21st Century Questions
For & From
21st Century Clients

Seattle AIA CAE
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Overview

- **Questions**—From Clients, For Clients
- **What Works**—Findings from Research, From the Field
- **A Metaphor**—The Yardstick of Planning
- **What Next**—For Learners, For Planners, For the LSC
To be able to ask a question clearly is two-thirds of the way to getting it answered.

—John Ruskin. 1819 – 1900.
The point...is to become more adept in inventing imaginary futures ... to rethink the assumptions we use to understand the present.

A change agent is an individual who influences client’s innovation-decisions in a direction deemed desirable to secure the adaptation of new ideas....

The power of the unaided individual mind is highly overrated. Much human creativity is social, arising from activities that take place in a social context in which interaction with other people and the artifacts that embody collective knowledge are essential contributors.

Changemasters take all the input about needs and opportunities and use it to shake up reality a little, to get an exciting new idea of what’s possible, to break through the old pattern and invent a new one.

... resistance to change is human and has been confronted successfully in numerous other settings. The study of individual, organizational, and cultural change is a sophisticated field that can inform the design of transformation strategies....

—Engage to Excel: Producing One Million Additional College Graduates with Degrees in Science, Technology, Engineering, and Mathematics. President’s Council of Advisors on Science and Technology. February 2012.
What will the lab of the future be:

• A student-directed studio?
• A place for lab/classroom gaming?
• A venue for new connections to the humanities and the arts?
• A point from which to connect to collaborations within and beyond the campus?
For most of the 20th century, learning had focused on the acquisition of skills or transmission of information or what we define as “learning” is about. ... we want to suggest that the 21st century requires us to think of learning as the practice of becoming over and over again. ...to embrace change and focus on becoming as central and persistent elements of learning.

2015 AIA Conference

WE HAVE NOW LOST OUR STATUS/EDGE AS THE #1 TEACHING & LEARNING ENVIRONMENT IN THE WORLD.

WHAT IF WE CREATE A LEARNING ENVIRONMENT THAT WILL SIGNIFICANTLY SHAPE FUTURE LEADERSHIP TO TRANSFORM THE WORLD?

HOW DO WE CONVINCE OUR CLIENTS TO EMBRACE CHANGE AND UNDERSTAND ITS IMPLICATIONS?

HOW DO WE CONVINCE EDUCATORS TO THINK BRAVELY AND BROADLY ABOUT THE LEARNING ENVIRONMENT?
Questions—From Clients, For Clients

- What Works—Findings from Research, From the Field
- A Metaphor—The Yardstick of Planning
- What Next—For Learners, For Planners, For the LSC
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What Works—Findings from Research, From the Field
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What Next—For Learners, For Planners, For the LSC
Research indicates that…compared with students in traditional lectures, students who play an active role in the pursuit of scientific knowledge learn more and develop more confidence.

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What do we want our students to become?

• Fearless, confident, independent learners who don’t shy away from intellectual challenges

• Effective collaborators who embrace team work

• Good moms and dads, good citizens, politicians, bankers, voters, doctors, etc...people have a real understanding of science and scientists.
Success may also hinge on the extent to which … students participate in activities—such as peer-to-peer support, study groups, social activities, tutoring, and mentoring programs—that can promote academic success and social integration.

How will we know?

• Improvements in retention and persistence within the class, within the major, and within the university
• Improved class performances in the present and subsequent courses
• Spontaneous and enhanced group formation and study groups
• Observation of signs of self-assessment and personal responsibility for learning
• Growth in community and collegiality through enhanced enrollments in discipline specific clubs.
Problem solving] ...is required whenever there is a goal to reach and attainment of that goal is not possible either by direct action or by retrieving a sequence of previously learned steps from memory. That is, during problem solving the path to the intended goal is uncertain.

--National Research Council. 2011
What spaces enable those experiences:

• Authorable, responsive, flexible spaces
• Spaces that invite the articulation and representation of provisional ideas and hypotheses
• Spaces that support changing, responsive collective leadership
• Spaces that support rebounding from impasses and failures.
What kind of environment nurtures creativity?

• Freedom, novelty and a sense of being at the edge
• A critical mass of creative people
• A competitive atmosphere
• Mentors and patrons
What experiences make that happen?

- Feeling comfortable in an open, accepting work and classroom environment that encourages experimentation and risk-taking
- Having easy access to cutting-edge visual technologies and staff with relevant technical expertise.
Above all, seeking engagement in education requires teachers to take a step back from the expected and to develop—often spontaneously—responses to the occasion.

The most engaging and creative teachers are often those who are prepared to take risks; to try something new; and to listen, reflect, and engage students in the processes of learning and decision making for schools. 2016
Business and political leaders are increasingly asking schools to integrate development of skills such as problem solving, critical thinking, and collaboration into the teaching and learning of academic subjects. Collectively these skills are often referred to as "21st century skills" or "deeper learning."

The [planning] team functioned in a manner strikingly similar to the behaviour we hoped the design would support. We acted and reacted as an interdisciplinary and inter-dependent organism. Discussion and interaction became essential for the successful realization of our concepts. In formulating new strategies, we relied on the input and free exchange of ideas from our colleagues.

