

Collaborative Design Pedagogy: An Examination of the Four Levels of Collaboration

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Abstract

This paper reexamines research conducted with more than a dozen authorities in architectural education on collaborative methodologies over a three year period. The focus of initial study, a doctoral dissertation entitled: Collaborative Design Pedagogy: A Naturalistic Inquiry of Architectural Education (McPeek, 2009), examined the apparent disparity existent between the practicing profession of architecture and the academic preparation of its future members. In this paper, a condensed examination of specific findings from the previous data set point to four key levels of pedagogical collaboration (community, institution, faculty, and student) that are critical components to the implementation of collaborative architectural curriculum. These levels contain both inhibiting and facilitating elements that appear in all types of higher educational institutions (public, private, liberal arts schools, land grant universities, etc) and in varied curriculum settings. Thus, while the authors' main emphasis lies in enhancing the pedagogical scope of architectural education, this data may also be pivotal in facilitating and/or inhibiting collaborative endeavors in any major field of study, particularly those which incorporate collaborative methods in the context of situated learning.

Keywords

Architecture; Collaboration; Pedagogy; Cross-disciplinary; Trans-disciplinary; Multidisciplinary; Interdisciplinarity; Intradisciplinary

Background & Purpose

The research presented in this paper is based on original work conducted by McPeek from 2003 to 2009 which resulted in the completion of a dissertation entitled; Collaborative Design Pedagogy: A Naturalistic Inquiry of Architectural Education (McPeek, 2009). The focus of the initial study was to examine the apparent disparity existent between the practicing profession of architecture and the academic preparation of its future members.

Historically, the education of an architect has been a highly individualized pursuit, focused on the development of an individual skill-set (Boyer and Mitgang, 1996) that seldom required collaboration beyond that of student and professor. While this individualized, hands on approach to education has been highly revered by many (Cossentino, 2002; Shaffer, 2003; Kuhn, 2001) it often falls short of its potential and fails to recognize that the greatest design accomplishments of humankind have been the undertaking of collaborative enterprise (Bennis and Biederman, 1997). Furthermore, architecture students are being prepared in a manner that is contrary to the highly collaborative nature of the architectural practice they will enter (Crosbie, 1995) (McPeek, 2009, pg 3).

This paper examines, in specific, the portion of research which highlights critical factors (inhibiting and facilitating) which can impact the implementation of collaborative teaching within American schools of architecture by focusing on four key levels of collaboration (community, institution, faculty, and student) that exist in American universities, both public and private. The purpose of this condensed examination is to provide a platform for discussion and ideation regarding the implementation (and support) of collaborative pedagogy. While the authors' main emphasis lies in enhancing the pedagogical scope of architectural education, it is important to understand the role that the four levels of collaboration (community, institution, faculty, and student) play in facilitating and/or inhibiting collaborative endeavor.

Methodology

The research analyzed within this paper is based on a series of interviews conducted by McPeek over a three year period with several leading architectural educators. Participants were selected based on published academic literature as well as personal referrals. Interviewee's included past and present deans, department heads, and professors of all rank. Although a variety of institutions (public, private, liberal arts schools, land grant universities, etc) are represented within the data, interviews were limited to participants employed by schools of architecture with full member status in the Association of Collegiate Schools of Architecture [ACSA]. The only exception to this standard was the inclusion of interview responses from a limited number of associated research professionals employed outside of ACSA member institutions.

The data collected and cataloged was based on qualitative research via naturalistic inquiry techniques. These techniques were based on a variant of Rubin's (2004) outlined methods and followed the format known as "Ethnographic Interpretation." This method was particularly well suited for the one-on-one interaction and dialogue desired for study. Although the data was derived from independent and unique conversations, each discussion followed a standardized interview guide which sought to identify key norms, rules, values, and traditions commonly

associated with collaborative teaching and learning in architectural education (McPeek, 2009). It is important to note that in order to ensure confidentiality and enhance candid dialog, all of the quoted participants have been given pseudonyms to protect personal and institutional identity.

Overview of Findings

The findings of the original research were categorized into five general themes: Levels of Collaboration, The Role of Collaborative Pedagogy, The Collaborative Skill Set, Implementation of Collaborative Methodologies and Collaboration in the Design Studio (McPeek, 2009). Collectively, these themes provided a basis for outlining impacts to collaborative design pedagogy in architectural education. However, throughout the course of interviews, respondents engaged in consistent discussion centered around four key groups: community, institution, faculty, & student. Each of these groups (while at times inherently interrelated) brought forth a variety of distinct factors impacting the success, or failure, of collaborative architectural education.

