

Moving Toward Expertise: Helping Students Become Effective Site Planners

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Project Summary: A professor of urban planning changes the assignment structure of a graduate course to help students build on basic skills, which led to improved knowledge of the site planning process and an understanding of how to recognize a good site plan.

BACKGROUND

Course context

Students pursuing master's degrees in the urban planning graduate program specialize in environmental planning, housing and development, land use planning and urban design, or transportation. Each area of concentration takes students through a sequence of classes that covers theory and policy, methods, and implementation. UBPL 735: Site Planning is one of the methods courses in the land use planning and urban design specialization. Site planning is the process someone uses to determine where building(s), landscaping, sidewalks, parking lots, and signs go on a particular piece of property. For planners there is an emphasis on designing sites that balance the economic, ecological, and cultural values of a community. Each individual property in a city is part of creating an overall whole. Planners review site plans to make sure each property contributes positively to the whole.

Site Planning is a fairly new course in our program, since we have long been known as a “policy” program rather than a physical planning (building or city design) program. However, while we continue an emphasis on policy, over the years we have gotten feedback from our alumnae that applied skills like site planning are needed on the job. As a result, UBPL 735: Site Planning was taught by adjunct faculty on an occasional basis from 1999 to 2002. In 2003, it was finally taught regularly by full-time faculty. I taught the class for the first time in Spring 2007.

That semester, I had 11 planning students and one student each from law, engineering, and architecture. Because my experience with site planning had been as a professional planner, my greatest challenges were remembering what it was like to be a novice and helping students develop their skills on the way to becoming expert site planners. This class proved to be difficult for me and for students in the first semester, partly due to an assignment structure that focused on discrete skills without allowing students to see the site planning process as a cohesive whole and not allowing enough time for practice. A range of technical skill levels also made learning software programs like Photoshop difficult and time-consuming.

To better understand site planning and what makes an expert, I interviewed 10 landscape architects. Landscape architects create site plans from scratch, while city planners review plans for compliance with city codes. I asked the landscape architects what an expert site planner looks like, what skills an expert has, and what skills they see lacking in city planners they have worked with in meeting city site planning regulations. One of the interviewees pointed out that city planners may not need to be able to create a site plan, but they do need to be able to “recognize a good [site plan] from a bad one.” While doing these interviews, I quickly discovered that learning site planning takes landscape architects years of education and on-the-job training to master.

My attempt to teach all someone needed to know about site planning in one semester was doomed from the beginning and not necessarily what city planners needed. Instead of attempting to create professional site planners in one semester, I followed the advice of one landscape architect and decided to train professional “site plan analysts” who have an appreciation for the mechanics of site planning and an appraising eye for site design.

Learning Goals

One of the learning goals for the course is to develop an appreciation for the mechanics of site planning ([Figure 1](#)). A good site planning process brings together how the client wants to use a site (programming) with the site’s carrying capacity (inventory of biological and physical assets and limitations) and the city’s goals for future development (cultural inventory). While city planners may not need to create a site plan from scratch, they do need to appreciate what goes into a quality site plan from the beginning and be able to understand how the designer got to his or her final product. By knowing the proper process, the city planner can see where the designer gave inadequate thought, such as when inventorying existing trees (biological inventory), or see where the designer took particular care, such as when using a similar building material as historic buildings in the area (cultural inventory).

The second learning goal involves being able to spot a good or a bad site plan. To do this, students should be able to answer the following questions using the eye and language of a designer:

1. What makes great places?
2. What makes great neighborhoods?
3. What makes great streets?

I took these three questions from an initiative by the American Planning Association that honors different locations across the U.S. because they are great places, great neighborhoods, or great streets. I thought these were timeless questions that site analysts should be able to answer. These questions are purposely broad and allow opportunities for a range of technical and aesthetic exploration.

After I decided on the two overarching learning goals (the site planning process and what makes a great place) for the course, I looked for ways of organizing the course and setting priorities. I wanted to keep in mind differences in thinking between novices and experts and how I could help students move toward expertise. I turned to the book *Teaching for Understanding*, edited by Martha Stone Wiske (1998). In Chapter 6, “What Are the Qualities of Understanding?”, by Veronica Boix Mansilla and Howard Gardner, there is a table entitled “Four Dimensions of Understanding and Their Features” (pgs. 184-5) (See [Table 1](#) for a truncated version). The four dimensions of understanding are: knowledge, methods, purposes, and forms.

