

NEW LEARNING CALLS FOR A NEW DESIGN APPROACH

Institutional Design / Education - learning spaces (Michelle/Sally/Jill)

Examine the evolution of education spaces to move beyond the pretty picture, and learn steps to encompass the rapidly changing approach to design. See what changes in the education world have created for new requirements in the design world. Examine the evolution of education spaces from lecture to interactive, from static to dynamic, from institutional to diversified. Identify the physical characteristics that can affect student's cognitive and behavioral processes and recognize potential pitfalls in this complex and crowded design process.

Recent trends in higher education

Student population Although the number of young students has historically been growing more rapidly than the number of older students, this pattern is expected to shift dramatically over the next 17 years. The National Center for Education Statistics (NCES) predicts that future student populations will be a greater blend of older and younger students than ever before. According to their studies from 2006 through 2017 with only a 10% increase in student enrollment for those under 25 and a whopping 19% increase in student enrollment for those over 25. Of course these statistical predictions are based on the US population growth trends.

Green Design Conservation, sustainable practices and design, and green products are growing trends in all industries and higher education is no exception. Universities and colleges are continually investing in ways to conserve energy, looking for alternative energy solutions and resources, and implementing recycle programs throughout their campuses. More and more, new dormitories and other academic structures are being built to LEED certification standards while replacing antiquated systems with energy efficient technologies and equipment, thereby reducing energy consumption, costs, power, and the required space.

Technology More than any one factor, new and evolving technological innovations have had the largest impact on higher education, changing the way universities teach, students learn and the way they communicate and collaborate with one another. For instance, online degree programs and distance learning are now the norm at most universities and colleges worldwide, providing an avenue to education that was once unattainable for some and proving to be a profitable new market for higher education. Furthermore, new technologies are also promoting increased collaboration and impacting the way faculty and students communicate, creating new and exciting social networking venues that help to build connections between students (current and alumni) and the universities. Higher education marketing executives quickly recognized this venue as a powerful marketing tool to promote their academic programs to prospective students and help retain current students, while enhancing their brand thereby expanding the university's reach to millions of perspective students worldwide. Not to mention the cost savings generated by automated administrative procedures such as class registration and applications.

Globalization According to Dr. Tracey Wilen-Daugenti & Alva Grace R. McKee's paper titled *21st Century Trends for Higher Education Top Trends, 2008-2009* published by Cisco Internet Business Solutions Group, the demand for higher education globally has increased and will continue to grow. There are more than 100 million college students worldwide, new campuses are being built, and

existing campuses are expanding. Universities are competing internationally for resources, faculty, the best students, and education funding.

Mobility Just about every college student has a cell phone and/or a PDA. The freedom, convenience, and cost savings that mobile phones provide are invaluable to students, whether they are living away from home or commuting daily to and from school, home, and work. Mobile phones have revolutionized the way students and faculty address academic requirements. For instance smart devices, such as the BlackBerry and iPhone, have internet access that allows the students and faculty to interact in a virtual environment anywhere cell phone service is available. These tasks can include registration, downloading courseware, communicating with fellow students and instructors, remotely accessing computer files a student may have forgotten to bring to class, to setting up group study dates and more.

Innovative “campus commons” Typically the areas transformed into campus commons are the high traffic spaces such as the library, food court and computer labs. These are the areas where the vast majority of the student population gathers to socialize study, collaborate, conduct research, and just relax. Some universities have redesigned their libraries into campus commons by including food service areas and providing collaborative seating and work venues. These spaces can serve as key locations for showcasing and exchanging technology, exchanging ideas, and provide students and faculty a dynamic collaborative learning environment where learning takes on a new dimension all together.

Collaborative learning The education process is slowly shifting from the traditional one-dimensional teacher to student instruction process to a more collaborative two dimensional learning process. Technological advancements are facilitating this process by offering a wide variety of venues from which the faculty and students can communicate and collaborate freely with one another. Professors can now post class assignments and related materials online using sites. In addition, progressive universities and colleges are incorporating virtual meeting-place and application-sharing tools more and more. These tools offer collaborative solutions that improve productivity, enhance the learning process by making it more interactive and palatable to the students, while reducing travel to and from the classroom settings for those not able to attend in person.

