

**Envisioning 2021 Classrooms
Classrooms of the Future**

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Team Members – Section 1:

Lavallee Brensinger Architects

We are dedicated to applying our design talent and management expertise to create "places" that enhance quality of life for our K-12 clients. It is our commitment to building vibrant communities that has inspired our concentration on the K-12 building type.

Our success is founded upon our steadfast commitment to client service. In a world where quality and service are commonly promoted, we actually deliver them - consistently.

Our work is focused on our clients, not ourselves. We embrace each client's unique needs and aspirations. We work collaboratively, creating "places" that reflect our client's values and enrich their relationships and our integral role as a member of each client's their trusted advocate and friend.

Perhaps our approach to our clients and their projects is best summarized by our Mission Statement:

Your Mission inspires us.

Our creativity and knowledge empower you.

Together we achieve excellence.

Our dedication to our clients extends to our global environment. As leaders in environmentally sustainable design, our team members are experts in LEED, CHPS (Collaborative for High Performance Schools), and renewable energy systems.

KI: Krueger International Inc.

Since the introduction of our first product in 1941, a steel folding chair, KI has recognized market needs and responded with welcome furniture solutions – products that skillfully support the success of customers in higher education, K-12, healthcare, business and government.

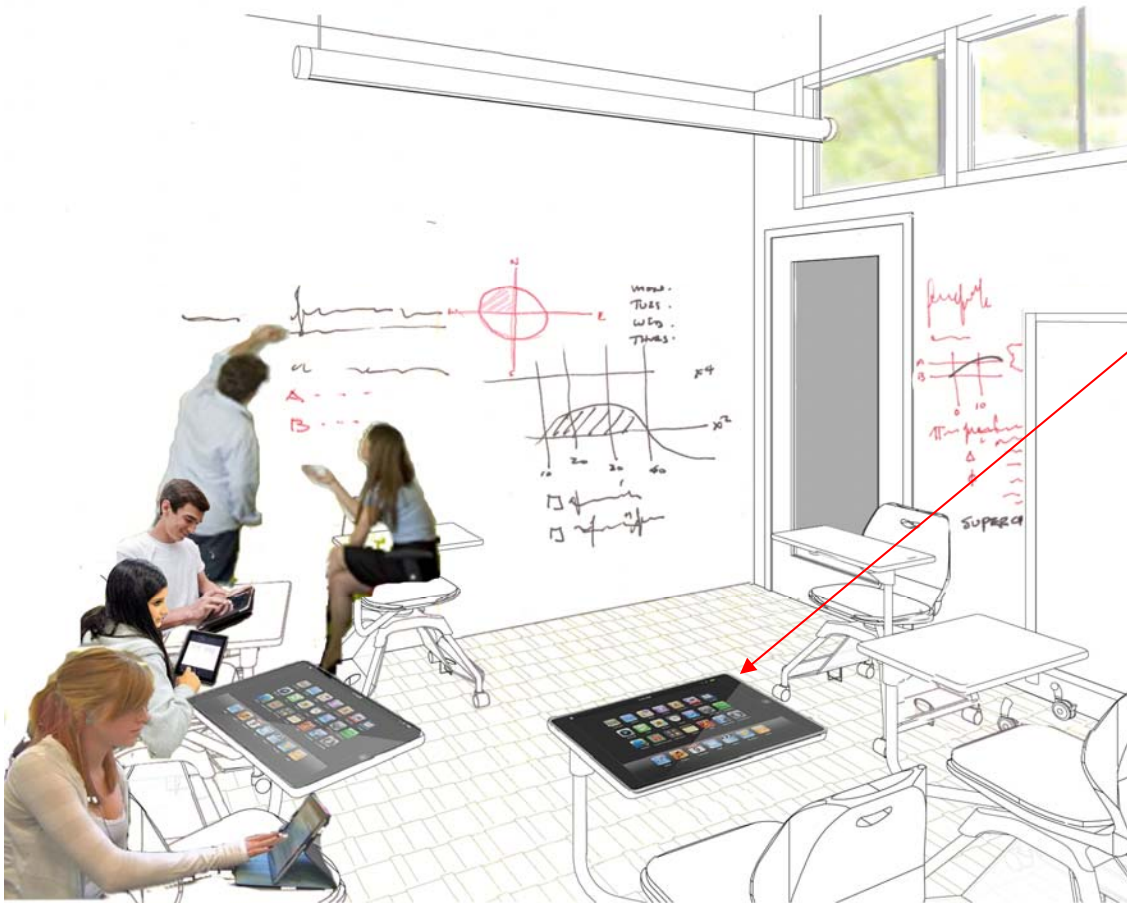
Our furniture innovations reflect a desire to be our customers' market resource and to help them make smart furniture decisions. Our strong market understanding is why KI customers throughout the world continue to rely on our trusted expertise to create solutions that fit their environments, brilliantly.

