buy-in from a representative body of participants. The relevant data received will be used to inform the evolution of education specifications. Ultimately, the process highlighted the need for facilities space-type "gap" analysis so that the new schools in the 21<sup>st</sup> Century will improve over their predecessors.

## **CONCLUSION FROM WORK SESSION #2**

By broadening stakeholder engagement and soliciting input regarding experience, best practices and promising trends for school design, DoDEA has extended the process of re-visioning their mission. From all perspectives, the additional time and effort spent to collect broad stakeholder input was a value added exercise for DoDEA that will provide far in excess of the resources expended and present an accessible and visible platform for participation. Furthermore, the input gathered enhanced the understanding of what needs to be accomplished from a broad-based user perspective. Most importantly, this effort has expanded the real-world body of information from which architects and engineers can draw for design inspiration.

# Facilities for **21<sup>ST</sup>** Century Learning

## WORK SESSION #3

On June 21-24, 2011, some of the most highly-regarded design leaders of 21<sup>st</sup> Century K-12 facilities gathered for a collaborative forum: **Incorporating Innovation into Design**. The purpose of the sessions was to integrate the creative results of Work Session #1 with the ideas and perspectives discussed in the results of Work Session #2, to achieve options for facility design. These results will impact the development of more than 100 DoDEA schools that are slated for replacement or renovation in the next five to seven years.



### OUTCOMES

The results of Work Session #3 provided direction for DoDEA's Facilities for 21<sup>st</sup> Century Learning. These facility responses were centered on space types and facility organization for both primary and secondary schools. Specifically, the work session accomplished the following:

- Provided an opportunity for leading school designers to discuss current thinking on facility responses to 21<sup>st</sup> Century learning through the presentation of examples.
- Provided the subject matter experts opportunity to discuss educational paradigms and craft a flexible space topology.
- Developed ideas for accommodating future change.
- Provided direction for an environmentally sustainable facility.
- Developed direction for the overall organization of spaces to enhance the learning environment.

The outcome from the work session provided general direction and clarity for updating and improving the current DoDEA Educational Specifications.



*The Jacobs prepared a report summarizing the results of Work Session #3.*

*DoDEA has an incredible opportunity to first define the instructional pedagogies it will deploy globally across its 194 schools, and then design and construct almost 60 percent of its school portfolio to support that pedagogy with innovative, flexible, sustainable, high technology, safe, and secure schools that embrace the digitally native students of today, preparing them for the knowledge-based economy they will most certainly face.*

### GUIDING PRINCIPLES - FACILITIES

Resulting from continued visionary dialog, the participants developed three guiding principles that represented the most prominent and significant key points for Facilities for 21<sup>st</sup> Century Learning— recognized as consistent with existing DoDEA Education Guiding Principles and the DoDEA Mission and Vision:

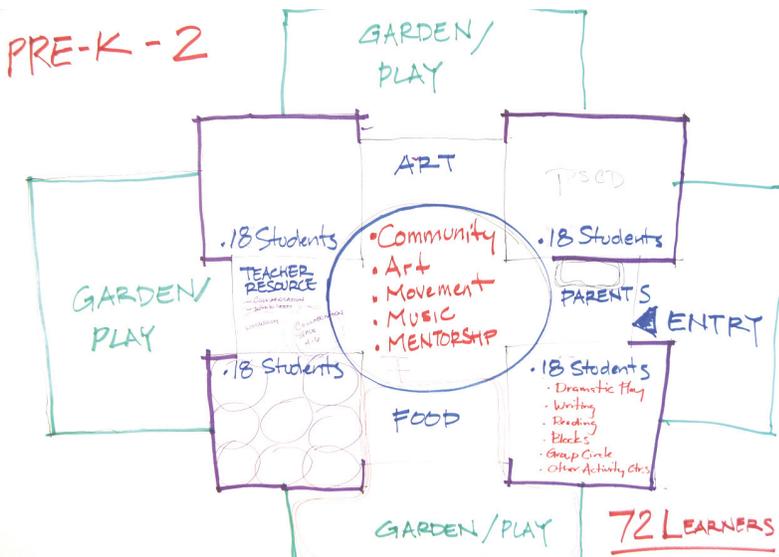
1. **Provide Student-Centered Facilities for all learners**
2. **Be Flexible and Adaptable**
3. **Be Global Community-Centered - within the school and encompassing the local and global community**

### COMPONENT DEFINITIONS

Work Session #3 evoked sustained dialog about the facility components for 21<sup>st</sup> Century education. Participants considered the Neighborhood model and Core Spaces to be primary components for 21<sup>st</sup> Century education facilities.