Shift from teacher to student centered learning paradigm This new Learning Paradigm changes the emphasis from that of quality instruction to quality student-centered learning and the educator’s purpose is not to transfer knowledge but to create environments and experiences that allow students to discover and construct knowledge for themselves and ultimately set them up for success. The primary focus is changed from supplying information *to* the students to *facilitating* knowledge. Hence the teacher becomes more of a coach, guiding and facilitating active learning by whatever means necessary or applicable to the subject matter. Because learning is continually assessed and possibly modified, the classroom setting is regularly altered to produce more learning. The physical space must be flexible enough so that it can be reconfigured at a moment’s notice. Layout, access to technology, functionality, flexibility, and human needs must all be taken into consideration when designing spaces for higher education Learning Paradigm environments.

Understand different learning & teaching styles

There are various approaches to learning Visual learners benefit from a variety of ocular stimulation. One example would be the use of colors. These students like images and written information. They like to be able to read instructions or the text on their own to increase their understanding. When studying it is helpful for these student to use different color highlighters or pens as they are reading and taking notes. These students may also be more sensitive to visual distractions. Auditory some students learn best by listening. Auditory learners do well with lecture, class discussions, etc. While lecture is considered the least effective teaching method, some students learn best by simply listening. These students may also be more sensitive to outside noises. Kinesthetic (Tactile) most people learn best with hands-on activities, but some gain a lot more from it than others. Some students really increase their learn potential when they are given the opportunity to do something by themselves especially in a science classroom there should be plenty of opportunities to learn by doing.

Involve educating methods Professor or Expert/Formal Authority: Instructor-oriented, Works best with students who may become easily frustrated when facing new challenges not directly addressed in the classroom, and/or students who may compete with peers for rewards and recognition. Example practice: Traditional Lectures: Entertainer or Delegator: Relations-oriented, works best with students who enjoy working with their peers, needing little direction from the instructor. Example practice: Collaborative learning such as, group work, peer review and other student-centered learning processes, are consistently emphasized in a course.

Taking in and processing stimuli Learners are affected by elements of the classroom, immediate environment, sound, light, temperature, and design own emotionality motivation, persistence, responsibility, and need for structure or flexibility, sociological needs self, pair, peers, team, adult, or varied physical needs perceptual strengths, intake, time, and mobility

Understand the design needs for both

As a designer it can be a challenge to make sure that the needs of the space meet the intent of the space, and that everyone is satisfied with the outcome. Sounds easy, right? Well last year our team was hired to meet that challenge, to create a new learning space for the community college that would attract and retain students. These students are multi-cultural, and multi-generational. To start we were given the following information about a Grant that the college was awarded to build this space.

Funding: Goal's set by college to achieve this outcome:

- To create culture change in content delivery
- To create formal and informal spaces that are conducive to learning communities
- To provide education and skills for the 21st century
- To engage today's students and faculty in new learning methodologies
- To increase student attention, retention, and success

Programming: After we did our research we came up with a list of Programming questions to help guide us further. Our team spent 2 days with students, faculty, and staff determining the basic needs and requirements as well as finding out where and how they best liked to work and study. We found the answer to be as diverse as the students are, we heard everything from, "I like to study in complete silence," to "I like to study with my I-Pod on full blast." We had students who like to study on the floor in their room, to students who only can study in a library or a place like Starbuck or Barnes and Noble. So now, how do we please all of them? Well, we created a multitude of places and spaces within the building. The library zone is intended to be the quiet study by "yourself" zone, with tables, lounge seating, and even a leaning wall for those that like to sit on the floor.

Student Population: Pima community college, like most colleges of this time, has a very diverse multi-generational population which creates a challenge in their expectations for an acceptable environment.

Library/Learning Commons: After we analyzed all of our data we created a design to meet the needs of both the students and the grant. This involved creating a new kind of space that incorporated their library with the tutoring and computer commons, making an open user friendly, collaborative space. We also needed to create a new learning studio where the teachers and students could have a flexible, movable, collaborative learning space.

Merging Technology- The campus was able to offer wireless internet for most areas, further enhancing the mobility of the spaces.

Overall we created a successful environment that met the original grant objectives. We created a space that is an evolution of the traditional education space, from lecture to interactive, from static to dynamic, from institutional to diverse; these physical characteristics will affect student's cognitive and behavioral processes. As the faculty, staff and students adapt to their new environment the college intends to use this as a model for their other campuses.

- **Sources:**
- *21st Century Trends for Higher Education Top Trends, 2008-2009* by Dr. Tracey Wilen-Daugenti & Alva Grace R. McKee & the Cisco Internet Business Solutions Group, August 2008
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- *Revolution In Higher Education: The Shift From Teaching To Learning* http://www.kms.aim.edu.ph/learncom/dandizon/index_files/.%5CTeach2Learn.htm
- *The Future of Higher Education How Technology will Shape Learning* by The Economist Intelligence Unit, 2008.
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