Pro AV Systems, Inc.

Pro AV is a New England based company that focuses on New England schools and businesses. We have built our company on a solid foundation of customized design and professional installation of systems from the most trusted names in the industry. Our customers receive full service, support, and training from our experienced and educated staff. Our services include sales, engineering, training and digital display design. We will take the time necessary for a detailed analysis that will match equipment and functionality to real world situations providing our clients with the ease-of-use they so much desire. Our sales team and engineers will design solutions and recommend products that will fulfill our clients technology needs now and can support and compliment additional technology in the future.

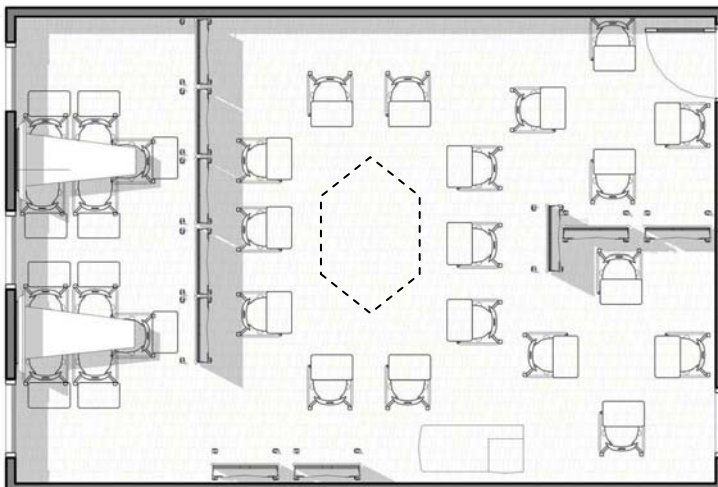


Example Layout 2: Combining new tools with student skills and evidence-based individual learning styles will allow for fully flexible space and surfaces for today, tomorrow, and future classroom evolution.



Tablets:

- The future may hold in store tablet arm chairs that become student tablets for use in the classroom; to supplement hand-held devices



Flexible space allows for the formation of small groups to engage in learning teams and consider problems, conduct research, and / or learn at their own pace. The teacher, or mentor, provides guidance and conducts evaluations by physically visiting each group or engaging through electronic devices with programs such as FaceTime.

Small group space can be defined by using movable interactive white boards that provide a surface for written and graphic communication skills, as well as saving the information to electronic devices for future reference and student evaluations.



Classroom Examples – Section 2

Example Layout 1: Our team envisions a classroom that builds on the evolution of today's technology, social media, and everyday student learning; both formal (school) and informal (society).