The societal & scientific problems are complex –

Multi-level, multi-factorial, interacting influences

http://www.shiftn.com/obesity/Full-Map.html
Collaboration Is Complex
Multi-level Contextual Factors

Interpersonal
- Members' familiarity, informality, and social cohesiveness
- Diversity of members' perspectives and abilities
- Ability of members to adapt flexibility to changing task requirements and environmental demands
- Regular and effective communication among members to develop common ground and consensus about shared goals
- Establishment of an hospitable conversational space through mutual respect among team members

Organizational
- Presence of strong organizational incentives to support collaborative teamwork
- Non-hierarchical organizational structures to facilitate team autonomy and participatory goal setting
- Breadth of disciplinary perspectives represented within the collaborative team or organization
- Organizational climate of sharing
- Frequent opportunities for face-to-face communication and informal information exchange

Societal/Political
- Cooperative international policies that facilitate exchanges of scientific information and TD collaboration
- Environmental and public health crises that prompt inter-sectoral and international TD collaboration in scientific research and training
- Enactment of policies and protocols to support successful TD collaborations (e.g., those ensuring ethical scientific conduct, management of intellectual property ownership and licensing)

Technological
- Technological infrastructure readiness
- Members' technological readiness
- Provisions for high level data security, privacy, rapid access and retrieval

Intrapersonal
- Members' attitudes toward collaboration and their willingness to devote substantial time and effort to TD activities
- Members' perception for the complexities and tensions inherent in TD collaboration
- Participatory, inclusive, and empowering leadership styles

Physical Environmental
- Spatial proximity of team members' workspaces to encourage frequent contact and informal communication
- Access to comfortable meeting areas for group discussion and brainstorming
- Availability of distraction-free workspaces for individualized tasks requiring concentration or confidentiality
- Environmental resources to facilitate members' regulation of visual and auditory privacy

Collaborative Effectiveness of Transdisciplinary Science Initiatives
Transdisciplinary Education Competencies

- Explain *why* the complex, multifactorial nature of societal problems requires a transdisciplinary approach.
- Describe *how* social, economic, behavioral, environmental, & biological conditions *contribute* to social/health outcomes using theoretical approaches *drawn* from diverse disciplines.
- Distinguish the *features* of transdisciplinary collaboration.
- Define problems in a transdisciplinary way and develop shared conceptual frameworks from discipline-specific theories & models.
- Develop and apply processes that integrate and promote transdisciplinary perspectives, contributions, & collaborations.
- Apply transdisciplinary solutions to societal problems using appropriate analytical tools drawn from social work or other disciplines.
- Demonstrate the ability to *communicate* transdisciplinary research evidence to key stakeholders to influence policy & practice.

Reducing Conflict

“Prenuptial Agreement” for Scientists

- Offers discussion questions to help collaborators commence a project by anticipating, discussing, and resolving possible areas of disagreement common to many collaborations.
- Helps them define expectations related to goals, roles, products, authorship, etc.

Example Questions:
- What are the expected contributions of each participant?
- What will be your mechanism for routine communications among members of the research team (to ensure that all appropriate members of the team are kept fully informed of relevant issues)?
- What will be the criteria and the process for assigning authorship and credit?
- When and how will you handle intellectual property and patent applications?
- How and by whom will data be managed? How will access to data be managed? How will you handle storage and access to data after the project is complete.

How can learning spaces support inclusion, access, and diversity?

How should faculty development & learning spaces interact?

Why critical & timely?
- Institutional change is hard
- Cultural change is initiated by Fac.
- Universities have been unsuccessful at changing culture
- Faculty ARE the Administrators

How might it be addressed in planning?
- Academic planning must include effective strategies for faculty change
- Envision a faculty innovation lab for T&L
- Create feel learning comm. community

Choice
- Multi-functional
- Adaptive
- Non-institutional

Enabling
- Community building
- Naturalness of access
- Fosters team creativity
- Common ground
- Community scale
- Heart location
- Simple, plain, messy, tool

Science commons startup
- Playful
- Sleep
- Eat
- Ad hoc study
- Shabbat
- Pers. study
- "Life" community
1. What is the value of learning in place?
   - The social aspect

2. Does competency training & evaluation work?
   - Discipline specific
   - Peer review training more effective
   - Faculty are fearful of change because lack pedagogic fundamentals (cause of resistance)
   - Reduce faculty overhead & provide expert

3. Value proposition of University education
   - desirable - wanted
   - retired flexibility
   - economically viable

4. Are we measuring/assessing outcomes?
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Students: Diverse & Small

Choice:
- Multi-functional
- Adaptive
- Non-institutional

Enabling community-building
- Naturalness of access
- Fosters teams
- Creativity

Common ground
- Community scale
- Heart location
- Simple, plain
- Messy
- Toolset
FLASH LECTURE
knowledge in a FLASH
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Facilitate
Advocate
Educate
Agitate

Tools
- Engage every voice
- Create safe space for dialogue
- Accountability

Challenges = Opportunity
- Gender
- Race
- Religion
- Code
- Social norms
- Learning styles
- Economic status
- Life experience

Proactive
Out comes possibilities of inclusive space and design for the whole person

Reactive
How do you teach someone they can succeed?

1. Importance of environment
2. Common goal of individuals + groups
3. Overcome the past + tradition