#### Neighborhood Model

Based on ideas originated during Work Session #1, and reinforced during Work Session #3, “Neighborhood” model evolved as a recurring theme or concept. The Neighborhood provides learners an atmosphere that provides for both group and individualized learning opportunities. The Neighborhood is the home of flexible and adaptable spaces for a small community of learners and provides a wide variety of spaces. Neighborhoods can also include smaller or dispersed elements of traditionally central functions, such as administration, counseling, and labs. Neighborhoods should ideally have a small commons or gathering space which can help solidify a sense of community.



# Facilities for 21<sup>ST</sup> Century Learning

## Core Spaces

The Core Spaces are considered to be the shared activity spaces, as well as the center of school and community activity. The following list of spaces and definitions represents what was most often allocated as Core Spaces during team breakout sessions: The Commons, Athletics/PE, Performance, Community Spaces, and Food Preparation.

## Other Specific Space Types

Participants considered a variety of types of spaces during Work Session #3, both in break-out group settings, as well as when collaborating in teams. Many of these spaces were recommended for placement within the Neighborhood once that model was developed:

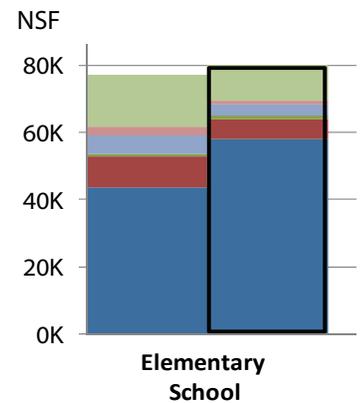
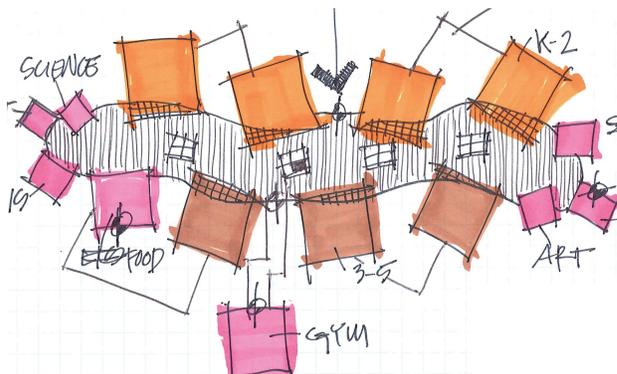
- Learning Studios
- Language Arts
- Early Childhood
- Information Center
- Food Court
- Small Group Spaces
- Math / Science
- Educator Spaces
- Technology

## GAP ANALYSIS

The comparison of the existing DoDEA space standards with the Facilities for 21<sup>ST</sup> Century Learning emerging recommendations was developed by Jacobs. This gap analysis was initiated during Work Session #2 and integrated the anticipated new spaces uncovered during Work Sessions #1, #2, and #3 into a comparison with the existing DoDEA space and area requirements. The potential changes to the DoDEA space standards are addressed in each of the specific concept designs for the four school types within this report.

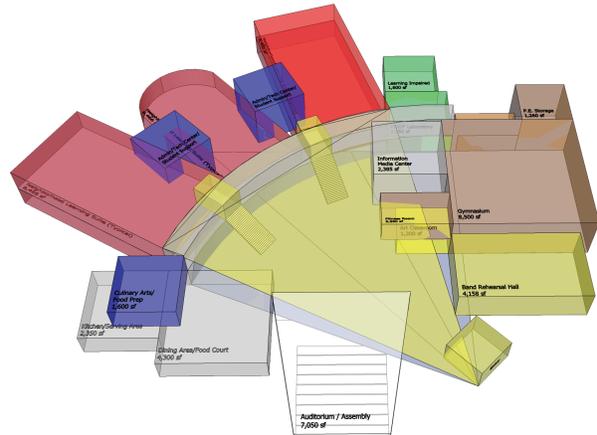
## CONCEPT DESIGNS

The work session culminated with developing the guiding principles and Neighborhood models into concept designs for four school types: Elementary School (K-5), Middle School (6-8), High School (9-12) and Unit School (preK-12). Based on the specific school space lists, each team developed adjacency diagrams, blocking and stacking diagrams, concept floor plans and perspective sketches.