Idea Paint:

- Entire wall surfaces around the classroom are writable to maximize information

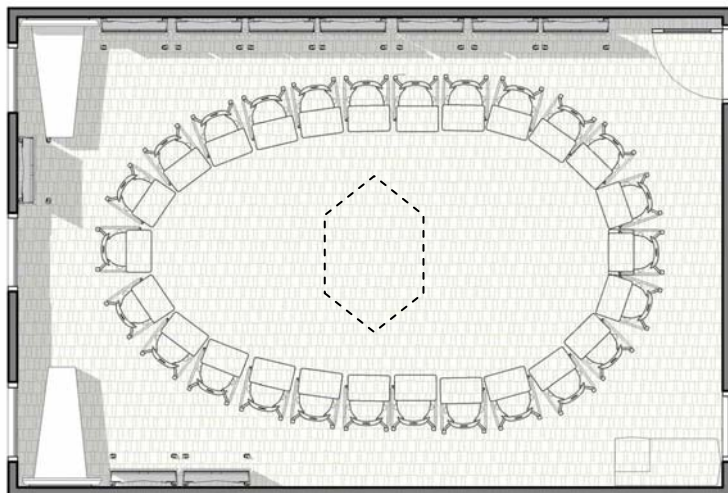


Information kiosk:

- Running news media
- Remote educators
- Real-time display of student work as it happens
- School message board
- Viewed from all areas regardless of room configuration

Movable Interactive Whiteboards:

- Real-time display of student work as it happens
- Paperless display of student work.



There will always be a need to meet as complete group of students to engage as a whole class, to summarize subject matter, review schedules, and class-wide discussions. The teacher, or mentor, provides guidance and conducts evaluations by walking around the class or engaging via ceiling mounted monitors with programs like FaceTime.

Movable interactive white boards and other support furniture can be aligned around the perimeter of the space to allow student-centered activities, project-based demonstrations, and interactive presentations; both in class and connected to the world via overhead monitors.

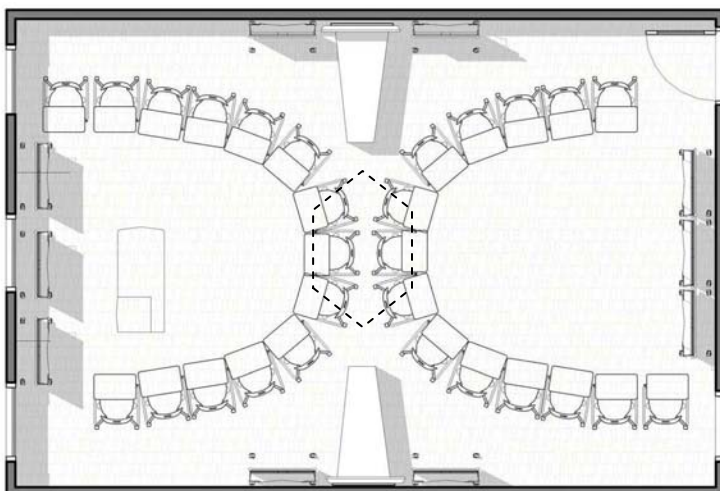
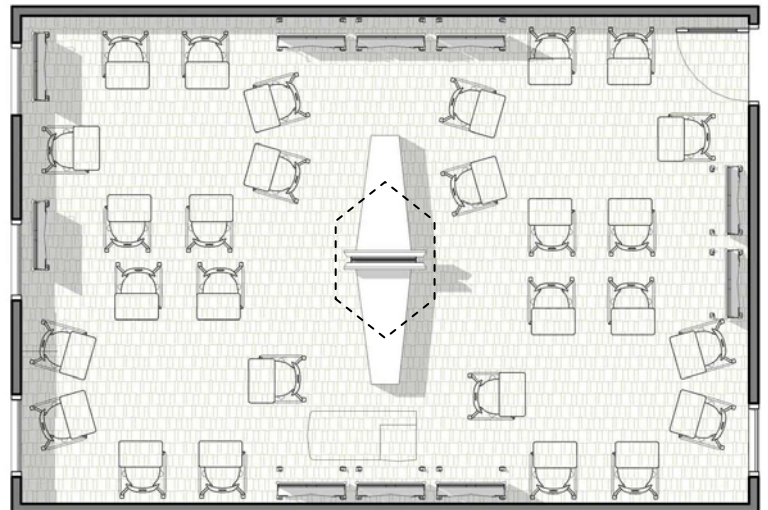


More Example Layouts:



Flexibility options are a requirement for evolving pedagogies; especially in a classroom designed for today's education. By 2021, the fully-flexible environment will be common place and the "classroom" as we will come to know it will be able to take place anywhere; and at anytime.

