TEACH *i* LEARN

Interdisciplinary Cluster Competition XL

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Category: CIT: Collaboration and Interdisciplinary Teaching;

Type: Required competition

Level: Undergrad – Juniors

Duration: Ten-days

Abstract: Disciplines are transcending their original boundaries. Collaboration
between different design disciplines are becoming the norm. There is an
opportunity for design educators to create and implement cross
disciplinary experience in undergraduate education that provides true
and meaningful understanding of the possibilities of trans- disciplinary
collaborate design projects.
This exercise provides a framework for exploring cross-disciplinary collaboration between five
design disciplines, including architecture, industrial design, interior
design, landscape architecture, and visual communication.   Across the
school, two hundred students engaged in a ten-day competition in which
mixed teams worked to identify a problem, explore solutions that
involved a multidisciplinary approach and communicate their proposals.

Learning Objectives: Learning outcomes include:

(1) the impact of student learning and their ability to generate holistic
and innovative solutions through the interdisciplinary collaborative
process,
(2) the impact of students' learning in a team based format,

(3) the impact of student learning through the community engagement, (4) the design strategies that arose from a problem seeking strategy that could work as a catalyst to generate change through design.

Criteria: The Interdisciplinary Cluster Competition (ICC) started in 2008 as an idea between three Professors who taught in Architecture, Urban Design, Landscape Architecture and Visual Communication. Since 2009 to the present, two faculty, one from Visual Communication and one from Interior Design, continue working collaboratively to re- shape the evolving teaching methodology.

The competition has been carried out annually for the first ten days of the spring semester with all Junior design students. The exercise exposes and challenges students to become both more divergent and more convergent thinkers within the 10 days of the competition. Divergent thinking because students are asked to brainstorm many unique solutions in order to solve a problem; convergent thinking because students are then required to find a single best solution to one of the brainstorming ideas during the divergent thinking process.

Unlike a traditional competition that starts with a problem statement, in ICC students are not introduced to a problem, but are asked to seek it based on the presentation done by a local non-profit. For example, in 2013 we worked with the Arizona Museum of Youth which was becoming the I.D.E.A. Museum. Here, students were exposed to a variety of users (staff, parents, children, teachers, etc.), spaces (such as the space within the museum), the branding of the museum, the interaction between the children and the museum, the environmental settings for staff at the museum, the relationship between the building and the adjacent community, marketing of the museum, the challenge to address today's interests, etc. In 2014 we worked with Maricopa County Human Services Department, and its non-profit organization Maricopa Workforce Connections. They are a non-profit that works with youth at risk. ICC 2014 started with a presentation from the Youth Program Admin Supervisor. Then, students were exposed to city official from the cities of Mesa and Avondale who partnered with the organization to provide a space for the Youth. Students visited these potential spaces within the county for the Youth program audience to spend their day during or after school hours, work in homework or, or education towards their high

school diploma, or lifelong skills such as preparing a resume. Our students also met and interviewed social workers and youth from the program. During 2016 and 2017, the competition explored the Sun Devil Stadium as a 365 Third Place, a place that can be used all year around for all the community. These unending opportunities allowed the students to become problem seekers, to ask questions to define a specific problem within each organization.

Process: Most of the work is done during the fall semester and the winter break between the two organizers. This includes drafting the competition statement, identifying the place for the kick off of the competition, which varies annually depending the challenge, assigning the teams, meeting with the teams' faculty mentors, identifying the two rounds of judges, putting together the presentation for the kick off, finding firms who are willing to receive the winning team to shadow them for a day, and in this particular year, meeting with non-design deans to explain the opportunity for their students to participate in the competition.

Teams: Each team consists of five students. Each team has two or three Junior students from design disciplines and one or two students who are not majoring in design. Each team has a Faculty Mentor from one design discipline.

Timeline: Because the ICC has been part of the culture of the Junior students for the last nine years, Junior students know that this competition is part of their studio experience. However, unlike regular studio, the project is mainly student led. Since 2017 was the first year that we added non-design majors within the teams, we announced the competition to all other colleges on campus during the Fall of 2016. Below is an example of 2017 kick off timeline:

10/20/16	Competition announcement (for non-design majors)
01/09/17	Competition Kick off 2.30 PM at the Stadium
01/10/17	Organized tour to the stadium available to all teams starting at 7 am every one hour. Maximum capacity 50 students per tour.

01/10/17	Students meet and work during the week in their preferred areas (studios, digital lab, café, library, etc). The competition is mainly student led, students must be on campus to meet with their mentors twice in the week.
01/18/17-	noon- team proposals deliverables submitted
01/18/17-	noon- to 2.30 PM- Five semi-finalists selected from boards and two semi-finalists selected from videos.
01/18/17-	5 PM- seven semi-finalists present to select the winning proposal
01/18/17-	6.30 PM- Winning proposal announced.