The community

Service to the community is a central focus for many schools of architecture across the United States and there are numerous examples of architectural programs actively engaged with their communities. Some higher profile examples include The Studio at Large (Palleroni and Merkelbach, 2004) out of the University of Washington and The Rural Studio (Oppenheimer-Dean and Hursley, 1998, 2002) at Auburn University. Collaborative community based projects tend to focus primarily on working with groups who often lack funding for, or access to, architectural services. Groups such as Habitat for Humanity, Native American tribal communities, the local farmers market, and outreach programs for disadvantaged youth were all cited by respondents in the initial research as examples of collaborative partners at the community level. Respondents overwhelmingly emphasized the importance of community involvement in the collaborative educational process. In particular, respondents felt that student interaction within the community yielded a greater awareness regarding the importance of shared ideas. “I think another important dimension to this is the discovery that others pull, insights and wisdom and other points of view, that we don’t hold as individuals” (Thompson, 2005 as cited in McPeek, 2009, pg. 91). Respondents also concluded that creating a foundational attitude and basic skill set of community collaboration during formative academic years was critical to future professional attitudes. “As future professionals, they’re involvement with the community, it starts here. Because if it doesn’t start here, it doesn’t happen...” (Connors, 2005 as cited in McPeek, 2009, pg 90).

However, a critical factor involved in collaboration at the level of community is that of preconceptions (or even simply, personal perceptions). Even the most well intentioned collaborative efforts can be stymied if the participants involved are not alert to the potential motivators (culture, economic, religious, political, linguistic, etc) that impact participants from all sides.

...we decided by working with the Singapore, we thought that we would kind of erase these kinds of cultural differences that would exist...And Singapore having this kind of large Chinese population, and Hong Kong, again, being Chinese, we thought that we would have some kind of cultural thinking so to speak, and that they would be in tune...actually, what we have discovered is there are huge cultural differences, and all sorts of misunderstandings that took place during that semester (Jones, 2005 as cited in McPeck, 2009, pg 117).

Unlike the traditionally fictitious, individually competed architectural academic projects, community collaboration often involves real life scenarios with real life participants. Thus, while educationally vital and foundational, such projects must be executed with extreme care due to the high potential for causing misunderstanding and genuine harm.

The institution

At the level of institution, respondents spoke of interaction between their respective academic units (University, College, School, and Department) and the internal intellectual community in which they served. Shared experiences associated with collaboration between units on a campus highlighted the role that institutional and departmental structures play in either facilitating or inhibiting the collaborative educational process. In particular, financial pressures and course structure were often cited as critical factors. "We are a much more integrated, interdisciplinary in research than we are in instruction, and that's largely because of the centers and the fact that there still are powerful incentives for people to collaborate which basically is money." (Connors, 2005 as cited in McPeck, 2009, pg 96). As institutions face growing demands to increase revenue streams beyond state appropriations or the individual donor level the focus shifts to financial gains found through research grants. However, the fiscal emphasis on collaborative interdisciplinary research often fails to include teaching. This is because interdisciplinary teaching is often viewed as a potential expense and/or resource drain, rather than a strong source of financial expansion. "...whenever an administrator speaks to unifying and collaborating and going across to institutes across campus or whatever the complexity begins, who should use the resources..." (Smith, 2004 as cited in McPeck, 2009, pg 97). This struggle over division of resources is particularly acute when examined in terms of distributing academic credits.

You're work in the university, so you know that if you were to teach a class with a colleague from another department, the immediate question that you will get from the department heads will be, okay, how do we divide the credit units...So in other words, is it going to be 50 percent committed to architecture and 50 percent attributed to whatever, either mechanical engineering and so on? So there are these kinds of institutional barriers that have to do with the funding of the various educational activities. (Jones, 2005 as cited in McPeck, 2009, pg 121).

Respondents noted that collaborative skills are a fundamental requirement amongst architectural practitioners and a skill that should be learned in the classroom. Several respondents noted that the ability to work well with others and lead teams in professional practice were amongst some of the most important skills that the architect has in professional practice and the earlier they can be developed the better. However, many comments reflected a frustration with departmental structures, particularly regarding the congestion of accredited curriculum, which can significantly hinder collaborative efforts. This is due in large measure to current course structures that are simply too overloaded to allow for any additional courses or the development of dual degree programs with other majors on campus.

... What would architecture and public policy be up there, if you came in as a hybrid degree? But we've created our curriculum in such a way that you cannot take anything like that...You can't take dual degrees of architecture in most of the schools in the country. You can barely play hockey once a week... (Wilson, 2005 as cited in McPeck, 2009, pg 109).

Another inhibiting factor discussed by many respondents focused on the structure, duration, and curricular emphasis placed on design studio courses. The average architectural studio course in American institutions of higher education runs in three to four hour blocks of time, three to four times weekly. This amounts to upwards of 12 hours of class time per week (every semester for four or more years) dedicated to predominantly solitary project work.