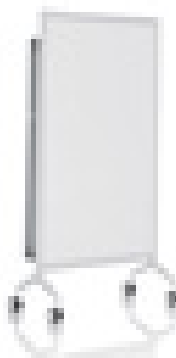
The KI Learning 2 seating provide a student chair option that is so individualized and ergonomically comfortable, that the need to soft seating within the space is combined with the task seating.



Full flexibility also allows dividing the classroom into small and large groups. This can address future class sizes and/or the introduction of multiple subject discussions, and multiple mentors (teachers) within one space; physically or digitally.

As demonstrated, all furniture and equipment is easily moved via casters and can be adjusted before, during, or after class time.

This allows the 1200 square feet to re-invent itself as pedagogy, technology, and curricula evolves over time; resulting in a living space that is able to evolve as student needs continue to change.



List of Furniture:

KI Learn 2 Seating:

Mobile, adaptable seating that fits student needs and preferences for collaborative and interactive learning environments. Adept moveability, flexibility, and individuality:

- Facilitates individual work or small to large group teaming
- Fully adjustable, left & right handed worksurface, with a swivel seat
- Adapts to each student's personal space and provides customized comfort for a student-focused, ergonomic solution
- Current options include multiple shell materials, upholstery, and accessory rack with water bottle holders and bag shelf

KI All Terrain Mobile Instructor's Desk:

Mobile desk combines the functionality of the workstation, for in-between class sessions, and the mobility of the active classroom. The following features allow for ultimate flexibility:

- Binder tower works with an angled surface to prop materials for lecturing
- Small-scale unit casters for exceptional mobility
- Modesty panel for privacy
- Grommets discreetly hide wires in storage tower; keeping everything organized, clean, and neat.

KI All Terrain Markerboards:

Mobile markerboards provide for flexibility and student-focused work surfaces for collaboration in small and large group settings. These also provide a screening option to define work areas.

Future versions may include wireless connections to technology systems, and touch screen surfaces for real-time writing and saving to the network, or cloud, for future reference.

Castors provide for ultimate mobility and stability throughout the classroom.



KI Monitor Arm:

Providing a ceiling-mounted, adjustable, monitor arm to provide flexible viewing of multi-media information will allow the classroom the flexibility in configuration without restraint from visual wall locations.



KI Backbone Media Platform:

With a diverse range of portable media devices being used in schools, there is an increasing demand for media sharing and technology integration within furniture solutions.

Backbone is designed to respond to this growing demand. This is a media-sharing platform that supports technology, optimizes collaboration, and enhances flexibility.

We propose using the console only option that allows for the KI Learning 2 seating to roll up to the console for optimum flexibility without the need for additional tables or work surfaces.



Wall Covering:

IdeaPaint turns virtually anything you can paint in the classroom into a high-performance dry-erase surface, giving you and your students the space you need to collaborate, interact and discover new ways of learning. No matter where you use it, minds will open and fill with big ideas.



Technology Equipment:

With a diverse range of portable devices, we propose using a range of hand-held products for teacher-student collaboration. Laptops, and tablet devices.