Deliverables: BOARD: each team submits a 24in x 72in board that represents their proposal. The only common requirements for the board include: Team number, proposal title and a series of images that explain how the space could be used at 9 am, noon, 3 PM, 6PM and 9PM. Team members' names are optional.

THING: this can be a 2d, 3d or 4d representation, an app or any other mode of representation to strength the team's proposal concept.

VIDEO: a two-minute full color video that clearly explains visually and verbally the team's vision of the day-in-the-life of the proposed spaces. The videos can have pop-up banners or text highlighting each of the team's key design concepts. Videos are uploaded to a Vimeo link provided by the faculty organizers.

Award: For the very first time, in the last nine years of the ICC, Trinity Works sponsored the competition:
$5000 first prize
$1000 second prize
$250 three honorable mentions

Maker space: In previous years when we only had design students, the teams worked physically in all the studios of the five design disciplines. In 2017, we had an extra one hundred non design students participating and therefore the studios could not satisfy the demand to provide work space to all students competing. The School and the university provided

different spaces for teams to meet during the length of the competition, 24/7 including, Junior Studios, review space, two rooms in the library, one space in the Students Union and one gallery space.

Jury: The review process utilized two rounds of juries. The juries vary every year depending the challenge.

FIRST ROUND: The first round of juries includes faculty from the Design Disciplines and the Dean of the Honors College. Their task is to identify the top 7 proposals within the first two hours of the competition submission from watching the two-minute videos, posters and things. (January 18th 2017, 12.30 PM- 2.00 PM).

SECOND ROUND: The second round of juries included the Vice President of University affairs and Chief of Staff to President, the Philanthropist of the year, the Associate Vice President of Cultural Affairs, the Dean of the college housing the design disciplines, the Vice President for Athletics and the sponsor of the competition. Both rounds of juries were moderated by the two faculty organizers. Their task is to identify the winning project and the runner up from the oral and digital presentations of the seven semifinalist teams. (January 18th 2017 , 5 PM- 6.30 PM).

What changed through the years?

The Challenge: Wicked vs confined problem: The first three years of the cluster was around a wicked problem, including peak oil, water, and food scarcity. The intention with these wicked questions was to expand students' divergent thinking. However, we found that it was too broad of a problem because it was not the divergent thinking from one discipline's point-of-view but from five disciplines with all the variations for an interdisciplinary solution. Besides this, there were other challenges students were exposed to:
(1) the collaborative process, because this was the first time students were working in teams,
(2) working outside the students' boundaries of their own disciplines, and
(3) the time frame for the project was very short (10 days).
All the aforementioned indicated that the challenge needed to be more

confined. The following three years, students were given a non-profit organization to work with. These organizations had many different needs including social issues, branding, and design issues. This allowed for more integration of the five design disciplines for an approach that needed to address people and place. For the last three years the competition addressed university campus infrastructure as a 365 third place.

Required Outcomes: Initially students were asked to represent this proposal through a 2 x 6 poster and a physical model. The feedback of the first two years indicated that we were overlooking the opportunity to use technology as another source of representation. Moreover, students felt that this requirement addressed better the typical outcomes of Architects, Interior Designers and Landscape Architects, without fully acknowledging the means of representation for industrial design and visual communication. The last three years, the required submission was modified to (1) a 2x6 poster + (2) "a thing" + (3) one-minute video to communicate their proposal with the larger scope of the community they were dealing with. The poster became the 2 dimensional component to mount an exhibit showcasing the potential of different approaches of interdisciplinary collaboration. The "thing" allows students to propose a diverse set of outcomes; among them we had applications for cell phones, models, movies, objects to promote the organization, paintings, etc. The video became the way to communicate the projects with the larger audience of the user group. The video allowed them to learn about the essence of each project remotely and be able to vote to be represented in the selection of the winning team. For the last five years the required submission includes: (1) a 2x6 poster + (2) a thing + (3) two-minute video.

Teams: As mentioned earlier, each team's proposal had to incorporate a minimum two design disciplines. Originally the teams represented each of the design disciplines. Very quickly we realized that this presented a problem similar to the wicked question. By requiring to have more than two disciplines integrated in the design proposal, we created the following formula to study the diversity of potential variables $[(2^n)-(n+1)]$. Therefore, a team with 5 different disciplines have 27 different variables for potential projects. A team with four disciplines represented

would have 11 different variables, a team three disciplines represented would have 7 different variables. This exponential change by reducing or adding the number of disciplines in the team indicated that a team with four different disciplines was broad enough to explore many opportunities but confined enough that the team would not expend the 10 days of the competition just looking at variables. We implemented teams of four members with four disciplines by the third year, however the collaboration was still not happening as we expected. We revised the model based in our observation of behavior within each team. We found that it was extremely difficult for students to initiate conversation with a group of complete strangers. We changed the teams the following year to have five members in each team representing four disciplines. The fact of having two people in a team who knew each other, even if they were not friends, allowed the first conversation to happen, then the rest of the team would join the debate.

