

Innovative Teaching Ideas

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Category: PP:Professional Practice

Level: Undergrad - Fourth Year

Duration: two class periods

Abstract: The CIDA standards require that interior design graduates “recognize the value of integrated design practices.” Specifically, graduates must understand “the terminology and language necessary to communicate effectively with members of allied disciplines” and must also understand “the dynamics of team collaboration and the distribution and structure of team responsibilities.” They also need to develop the “ability to effectively collaborate with multiple disciplines in developing design solutions” (CIDA Standards, 2020).

Guidance within the CIDA standards clarifies that an integrated design process involves working with other interior designers, architects, engineers, and construction managers, in addition to project stakeholders such as owners representatives, corporate leaders, facilities managers, real estate developers, and community spokespeople. In developing the ability to collaborate with other disciplines and stakeholders, students must become familiar with the wide range of project goals and objectives held by each project member. As each professional comes to the project with varied and often divergent perspectives on what a successful building project would yield, as well as having far different educational backgrounds, their points-of-view may be difficult for an interior design student to easily recognize.

The challenge for educators to expose students to the perspectives of these various disciplines is even more challenging if the institution does not include programs within the fields of architecture, engineering, real estate or construction. Even where these programs exist, it is difficult to coordinate cross-program student projects to facilitate a broader understanding of perspectives held within various fields.

This work exercise was designed to have interior design students consider the challenges faced by various professionals as they approach site selection for a large design project – a new hospital building.

Learning Objectives: After completing, students should:

1. be able to identify the project challenges and concerns faced regularly by

various design professionals and other stakeholders

2. be able to identify what aspects of a project (project parameters) might provide greater challenges to those practicing in various disciplines
3. understand the perspectives of different design professionals
4. gain perspective of how inter-disciplinary and integrated teams work within the design and building industry

Criteria:

This activity would likely be included in a Professional Practice class. It can be given to students as an individual assignment, with in-class discussions following (or not). Or, students could work in small groups during class time to complete this activity.

If completed by students individually, they are asked to write approximately 100 words describing the perspectives of each of 12 design professionals and client's representatives (therefore about 1200 words total).

Process:

Initially in class, lecture and discussion content helps students understand the various disciplines (what does a structural engineer do? what does a mechanical engineer do?). Then, students are given this assignment to complete individually outside of class. During a subsequent class, students can meet in groups with classmates to discuss their responses. Or alternatively, this activity could be adapted to have students complete this activity as an in-class, small group activity.

Presentation Method: The assignment description includes a good description of what students are supposed to do.

Evaluation:

Often some students consider things their classmates had not. One student may have identified a mechanical engineer's challenge to heat and cool a multi-story building, while another student may have keyed in on the issues related to ventilation. Some students may identify the hospital's CEO desire for a location in a densely populated area – to serve a broad patient base, whereas other students might consider hospital administrator's concern for parking and transit availability for commuting employees.

A grading rubric helps identify the breadth of student answers.

Credits:

References:

Council for Interior Design Accreditation. (2020). Council for Interior Design Accreditation Professional Standards 2020. Grand Rapids, MI.

Documentation: Attached

UNDERSTANDING INTER-DISCIPLINARY DESIGN COLLABORATION – AN INTEGRATED TEAM APPROACH

Inter-disciplinary (also called *multidisciplinary*) design means having the creativity and the team to look at a project through many design lenses concurrently. You will find in your future work that some of your most rewarding experiences come in the interactions that you have with other professionals. A wonderful synergy exists when various professionals all lend their personal perspective, based on strong expertise developed over years, to collectively arrive at an optimal design solution.

Imagine the year is 2025. On a Wednesday afternoon, you attend a meeting at your place of work (an A&D firm) to discuss a new project. Including yourself, twelve people from the firm have been scheduled for this meeting, along with two owner's representatives. Around the table are seated these design professionals: yourself, an architect, a civil engineer, a mechanical engineer, a structural engineer, a landscape architect, a real estate professional who specializes in land development and acquisitions, a construction manager, a cost estimator, and a project manager. Also at the meeting are the CEO of the hospital (whose background includes 30 years of hospital management), and the chief-of-staff (who has been a practicing cardiothoracic surgeon for 35 years). The CEO is concerned with the profitability of the new hospital, and public perception of the project. The chief-of-staff is concerned with maintaining high levels of patient care, and with staffing hospital personnel.