### CONCLUSION FROM WORK SESSION #3

The activities of Work Session #3 provided a synthesis of the major themes for 21<sup>st</sup> Century education with the experience of DoDEA stakeholders that produced key insights into design precepts. These precepts for design of 21<sup>st</sup> Century schools include the following:



- Flexible “Neighborhood” organizational themes that include a variety of physical learning settings
- Shared Core Spaces (Outside the “Neighborhood”) for functions used by more than one Neighborhood, such as gym and auditorium
- Shared Commons Spaces for performance, presentation and gathering spaces—the “heart” of the school
- Moving some learning environments to the net-to-gross spaces (space typically unassigned circulation)
- Recognize the school facilities as learning tools
- Merging indoor and outdoor learning settings
- Recognize strategic role of moveable furnishings (FFE) in forming differentiated learning spaces
- Sustainable design elements including active and passive incorporation of sustainable design technologies
- Warm, safe, and secure design

In addition to these insights, the **quality of spaces and experiences** provided by the school design were considered important design factors and were incorporated into the concept designs for the DoDEA school types.

## **FOLLOWING STEPS**

Following the successes of the three work sessions, DoDEA next established a clear and concise direction for future school planning and design. The following steps for DoDEA 21<sup>st</sup> Century schools included building consensus around the key themes and identifying central organizing elements that set the stage for design criteria.

DoDEA and Jacobs then worked together to create **education facilities specifications** for 21st Century learning spaces that will serve designers for the next five to ten years. These design parameters are helping to guide the replacement, renovation and improvement of DoDEA schools. The results of these accomplishments were published on a dedicated website that is available to the public and provides for user feedback: "21<sup>st</sup> Century Education Facilities Specifications." DoDEA selected an online format for these updated education specifications and design manuals for accessibility, feedback, and the ability to make user-guided improvements. This process will continue with stakeholder input and further updates as may be required over time.

DoDEA is engaging in a global **professional development** initiative for teaching and learning that includes participatory on-site presentations with educators at their facilities and a website rich in resource tools and videos, exercises, reading list, an interactive blog, and Internet links to additional information regarding 21<sup>st</sup> Century learning.

DoDEA is also rolling out a **communications strategy** to convey its progress in 21<sup>st</sup> Century education to its political and civilian constituency. This strategy will be comprehensive and interactive, commencing with three primary components:

- Brand design guide, with logo and fonts
- Homepage for DoDEA's 21st Century education initiative
- Targeted briefings with an audience to include Congress, Department of Defense, students, teachers, parents, Instructional System Specialists.

Over time additional resources may be provided such as a quarterly publication, social networking, interactive educational tools and games, a calendar of events, and a research database for 21st Century education information.





## **CHALLENGES**

Some challenges remain in the implementation of 21<sup>st</sup> Century standards, particularly in relation to: the availability and use of technology, professional development of teaching staff, competency versus grade-based instruction, changes in assessment techniques, and extending the operational hours of schools (i.e. extending the school day or providing year-round school).

Another challenge is ensuring sufficient funds for furniture, fixtures, and equipment (FFE). This may require a shift in construction funding.

## **FUTURE DIRECTION**

The challenge of preparing all students for success—of implementing the objectives of 21<sup>st</sup> Century education—requires the collaborative effort of all school professionals. Some approaches for achieving this include:

- Call on DoDEA leaders to agree on goals for teaching 21<sup>st</sup> Century skills essential to the military community.
- Align curriculum with 21<sup>st</sup> Century education goals at all levels, including preK-12 schools, after-school and youth development programs, workforce development and training programs, and teacher education programs.
- Make proficiency in 21<sup>st</sup> Century skills the outcome of education, training and professional development at all levels.
- Develop partnerships with local communities to provide opportunities for students and educators to acquire 21<sup>st</sup> Century skills
- Build 21<sup>st</sup> Century education goals into long-term planning and budgeting for DoDEA.
- Appoint a “champion” for 21<sup>st</sup> Century learning within DoDEA to oversee the development and implementation of 21<sup>st</sup> Century learning methods.
- Develop the capacity of DoDEA administrators and school leadership teams to implement strategies for teaching 21<sup>st</sup> Century skills.
- Embed 21<sup>st</sup> Century skills curriculum into teacher preparation and professional development.

Providing a 21<sup>st</sup> Century education system to the children of America’s military families is the central challenge for DoDEA. Addressing this challenge requires dedicated and forward-thinking leaders and the full participation of all DoDEA staff.

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**JACOBS**