This past year we included not allowed non- design majors to register for a 1 credit- session A to participate in the competition. We had over 50 majors from across the university represented in the teams. We integrated the one or two non-design majors students with three design majors in each team. Interesting enough the proposals of the teams did not reflect the majority of the disciplines in the team.

Assessment: Originally the cluster was mandatory for some disciplines and elective for others, which caused a conflict of interests in the commitment to the team and the project. We met with all the faculty of junior students across the design disciplines to shorten their proposals for the studio semester so that the first ten days of the school, regardless the discipline all students are dedicated to the ICC. We incorporated 360 peer evaluations, mentor evaluations about team performance, students and mentor evaluation of the cluster. We provided a box to place comments, suggestions and complaints regarding the project, the type of challenges, and the methodology. As a result, we implemented potential interventions in where the expert in the field of collaboration would facilitate team building to adjust the vision of the team. All of these, allowed us to evaluate the model and re tested the following year.

The Judging criteria: At the beginning whether because the challenge was a wicked question, the teams were too diverse or the judging criteria was mainly based in originality, the team's proposals were too futuristic, detached, ambitious and lacking of feasibility. For the last two years, the judging criteria supports the educational goals of the cluster. They consider:
(1) originality of the proposal,
(2) how well different design disciplines were integrated,
(3) the articulation of a clear definition of a problem,
(4) how the proposal addressed the specific nonprofit working with, and
(5) the visual quality, craft, and how the proposal can be implemented either by the students or by members of the community at large. This change in the judging criteria forced the students to be better connected to the problem.

Award: This was probably the reason for the permanent improvement of students' commitment to the interdisciplinary cluster. Since the beginning we acknowledge that we have to recognize the winning team in some way or another. We tried books, subscriptions, certificates, gift cards, they all seem equally (un) motivational to the students. Three years ago we implemented the "priceless" award. The members of the winning team have the opportunity to shadow a professional practitioner of their field for a day. These allowed students not only to network with members of the profession, but to share the experience with the industry about interdisciplinary collaborations. Moreover, because students are required to do an internship at the end of their junior year, very often the students are offered the opportunity to do the internship in the firm they shadowed.

In January 2017 was the first time the cluster was sponsored by a company that provided around $7000 in cash prices. Although this was a big motivation for many, most students requested to continue having the shadowing experience with a practitioner in their field of study.

Most important lessons learned:

(1) The ten-day long competition is a short period that avoids the disagreement or lack of interests within the teams.

(2) It is important that all faculty from all disciplines see the same value in students learning experience participating in ICC.

(3) Topics that the students can relate to, or they can see they are helping others work better than broad topics.

(4) Doing the same project every year became a recurrent tradition that all students expect to have.

(5) Priceless awards seems to be the most important motivator to perform well in the competition.

(6) The organization of all steps of the competition needs to be plan ahead, including tours to the site, meetings with stake holders, etc.

(7) The opportunity for the teams to have an interface to post questions (and answers) the first 48 hours works as a way of peer pressure but also kept all the teams motivated in the competition.

Presentation Method: 2 dimensional poster, a "thing" that could be a model, a phone application, clothes for branding the project, full scale model of objects, a process for funding, etc.

Evaluation: 20%   Clear definition and communication of the specific problems of the Sun Devil Stadium as a 365 Third Place.
20%   Design of a solution(s) to a specific the Sun Devil Stadium as a 365 Third Place problem or problems
15%   Reasonable feasibility of the solution(s)
25%   Visual quality, craft and demonstration of integrated interdisciplinary collaboration
20%   Originality (including new combinations of existing systems and Ideas)

Credits: The Interdisciplinary Cluster Competition is part of all Junior studios (all disciplines), for non-design students, there was a one credit course for session A (first six weeks of the semester).

Reflection of 2017 ICC: In comparison to the previous eight years of the Interdisciplinary Cluster competition, this year the ideas were not as innovative as in previous years. We have two hypotheses for this shift: The first one is that the proposals were not as innovative because the challenge was the same than the previous year competition, access to all work submitted the year

before might have limited students' divergent thinking in exploring new opportunities for the Stadium as a 365 Third Place. This year was the first time we repeated a challenge.

The second hypothesis is that the lack of innovation could have been related to the participation of non-design students in the competition. This year was the first time that non-design students could participate. However, design students expressed that non-design students helped them to stay on task and exposed them to systems, ideas and process beyond their design experiences and skills. Non-design students expressed that this experience was by far the most "adrenaline driven" in their education, that it helped them removed preconceived and misconceived ideas of what designers do and that the experience make them have "a new respect for design disciplines".

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Documentation:

Cluster 2017Exhibit Poster
ITI- IDEC- Interdisciplinary Cluster Competition 2017
Judging final_2017 with no names

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