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Abstract

The vertical studio is a single-class combination of students at different levels (in this case: sophomores, juniors, and seniors) in a given program of study. The particular vertical studio model discussed here seeks to make a virtue of larger class sizes by encouraging a wider range of solutions from a more diverse group of students, and leveraging that range as instructional material. This demands very specific and tightly controlled changes to pedagogy. The administrative benefits of larger class sizes are perhaps obvious: it is a scheduling convenience rich in instructional units. Less obvious is how to make the vertical studio work as a core offering, such that it becomes a benefit for students. This paper outlines a test run and subsequent institutionalization of the vertical studio (though still temporary) in the Graphic Design program at the University of Illinois at Urbana-Champaign. The integration of the vertical studio into a core curriculum presents a better test of the concept than does an elective. Discussion covers principles, benefits, and problems of the vertical studio model believed to be relevant to instruction for all disciplines of design. Program-level logistics are addressed. The idea of the vertical studio, and especially this particular model, is interrogated. For instance, is the large class size integral to the concept of the vertical studio? What factors prove integral, if any, and what factors are discretionary?

Institutionalizing the Vertical Studio: Curriculum, Pedagogy, and the Logistics of Core Classes with Mixed- Level Students

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THE VERTICAL STUDIO CONCEPT

Pedagogical Basis

The vertical studio concept represents an integrated approach to teaching students of varied academic levels in the same course. This stands in contrast to a more traditional, level-segregated model—with sophomore, junior, and senior courses, for example. This type of course structure is not entirely experimental, however—the vertical studio concept is supported by research on a number of topics related to learning.

Social learning or social cognitive theory suggests that learning occurs in a group or social context through observation, imitation, and modeling (Ormrod, 2011). While these approaches are likely present to some degree in nearly any classroom, the vertical studio concept effectively magnifies their impact. Integrating students of differing academic levels introduces an equally varied collection of experiences into the classroom environment—allowing for more observation, more imitation, and more modeling to occur.

Studio-based courses in design often attempt to emulate aspects of professional practice; however, communities of practice are rarely as homogeneous as the courses in a level-segregated curricular structure. In contrast, the vertical studio provides the opportunity for legitimate peripheral participation, and thus, situated learning, to occur. Legitimate peripheral participation (LPP) describes the way in which “newcomers develop a

changing understanding of practice over time from improvised opportunities to participate peripherally in ongoing activities of the community” (Lave, 1991, p. 68). Newcomers—lower level students, in the context of the vertical studio—develop a knowledge base through their observation of and increasing participation in the activities of the studio-community, gradually assuming an identity as an “oldtimer.” Notably, LPP does not characterize upper level students as teachers and lower level students as pupils; rather, upper level students are tasked primarily with providing lower level students with access to the practices of the community (Lave, 1991, p. 68).

History

As a functional and deliberate approach to curricular planning and pedagogy, the vertical studio is relatively new to graphic design. This distinction of deliberateness is essential, as smaller programs, due to a lack of resources, may offer courses considered *de facto* vertical studios. However, the vertical studio—as characterized by this paper—typically relies on the critical mass of a moderate, or even large, class size.

Other studio-based design areas have used the vertical model effectively for a number of years. For example, the vertical studio was introduced to the architecture, interior architecture, landscape architecture, and industrial design programs at the Rhode Island School of Design in 1970 (Barnes, 1993, p. 34), and it has also been part of many architectural design programs in the UK since around the same time (Parry, 1995, p. 21). The University of Bedfordshire, UK, restructured its interior architecture and interior design programs to incorporate the vertical studio in 2004 (Layden, 2010). The implementation of the vertical studio in the curricula of many spatially-oriented design programs (architecture, in particular) has been attributed, in part, to their need to “expose novice students to holistic and contextual thinking approaches,” which are inherent to education in these areas (Liem, 2012, p. 36). It would seem that this argument can, and perhaps should, be made for graphic design education as well.