Implementation:

Core competencies

Using [Table 1](#) and the interview results, I organized the course around five core competencies. I wanted students to be able to:

- Observe the world around them,
- Understand the site planning process,
- Experience basic design principles,
- Use context, and
- See different viewpoints.

[Table 2](#) shows how course assignments, topics, and guest speakers fit within the teaching for understanding framework. Starting with the framework, I placed topics, assignments, exercises, and guest speakers from the syllabus into the table to make sure I was staying on track. Below, I will go through each of the competencies and show how assignments and in-class exercises worked together to move students along the continuum from novice toward expertise.

Observe the world around them

One of the major assignments in the course was a take home exam where students had to visit a housing development in Lawrence and see how it did or did not meet the American Planning Association's guidelines for what makes a great place, street, or neighborhood. This assignment implemented the advice of landscape architects who said planners needed to get out of their offices more often and corresponded with components of the framework for understanding like "transformed intuitive beliefs," "healthy skepticism," and "coherent and rich conceptual webs."

Core Competencies

Understand the site planning process

Landscape architects stressed the importance of understanding the process of site planning. Teaching the process of site planning fits into the framework of understanding's emphasis on "building knowledge in the domain" and "mastery of performance genres." I organized the course using LaGro's site planning and design process, but the process was truncated because of time constraints ([Figure 2](#)). Each student's final project was a poster of a conceptual site plan rather than a final site plan drawing. The red line in [Figure 2](#) shows where the class stopped.

The major project for the course was creating a conceptual site plan. This is not a final site plan which would require learning AutoCAD software and much more training than one semester would allow. Over the course of the semester, I assigned students manageable pieces of the project that guided students through the process of creating a site plan culminating in a completed poster. The students were working for an actual client (Camp Shalom, a campground and religious retreat in Linn County, Kansas) who would use their posters to decide how to improve and add to their facilities. The assignments followed the steps in LaGro's diagram ([Figure 1](#)):

1. Completing a programming description—how the site will be used and by whom
2. Site inventories/analysis—soils, steep slopes, views, local ordinance
3. Concept development—building and landscaping materials
4. Concept development—showing improvements on photo of site

5. Draft concept
6. Final poster incorporating all previous assignments.

For copies of selected assignments, check the links below:

- [Farm/Ranch theme assignment](#)
- [Programming assignment](#)
- [Site analysis assignment](#)

Students brought the steps together in a final conceptual site plan poster and also applied what they learned from their analysis of a housing development in Lawrence using the “great places” questions. In this manner, their final projects brought together the two overarching learning goals for the course (the mechanics of site planning and what makes a good site plan).

Learning poster design aimed to enhance students’ visual communication skills but also introduced them to basic design concepts: clear hierarchy, organizing structure, typography, white space with a purpose, far away and up close, color with a purpose, and triangulation. I also wanted the process of working with a client and producing a conceptual plan of their own to accomplish other goals embedded in the framework for understanding such as “effective use of symbol systems” and “consideration of audience and content.”

Core Competencies

Experiencing basic design principles

To provide the foundation for the conceptual site plan poster and the take-home exam, basic technical and artistic design principles were taught and practiced through exercises. I approached homework and in-class exercises as a marriage of technical and artistic skills. The landscape architects verified that site planning requires both technical skills like reading and using a topography map and artistic skills like “having a creative hand.” Students performed the technical assignments (plotting a trail through hills while maintaining certain slopes or placing a house on a site within setbacks and other site limitations) in class, where they could help each other and I could act as coach.

In my past class, drawing techniques caused students a great deal of anxiety. I believed that students should come away from the course with at least a rudimentary sense of drawing, but this semester I did not want drawing to intimidate students. To achieve this, I devoted some class time and several assignments to teaching basic drawing skills. Students began with a trip to the Spencer Gallery of Art, where a staff member there discussed elements of design like line and color. Afterwards, students read and completed exercises from Betty Edwards’s book *The New Drawing on the Right Side of the Brain* (1999). I graded the artistic assignments credit/no-credit, to reduce the anxiety among students with little or no art training and to encourage them to, at least, try.