2021 Classroom Vision Summary – Section 3:

Our team envisions a 2021 classroom that can take place in any space, provided a minimum level of characteristics are present:

- Wireless technology connectivity
- Writeable surfaces
- Display surfaces
- Flexible, moveable, and comfortable furniture
- Good indoor environmental quality
 - Lighting, natural and artificial
 - Temperature
 - Fresh air
 - Acoustics

With these components, any space can accommodate the collaborative learning of today and the future. As classrooms evolved from the static 2000 era spaces to the freedom of 2012, the transformation has been made possible by the same innovations that have changed the way society communicates, socializes, conducts global business, competes, and collaborates:

- Informal use of place
- on-demand technology

Allowing the learning environment to respond to each individual student within the classroom will provide better educational outcomes. Considering individual learning styles and abilities, flexible space will empower the mentor (formally known as the teacher) to assist each student in collaboration with other students in their understanding and demonstration of core and special skills.

In the same way of the chalkboard, classroom staples will no longer exist; such as:

- White boards that limit the writable surface will be replaced with wall coatings that allow for complete use of entire surfaces to communicate;
- Paper will be tossed aside for interactive electronic communication and display;
- Core subject problems will be creatively solved by teams of students; and
- Everyday technological skills will be used to gather information faster, and in more depth, than any one person (or book) can provide.

Flexible classroom environments will encourage spontaneous thinking and problem solving abilities; leadership from interpersonal and self-directed skills; global awareness and time-zone communication; workplace team work; and social skills. Each classroom, or physical place, needs to be designed to meet these flexible measures of self-dependence as a space. 2021 schools will need to have classrooms that can be used for multiple subjects, multiple use, multiple size work groups, and multiple adaptations as learning and mentoring continue to evolve.



Anywhere learning through interpersonal collaboration



Global collaboration and communication



World of information at our fingertips



Global collaboration and communication



Using FaceTime type programs to connect students and educators on-line



2009 TSA trophies:
Technology students at a New Jersey High School have received a patent for their invention – The Pressure Sore Relief System (PSRS)
educationnews.org

The I-Pad and I-Pone changed the world as we know it. Our students are digital natives who are currently able to surpass educators in the use of technology. 10 years from now, this will not be the case. The digital natives will enter the education fields and join the students on a playing field that is much more level. This merging of student and mentor in 2021 will bring the classroom to a whole new level of interaction; as educators join the students in intuitively working with technology. Educators will also be less apprehensive to implement on-line learning and web-based curriculum to enhance and/or supplement the physical learning space.

As on-line curricula is introduced into the classroom, small groups of students and mentors will have a number of interconnected educational conversations, workshops, and problem-solving sessions simultaneously taking place; within the classroom and beyond. Students will engage their peers sharing academic projects for longer periods of time, access resources and colleagues on convenient schedules, and upload shared information to the cloud for continuous access. Personal digital assistant (PDA) devices will be owned and personalized by each student; yet share the programs, applications, and software necessary to conduct their school work from anywhere and at any time.

Sustainability has had a great impact on educational design since the late 1990s. Concerns over preserving natural resources, harvesting renewable energies, and the implementation of recycling has entered into the life-styles and learning styles of our students and educators. Over the next 10 years, we believe this trend will increase and create demands to energize educational space utilizing solar, long-life fuel cell batteries, and power over Ethernet.

The use of daylight harvesting, more energy-efficient systems, and other operational cost reducing strategies will allow funding for the classroom to become more focused on the student and less on the physical environment.

As the cost of providing and operating digital tools continues to fall, students and educators will be able to ensure that everyone involved with the high school has a personal device. The costs for such devices will also be offset by the disappearance of text books, reams of paper, and the need for hard-copy communications.

Parents, siblings, and the community will be engaged within the classroom through technology; creating another level of safety, security, and comfort to the student through constant communication and support. The weaving together of school and community will bring all community resources into the classroom; such as public libraries, higher education, business partners, and entrepreneurs looking for innovations and inventions from the free thinking minds of our high school students.

Our proposed classroom encourages and supports the connection between the 2021 high school classroom and the world; where students are active in both learning and real world problem-solving.