The project you will be discussing on this day is a new 500,000 square foot hospital (to replace an existing, outdated facility) which will include state-of-the art surgery, research, and patient care facilities. At this first meeting, initial decisions must be made about the choice of a site on which to build the hospital complex (the hospital building and parking facility). Three possible sites have been identified:

Site A: This 10 acre site is on the far western outskirts of town. Currently, the highway does not extend this far to the west, but the city has looked at a road project which will potentially extend the highway in the year 2035. The main access to the site is via a two-lane road from the east, and a two-lane road from the south. There are a few farmhouses in a 3 mile radius. The site is wooded with large, mature oak and maple trees. To the west of the site is a stunning vista of rolling hills. Sunsets over these hills are particularly stunning.

Site B: This 5 acre site is very close to downtown. The surrounding area is fully developed and includes single-family residences, multi-family residences, retail and restaurants, and several commercial buildings. The only reason this large a parcel of land is available is because a 100 year-old school building was demolished several years ago after most of it had burned in a fire. This site is right off the freeway, and right on the major street in the city.

This is the most expensive site that is being considered (site purchase price). If this site were to be chosen, the city (mayor and city hall) would dictate an expedited construction schedule to minimize the length of time any adjacent roadways (or parts of roadways) may need to be closed off for construction and access by heavy building equipment.

Site C: This 10 acre site is on the east end of town. This part of town is very industrial, and includes several factories and a meat-packing plant. The site is available because it includes

a rail yard which no longer operates – the trains ceased operating here years ago. There are many single and multi-family homes nearby, but many of them are dilapidated. In his most recent campaign, the mayor proposed a major re-vitalization of this part of town. He is offering tax incentives to bring new businesses and housing developments to the area, and he has already funded a road improvement project for the main roads leading to this area. This site has the least expensive land purchase price.

Write a minimum of 100 words for each of the 12 professional's perspectives. For each of the 12 roles below, write what particular concerns or recommendations each would have about the three site options. So – within 100 words or more, you will write what a person in that professional role would think about *all three* of the sites – for each of the 12 roles below (so about 1200 words total). What are the benefits and drawbacks of each site, based on the professional expertise and interests of each individual?? What additional information may they seek?

1. Interior Designer (you)
2. Architect
3. Civil Engineer
4. Mechanical Engineer
5. Structural Engineer
6. Landscape Architect
7. Real Estate Professional
8. Construction Manager
9. Cost Estimator
10. Project Manager
11. CEO of the hospital (owner rep)
12. Chief-of-Staff of the hospital (owner rep)

Rubric for Interdisciplinary design collaboration activity Student Name _____

	Excellent (2.0 points)	Good (1.0 - 1.5 points)	Developing (0 - .5 point)	Points Given
Interior Designer	The perspective of a professional from this discipline was comprehensively understood and clearly articulated in a minimum of 100 words.	The perspective of the professional from this discipline could have been more thoroughly considered.	The perspective of the professional from this discipline was not fully understood.	
Architect	The perspective of a professional from this discipline was comprehensively understood and clearly articulated in a minimum of 100 words.	The perspective of the professional from this discipline could have been more thoroughly considered.	The perspective of the professional from this discipline was not fully understood.	
Civil Engineer	The perspective of a professional from this discipline was comprehensively understood and clearly articulated in a minimum of 100 words.	The perspective of the professional from this discipline could have been more thoroughly considered.	The perspective of the professional from this discipline was not fully understood.	
Mechanical Engineer	The perspective of a professional from this discipline was comprehensively understood and clearly articulated in a minimum of 100 words.	The perspective of the professional from this discipline could have been more thoroughly considered.	The perspective of the professional from this discipline was not fully understood.	
Structural Engineer	The perspective of a professional from this discipline was comprehensively understood and clearly articulated in a minimum of 100 words.	The perspective of the professional from this discipline could have been more thoroughly considered.	The perspective of the professional from this discipline was not fully understood.	
Landscape Architect	The perspective of a professional from this discipline was comprehensively understood and clearly articulated in a minimum of 100 words.	The perspective of the professional from this discipline could have been more thoroughly considered.	The perspective of the professional from this discipline was not fully understood.	
Real Estate Professional	The perspective of a professional from this discipline was comprehensively understood and clearly articulated in a minimum of 100 words.	The perspective of the professional from this discipline could have been more thoroughly considered.	The perspective of the professional from this discipline was not fully understood.	
Construction Manager	The perspective of a professional from this discipline was comprehensively understood and clearly articulated in a minimum of 100 words.	The perspective of the professional from this discipline could have been more thoroughly considered.	The perspective of the professional from this discipline was not fully understood.	
Cost Estimator	The perspective of a professional from this discipline was comprehensively understood and clearly articulated in a minimum of 100 words.	The perspective of the professional from this discipline could have been more thoroughly considered.	The perspective of the professional from this discipline was not fully understood.	
Project Manager	The perspective of a professional from this discipline was comprehensively understood and clearly articulated in a minimum of 100 words.	The perspective of the professional from this discipline could have been more thoroughly considered.	The perspective of the professional from this discipline was not fully understood.	
Chief Executive Officer (CEO) of the hospital	The perspective of a professional from this discipline was comprehensively understood and clearly articulated in a minimum of 100 words.	The perspective of the professional from this discipline could have been more thoroughly considered.	The perspective of the professional from this discipline was not fully understood.	
Chief-of-Staff of the hospital	The perspective of a professional from this discipline was comprehensively understood and clearly articulated in a minimum of 100 words.	The perspective of the professional from this discipline could have been more thoroughly considered.	The perspective of the professional from this discipline was not fully understood.	