A PARTICULAR VERTICAL STUDIO MODEL

Context

The graphic design program at the University of Illinois at Urbana-Champaign is situated within the School of Art and Design, along with 10 other programs including art history, art education, various studio arts, and industrial design. The school admits undergraduates into a foundation year, at the end of which students apply to individual programs. The graphic design program is competitive, with roughly three quarters of students applying in any given year (though many do so as a second or lower choice). The program has recently increased capped admissions numbers into the thirties, with 42 planned for admission in

2014. During the 2013–14 academic year, when the primary vertical studio implementation took place, the program had roughly 90 undergraduate students.

Previously, the graphic design program had three dedicated studio spaces, but for the 2013–14 academic year, the program moved into a pair of considerably larger spaces. Since there are now two spaces, and not three, graduating classes are no longer assigned their own spaces. This is consistent with the vertical studio philosophy of promoting the integration of student groups.

Structure

The vertical studio model implemented in the graphic design program at the University of Illinois had the following structural features and prescriptions in its initial manifestation:

- ▶ Sophomores through seniors are combined into level-balanced classes. This is central to the definition of the vertical studio.
- ▶ Students learn from their peers. Projects seek to elicit a wider possible range of results, as that range is seen as a major component in learning.
- ▶ Class sizes are larger, as a wider range of work is desired. The more participants, the wider the possible range of results. (Range of work and larger class sizes were prescribed by teacher Tony Brock, who was consulted on his experience with vertical studios.)
- ▶ Team-based experiences are promoted to provide increased opportunity for peer-to-peer learning. Of course, working in groups is often wrought with problems, and instructors must plan carefully.
- ▶ Non-majors (in this case, only from within the school) are included, theoretically widening the range of results.
- ▶ Projects cannot build on any technical expertise, as one third of the students are first-semester sophomores (and others are non-majors). Project design must accommodate this.
- ▶ Instructors teach modules, taking a project (or series of projects) from one class to another in rotation. This ensures that all students receive equivalent instruction.
- ▶ Since the vertical studio includes all students at all levels in any given year, in a long-term model, students attend vertical studio three times in their progression through the program.

While it may seem that encouraging the more experienced students to help teach the less experienced students would be considered core to the idea of this vertical studio model, the faculty were skeptical of this assertion (especially after the pilot test; see following section). It was anticipated that relying on, or even promoting, such a relationship would simply frustrate the senior-level students.

The argument for this core vertical studio model rested on overlapping clusters of factors tied to its structural features, which can be classified as either administrative or pedagogical benefits. The former were leveraged to secure the spaces necessary to employ the vertical studio, while making an expansion of the core curriculum possible. The latter were necessary for the program's belief in its own idea.

Administrative Benefits. This vertical studio model compresses three fall studio courses into a shared course; students still enroll in one of three level-segregated courses according to their progress in the program. In the first full vertical studio implementation, instructors then shuffled the students into three balanced sections. Given the size of the individual graduating classes, each official course otherwise would have been divided into two classes—a total of six instructor assignments. This is the first and most dramatic benefit of this vertical model: in the first year, three instructor assignments were saved and made available for other offerings.

There is continuing pressure to increase course enrollment, and large vertical class sizes can increase the program's average class size significantly. At the time of implementation, the program's graduating class—divided class sizes were considered low. However, it is accepted that smaller classes (such as the program's rigorous Introduction to Typography, a difficult teaching assignment) can be justified when balanced out with larger classes; this is the second administrative benefit.

The third benefit is a product of the first two. The program is moving to take advantage of the mathematical implications of the vertical studio by increasing the total count of core studios in the curriculum, taught in part using the liberated instructor assignments.

The inclusion of non-majors addressed administrative pressure for programs to open their classes to all students within the school. Such inclusion is desirable according to this model, where otherwise teaching non-majors in core offerings is difficult due to course prerequisites and reliance on program-specific hardware and software requirements. While the inclusion of non-majors in the vertical studio represents an administrative benefit, it represents a challenge to the instructor preparing a project for vertical studio.