Using context

All of the assignments included elements of context. I based the in-class exercises on scenarios where students needed to tailor their design to particular circumstances. The take-home exam dealt with a real site and the conceptual site plan poster was created for a specific client. For the

conceptual site plan poster, students visited the site to interview people who lived on the property and listen to their clients' needs and wants.

Seeing different viewpoints

Based on the interviews with landscape architects and the framework for understanding, being able to see different points of view is important to being an expert. They stressed the importance of seeing site planning as a team effort among planners, engineers, landscape architects, architects, clients, and cities. As a result, I incorporated a large number of guest speakers into the course. These speakers ranged from the students' site planning clients, to engineers, landscape architects, an architect, a practicing planner, an ecologist, and ArcGIS, Photoshop and InDesign trainers. The guest speakers demonstrated their skills and showed the different abilities they brought to the table. They also gave their opinions on how students should approach their site designs. In the final conceptual site plan poster, students brought together the advice of these different professionals as they worked toward a successful site design. Attached is a chronological list of expert presentations given throughout the semester to help students practice the methods of planning.

NEW WEB PAGE: SUB-HEAD: Grading

For each of the assignments, grading rubrics were created based on criteria from either LaGro or the classic book *Site Planning* by Kevin Lynch and Gary Hack, along with the teaching for understanding framework. Because the take-home exam focused on the use of design criteria, practicing mastery of the performance genre of writing, and demonstrating awareness of the purposes of knowledge, the rubric for the exam focused on how the "great places" criteria were used, the quality of writing, and how well the student conveyed to readers why the criteria was important. The rubrics for pieces on their final project like the programming description and site analysis used established criteria from readings and lecture to help students develop "knowledge in the domain" and "mastery of performance genres." The rubric for the culminating assignment of the class, the conceptual site plan poster, explicitly used the framework for understanding and evaluated how much students moved on the continuum from naïveté toward expertise (Table 3).

Student Performance

Meeting overall goals

On the first day of class I asked students to answer three questions: What makes a great place? What makes a great neighborhood? And, what makes a great street? At the end of the semester, I compared their answers from the first day to their answers on the take-home test, where they were asked to apply APA criteria to a new housing development in Lawrence. At the start of the semester, on what makes a great neighborhood, students wrote:

- A sense of community
- Walkability
- Diversity of land uses
- Parks and green spaces
- Different architecture
- Nearby store, restaurants, etc.,
- Pleasing to the eye
- Comfortable
- Unique
- A good school
- Peaceful road traffic

In their take-home tests they wrote the following –

- “According to Hinshaw (2008:6), ‘great neighborhoods offer many choices, they accommodate change gracefully, and they are socially and economically inclusive.’ However, the neighborhood gives you an impression that you are in an enclosure. The gate at the main entrance to this neighborhood portrays a sense of seclusion and segregation. The neighborhood thus limits diversity by excluding groups based on income (price discrimination).”
- “With regards to the character of the neighborhood, clearly great efforts were made in both planning and designing the development to reflect the rural character of the area as well as the site’s agricultural past. This can be seen in many of the buildings’ gambrel style roofs which mimic the styling of certain barns in addition to the presence of windmills and other such farm staples throughout the site. However, this would-be memorable design becomes muddled with the inclusion of other architectural designs which appear to be more typical of the large houses on small lots found in many subdivisions.”
- “The single-family houses are all of similar mass, architectural style and height, and the multi-family dwellings build a sense of monotony by repeating the same building style of a two bedroom unit and a three bedroom unit.”
- “Biking and walking trails connect residences, but do not provide a link to other necessities like grocery stores or coffee shops for example.”

To see examples of students’ work, check the links at right.

The students did move further down the road to expertise. In their take-home exams they were able to describe what it was they liked or did not like about different architecture, realizing that

height, style, and mass play roles. Students also were able to delve deeper into concepts like “comfortable” by seeing the pros and cons of a gated community. Also, “walkability” became about “connections,” not just a sidewalk. Yet, the responses do seem to be at the apprentice stage of understanding, with the ability to use criteria but not to create new criteria or own the criteria like an expert. Students are also at the novice stage in terms of a healthy skepticism, as they may find it easier to be hypercritical rather than more discerning.