Comments:

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Interior Designer

An interior design professional would, for aesthetic reasons, prefer site A. The beautiful location is a major benefit in terms of design concept for the structure. However, because it is so far out, it might not be accessible for everyone who needs it. Another concern would be that because it has not been developed yet, there may be some issues with the surrounding landscape. It is important to consider the effects a project of this size would have on the environment. Site B does not have the same concerns. It is in a populated part of the city and would be very accessible to all. The site has already been developed so any environmental concerns have already been addressed. The same goes for site C. However it is not in an ideal location. The surrounding homes are dilapidated and do not suit the aesthetic aspects of the site. However, this would also be a good reason to build here. The project could revitalize this area of town with the right stylistic elements.

Architect

An architect would have similar concerns about each site as an interior designer would. However, an architect would be very focused on the existing palette for the building. Although site A is aesthetically pleasing, the land is not predeveloped and may not have a good canvas to work with. For site B, obtaining the building permit may be difficult, as there could be steep competition between developers. The building time would also have to be accelerated, and would not allow for a complex or interesting building style. The palette for this building, however, is buildable as there was once another building there. Site C also already has an existing plot, which is more ideal for building. It also would not have to be rushed because not as many people live in the area.

Civil Engineer

A civil engineer is more concerned with transportation and whether the plot has the necessary requirements for building, such as access to sewer and water lines. Site A would need all new sewer lines and roadways, which would take much longer than ideal to be completed. Site B has good existing roadways and sewer access, but closing the

roads for construction would not be ideal. It could also be challenging to navigate large equipment in such a populated area. Site C would need better roads, though that is already planned by the city. Because the homes nearby are dilapidated and uncared for, that could mean that the sewer lines as well as clean water access could be inadequate as well.

Mechanical Engineer

A mechanical engineer would be concerned with power access and bringing in heavy machinery to build with or use throughout the building upon completion. Site A would be a difficult place to bring in this type of equipment because there are no existing roads that would allow for such large machinery. Site B could also prove difficult to maneuver this type of equipment, but because it is an existing plot in such a highly populated area, it would already have access to power sources. However there is concern that because a building burned down in that spot in the past, there could possibly be a problem with electrical shortages or inadequate power systems. Site C would need more adequate roads, and most likely more adequate power systems. It could be difficult to bring in heavy equipment to this area on dilapidated roads.

Structural Engineer

A structural engineer determines whether or not a building can be built safely. Site A is a clean slate, but there could be issues with the terrain. It is difficult to determine what is happening beneath the surface until actually digging into the ground. Site B is a clean slate but there is concern that because a building burned down there in the past, there could possibly be issues with the site itself. Site C could have similar issues. A dilapidated area may have worsening site quality. The site itself could be unstable or have issues with the existing systems around the site.