Due to the modular structure of vertical studio, and because each instructor only teaches a portion of the course, it becomes possible to include instructors not affiliated with the program. This gives the program more flexibility and presents a certain type of inclusivity to administration, a political benefit.

Pedagogical Benefits. The pedagogical benefits of this vertical studio model are more tenuous. Through project design, the faculty sought to create conditions under which potential difficulties became virtues. This requires a broader view of the graphic design studio—one that conceptualizes coursework in a new way, with courses fitting into one of three categories:

1. *Knowledge-basis coursework:* lower level courses that provide depth in an area of study. This includes typography, interaction design, and image making courses.

Later courses can reliably build on the relatively short, standardized projects in these courses.

2. *Exploratory coursework*: courses that promote a freer form of making, standing in designed contrast to the knowledge-basis coursework. The repeated vertical studios exist here.
3. *Praxis coursework*: upper level courses that cover agreed-upon methods, but that are topical in content. Projects are fewer to build experience in deeper investigation.

This framework creates a place or a role for vertical studio, where its peculiarities are not seen as weaknesses, but rather serve to counterbalance the more rigid knowledge-basis coursework. The vertical studio becomes a place to “make” more freely. Such a division of coursework is not critical to the inclusion of a vertical studio in a core curriculum, but it does acknowledge that the vertical studio is not just another course—it has a particular character.

The expected pedagogical benefits of this vertical studio model are:

- ▶ The shared studio experience builds a sense of community across levels that must otherwise be promoted awkwardly by faculty.
- ▶ Peer-to-peer learning is intensified in the instructor’s struggle to promote a wider range of work.
- ▶ Seniors model better practices for the younger students, both in execution and articulation. Sophomores see first hand what they might become and potentially elevate their work and discussion. If this effect is real, it should amplify over time (a sophomore class elevated by seniors becomes a more advanced senior class in time, whose likewise contribution becomes stronger).
- ▶ The challenge of teaching across levels encourages faculty to innovate in ways that normally wouldn’t be necessary.
- ▶ Placing instructors in a shared endeavor at a shared time promotes the co-development of new methods and expertise. It is otherwise unlikely that faculty, with their busy schedules, will collaborate pedagogically.

CASE STUDIES

The Pilot Implementation

Class scheduling in the Spring 2013 semester enabled a partial test of the vertical studio idea. Sophomore and junior studios were held concurrently, with four instructors (Brian Wiley, Eric Benson, and the authors) teaching four official classes. The semester was divided into shared-duration modules. Instructors rotated such that they could prepare one project and then teach it to both sections of either sophomores or juniors, depending upon the

teaching assignment. For two of the module slots, paired sophomore and junior instructors co-taught a vertical test project together. To do this, instructors combined their students into one classroom, doubling the class size (to about 30 students), such that they were teaching half of the sophomores and half of the juniors together. The paired instructors then repeated the project with the remaining half of students. This provided two opportunities to test each vertical project, with refinement possible between.

For their module, the authors developed an iPad-based publication project using Apple's iBooks Author software (Tober & Peterson, 2013). Students were assigned to mixed-level teams and selected a text available on Project Gutenberg, a copyright-free collection. The instructors provided a listing of obscure texts that were appropriate in length for the project. Individual students then chose subsections of the text to typeset and supplement with both visual and interactive material. Students' final publications were published on Apple's iBookstore.

Through a series of early digital sketches, teams negotiated a general design direction for what was conceived of as a series from the original continuous text. Individuals were permitted to deviate from the team's direction. This was permitted because forced group work is highly problematic when, inevitably, some students prove less dependable than others.

Lessons Learned. In the first module iteration, teams were permitted to more intimately negotiate their different sections and produce a single-volume iBook together. The expectation was that only teams that were collaborating productively would opt to produce a single volume book. This was a mistake. Most teams elected to produce single-volume works because it seemed more sensible to them, despite having serious internal group issues. The offer of a single-volume election was rescinded in the second iteration.