When students displayed their final posters, I went around the room and each student gave a short presentation about his or her design. I asked each one, “What makes this a great place?” I was disappointed that only one or two could answer the question. Students were able to apply criteria in the take-home exam but they did not own it or internalize it in relation to their own work.

The students were asked to create posters illustrating their design themes for their final conceptual site plan posters. This interim step was intended to allow students to practice poster design and to become familiar with InDesign software before the high-pressure poster assignment at the end of the semester. Before this first poster was due, an expert on poster design visited the class and showed examples. The students’ theme posters were disappointing, because they went too far down the creative path. Their posters were so abstract that their clients and other observers had no way of understanding their messages. They had forgotten “consideration of audience and context.” I too had forgotten to emphasize that students’ posters were a means of communicating their ideas and visions to their clients and the public. The posters needed to be stand-alone pieces that would communicate students’ messages even when they were not around to explain themselves. In the end, the final posters were better communication tools and showed students’ progress toward effective communication and “use of symbol systems.”

Class distribution

In the last class there were the following grades: (1) B, (1) B+, (2) A-, and (9) A’s. Overall, I was pleased with the progress of students, but I know I need to work on how to explain what I want and then be able to fairly evaluate students accordingly. There were times in the class when I scored some projects higher than I would have liked because students were not fully grasping what I wanted, but I felt it was my fault for not presenting the information well or fully explaining the material.

Reflections

Overall reflections

The Spring 2008 semester went much more smoothly than the previous time I taught the course. There are still areas to be improved in terms of timing and focus, but those are much easier to handle with an overall framework in hand. The “teaching for understanding” framework is very useful for establishing priorities and keeping assignments and classes on track. Site planning is a huge subject that could consume several semesters. To get the most out of students’ time and attention, focus is paramount, and that is where the framework is most useful.

In Spring 2007, before I implemented these changes, a landscape architect visited my class and she walked students through an exercise in laying out a drive-through bank site in an inner-city setting. After the class, the landscape architect said, “Those were *not* designers.” By changing the focus of the class from teaching design to teaching site analysis, the learning goals became more realistic and on target for ultimately creating good site plan reviewers who know a “good plan from a bad plan.”

As a new teacher, it is hard coming to terms with the fact that no matter how hard you work or how good your intentions, classes will not be perfect right from the start (or the second or third or fourth time . . .). This class has been particularly frustrating in terms of deciding what to leave in and what to leave out. I settled on priorities, and then came the work of practicing how to present and explain information. The framework for understanding helped with the priorities and with thinking through “how” to teach so students could leave the class with more expertise than when they entered. I now feel much more comfortable with my focus in this course, and I look forward to more practice and perfecting the assignments.

Reflections on Implementation

Final conceptual site plan poster

The overall conceptual site plan poster was better than trying to do a site plan like the previous semester, but there were still issues with quality and refining the designs. Even with multiple classes on Photoshop and InDesign, students were still struggling with the software to the point that they were not able to apply their design skills. They were simply content with getting a poster printed out of InDesign, no matter the quality. One student with the best poster used PowerPoint to create her poster. In the future, I will teach PowerPoint and the small drawing program within it because students can get quality results easily. Also, PowerPoint is software that many will have on the job, while InDesign might not be available.

In addition to learning the software, it appears students struggled with the amount of work. Even though the assignments built on one another so that their final project should have simply been a bringing together of what they already completed, students continued to put things together at the last minute without reflecting on what should be improved or refined. Hopefully, changing the software used will help with this aspect.

Take-home test

The take-home test ended up being the best assignment where students were able to show their understanding. It got them out into a real development using design criteria.

Guest speakers

Having guest speakers from allied professions (architecture, landscape architecture, engineering, and ecology) worked well. Students were able to see how these different professionals viewed the same project in different ways. They also got to see an engineer at work and landscape architects at work. Experts modeled skills that the students could then emulate.

Drawing

The students seemed to enjoy trying to draw and some used their own drawings to good effect in their final posters.

Technical skills

The in-class exercises were challenging at times. I took exercises that were homework from the last class and turned them into in-class exercises. Some fit very well within the class time, while others were simply too much to handle in the allotted time. In the future, I will work on selecting exercises that allow time for completion and feedback.