Landscape Architect

A landscape architect designs the surrounding area, or landscape. Site A is the most aesthetically pleasing and would not require much change. However there could be an issue with removing trees if necessary. Site B is also a fairly clean slate since it used to be a school, so there will most likely be existing walkways, trees, and other adequate landscaping elements. There would be a desire to make the space aesthetically pleasing because there are many surrounding businesses to compete with (appearance-wise). The amount of time to work will also be shortened, so there may not be enough time to

construct a thoughtful design. Site C would need the biggest change. The site is in a very industrial part of the city so many aesthetic changes would have to be made, including planting trees, grass and other plants, as well as planning walkways and parking lots.

Real Estate Professional

A real estate professional is concerned with the sellability as well as the quality of the sites themselves. Site A has all the aesthetic requirements that make it a quality plot of land. This site would most likely sell easily. Site B will be sold at a higher price, so the chance of a commission would be greater. However it could be difficult to sell based on the accelerated work time and the fact that there could be site issues from the previous building. Site C would be the most difficult to sell, given that there are already tax incentives proposed. The area itself is not of great quality, and the location is very industrial and not a family-oriented neighborhood. There could also be existing site issues because the area is not taken care of.

Construction Manager

A construction manager is concerned with project time span, budget, and material/resource availability. Site A does not have a great time span allotted because the amount of time it would take to build the necessary roadways is so long. It would also be more expensive to develop an appropriate building site and to bring in the necessary building materials. Site B is the least budget friendly and has an accelerated building time. The time constraint could be a problem if there are unprecedented problems with construction. Site C is ideal because it has an existing plot and is the least expensive site to build on. The budget and time constraints are most ideal for site C.

Cost Estimator

A cost estimator deals with the costs of the sites, labor, time, and materials. Site A is not necessarily the most cost efficient of the three sites. There would be extra labor costs to come with clearing a site for the hospital. Trees and other brush would have to be removed and the site would have to be developed from scratch. Site B is also not the most cost efficient. The site itself will be expensive, and the accelerated project time could result in greater labor costs, such as overtime pay and the need to hire a greater number of workers. Site C is the ideal spot for a cost estimator. Tax incentives would bring the overall cost down significantly. The site is also builder-friendly, as it already has a solid building plot. However with site C, there could be unprecedented expenses if

there are issues with the existing site. The systems as well as the site itself might need to be updated in order to be consistent with code requirements, so this could raise the overall cost of the project.

Project Manager

A project manager would have many of the same concerns as the construction manager as well as the cost estimator. Their main goal would be that the project is finished on time and is up to par with the original scope of the design. Site A has time concerns that have to do with the construction of the highways. This could push the project back quite significantly. Site B has both time and budget constraints, which could lead to an unfinished project or a watered down version of what the project was intended to be. Site C is the most budget friendly and would not have the time constraints that come along with site B.

CEO

A CEO is most concerned with profit and public perception. Site A is farther away from the public and highly populated areas, so it would require more marketing and advertising to inform the public of the project. However the beautiful scenery could draw more patients and attention to the completed project. As for homeowners near the site, they will most likely not be pleased with a big building taking away their usual scenery and bringing more traffic to their area. Site B is in a great location in terms of population. More people would have access to the hospital if it is in the middle of a highly populated area. However public opinion could sour if roadways are closed for too long due to the construction process. Site C is ideal in terms of profit. The tax incentives could save the hospital money for years to come. However it could be harder to draw the public eye to an area that is dilapidated and uncared for. This could change, though, if the mayor's revitalization plan is successful.

Chief of Staff

A chief of staff is concerned less with profits and more with quality patient care and being able to employ necessary staff. Site A is ideal for long-term patients. The beautiful scenery will be beneficial to the patients in contrast with city views. They will also be able to get better outdoor access and fresh air. However it may be difficult to find staff that want to drive that far to their place of employment. Site B is closer to staff and would make finding staff easier. This site is also ideal for a high patient count. More

patients are going to go to a hospital that is closer to them. Site C is not ideal for either of these aspects. The location is not an ideal work location for many staff, and patients may not want to go to a hospital that is located in this type of area. Appearances may warp the perception of the type of care they expect to get. However if the mayor's revitalization plan is successful, these concerns will be eliminated.