Frustrations with both teamwork and software (the new iBooks Author) left students suspicious of the vertical studio. This was not an ideal way to enter into the following semester, when the vertical studio was fully institutionalized. The particular software issues would not be repeated, and the issues with teamwork were deemed solvable. The full semester of vertical studio would make the students across graduating classes more familiar with one another, and team-based components could be designed to leave each student more comfortably responsible for his or her own work. Teams, core to peer-based learning, would have to be used adeptly for research and feedback, without any significant sharing of design work.

The Institutionalized Implementation

Building off the pilot, existing core sophomore, junior, and senior-level studios were co-scheduled in the fall 2013 semester to enable a comprehensive implementation of the vertical studio. All three levels of students, along with several non-graphic design art and design majors, were mixed together and then distributed across three sections. The two authors and graphic design faculty member K.T. Meaney each taught a project module

three times, lasting for a third of the semester (approximately 9 class sessions). Section size ranged from the mid-20s to the low 30s.

Project modules emphasized a varied range of student experiences throughout the course of the semester. In Meaney's module, students investigated a prairie wetlands ecosystem through the identification of an animal behavior, which was then represented through a series of imaging strategies intended to educate the patrons of a local park. Peterson's module involved group analysis of the events depicted in Errol Morris' *The Thin Blue Line*, focusing in on some aspect of the film's story. Individuals honored the group-negotiated focus and produced infographics, often extending the content of the film with their own research. In Tober's module, students engaged in a process of narrative plot development, structured writing, and storyboarding to negotiate the design constraints involved with producing a sixteen-episode season of an Instagram video web series.

While the authors' prior experiences informed the individual nature of the actual design work in these project modules, teamwork and collaboration were incorporated in different ways. Peterson's module used teamwork during the content analysis and generation phase of the project. Teams shared research duties as well as underlying structure. Individuals then explored how to vary their investigations despite their structural similarities.

Tober's module relied heavily on group discussion for purposes of peer feedback—both at the front end (for evaluation of initial project proposals) and throughout the remainder of the project. Episode due dates were spread out over the course of six classes, with in-class time spent primarily by groups screening their members' episodes and preparing a written report responding to questions prepared specifically for each session. This report also helped direct discussion during the limited amount of time (approximately 15 minutes) the instructor was able to spend with each group during class.

Lessons Learned. From the instructors' perspective, teaching the same project three times back-to-back can be tiring, whereas two times is seemingly more manageable. While the opportunity exists to refine, and slightly vary, each project module between sections, the reality is that the pace of the semester precludes much from being accomplished in this regard. This repetitiveness is also evident in some of the student work produced across the course of the semester—some later work was markedly less imaginative, as there was greater awareness of the work of previous sections.

Willingness on the part of faculty to implement innovative pedagogy requires preparation for the possible consequences. While the instructors believe that the varied modules represented a range of learning opportunities for students, and that a great deal of successful work was produced, student evaluation scores for the course were some of the lowest the instructors have received in their time at the University. Much of this negative response can be attributed to the vertical studio representing a cultural shift within the graphic design program. Current seniors, some of whom wrote comments claiming to have been insulted by having to work with lower level students, had difficulty reconciling their experiences with those of the seniors before them. Beginning next year, the vertical studio

will be a core experience for all graphic design students—all three levels will have had some experience with the course format in each year they have been part of the program.

The larger vertical sections (students in the low to mid-30s) were difficult to manage, despite the philosophical justification behind the numbers. The program is opting for 4 sections of the course in the Fall 2014 iteration, reducing class sizes to the mid-20s—still higher than other core studios. This lessens the vertical studio's instructional units benefit, but it helps ensure quality of instruction. Non-majors will not be included in this iteration, as they seemed to create instructional challenges that outstripped their special contributions.

The authors are committed to further institutional tests of this changing model. While neither excessive class size nor the inclusion of non-majors is still expected to be integral to the idea, the emphasis on both building community and promoting a wider range of work persists. The pedagogical problems that the vertical studio presents may elicit new instructional methods. This is a final benefit of this vertical studio model: it forces instructors to innovate. It remains to be seen to what degree.

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