I think also we need to become more flexible about this idea that we are giving studio anywhere from a third to a half of your load and two thirds of your life, has got some potential to be reconsidered...the backbone of this mythology about this simultaneous presence of design every semester and that its ever-present nature is a place to pursue, synthesize the other learning that is done in the curriculum. I don't think of it as a kind of theological truth...(Thompson, 2005 as cited in McPeck, 2009, pgs 110 - 111).

In discussing ways to overcome and/or manage collaborative issues at the institutional level many respondents noted the need for faculty, administrators, and departments to be both opportunistic as well as holistic. "It raises questions about how should we be teaching; how pertinent that is that we maintain these divisions within the university if they are starting to radically blur out in the field..." (Phelps, 2005 as cited in McPeck, 2009, pg 126). Some

respondents found opportunity in bridging the financial gap through expansion of their publication efforts into alternative professional groups. “One of the interesting things is we’re finding, I think if we applied to any conference in the country - nursing conferences, neonatal care conferences - we are the anomaly. ‘You’re a designer? Oh, we’d love to!’” (Wilson, 2005 as cited in McPeck, 2009, pg 127). By generating connections with other disciplines outside of the realm of “institution” many educators are finding not simply receptive audiences, but potential partners for both research and pedagogical collaboration. Bridging the gap, it appears, may be better accomplished from an outside-in approach. Other responses exposed that it can be much easier to facilitate collaboration between units in the same college than between units of different colleges. “...we wanted to collaborate with engineering and we have tried of course, but we’ve been more successful collaborating between the two disciplines inside the college, which is architecture [and] landscape architecture...” (Phelps, 2005 as cited in McPeck, 2009, pg 100). This seems to be due, in large measure, to the existence of common pedagogical goals and administrative policies which can be much easier to navigate at the department level than at the college or university level. Additionally, overlapping job site interaction, which takes place in later professional practice, is viewed as a strong incentive for interdepartmental teaching strategies between units.

Respondents also point to the vital importance of collaborative educational ‘buy in’ from higher levels within the institution. Communication is critical and many departmental chairs and college deans are beginning to understand that, for true cross disciplinary collaboration to occur at the course level, they must initiate the dialog. “Right before the holidays the dean of our liberal arts college and I got all of her school chairs and all of our directors together for a half day talking about collaboration. What are you doing of interest to one another?” (Connors, 2005 as cited in McPeck, 2009, pg 99). Additionally, the thread of inter (and cross) disciplinary collaboration must be holistically embraced at the curricular level. “The University of Oregon, there’s a lot of collaborative work. They built it into their culture in every course, so it’s not just collaborate, ‘Oh, we’ll do a little bit of collaboration here,’...It’s pervasive. It’s a given” (Wilson, 2005 as cited in McPeck, 2009, pg 132).

The faculty

When considering collaborative interaction between individual faculty members, respondents pointed to a number of critical issues which directly impacted collaborative endeavors including: teaching load, the tenure process, time commitment, grades, and faculty personality. A central concern on the part of faculty and administrators is co-teaching. “...co-teaching does it count as

a full course? Is it part of the full load or is only part of the course, you get into teaching or work load issues with faculty which is also a kind of can of worms” (Phelps, 2005 as cited in McPeck, 2009, pg 122). When there are shared teaching responsibilities how does the department evaluate course loading of co-teachers relative to those that do not have shared teaching responsibilities? The perception among those not engaged in co-teaching course work might be that their colleagues are potentially skirting full time responsibility. However, respondents often disputed this notion. “...if you talk to faculty they tell you know that co-teaching can be just as hard as teaching. Even though you might be only teaching half the courses, you were still putting in all the work of a full time class” (Phelps, 2005 as cited in McPeck, 2009, pg 125). But the dilemma extends beyond personal or departmental perceptions and can have implications regarding the process of tenure and promotion. Some of the respondents felt that this was simply a convenient excuse for not doing collaborative work that is readily accepted by many. However, most agreed that collaborative work is difficult for many institutions to assess due to a lack of clear ‘ownership’ over course material, outcomes, etc.

Because most schools it’s very difficult to do, from not tenuring the people who are in multiple disciplines to not valuing the courses that do that...we still do things where you have to have ownership and who did it and why did you do it, it has to be attributable to an individual (Wilson, 2005 as cited in McPeck, 2009, pg 121).

As the instigator of collaboration, faculty members are charged with creating an environment conducive for collaborative work, fostering collaborative relationships between the students, and assessing the collaborative work produced by the students. It can often be a laborious process, particularly when beginning such work for the first time. “Just as an observer, interdisciplinary instruction is not easy. It’s very, very difficult, and you have to have the patience, you have to have the time, and you have to invest in the infrastructure...” (Connors, 2005 as cited in McPeck, 2009, pg 121). Additionally, there is a very real challenge to establishing clear methods of assessing group work. Many faculty find this portion of the collaborative equation to be particularly difficult to overcome. “Collaboration also creates certain kinds of tensions because it seems invariably in every team there are some students who work more than others you know and so you just have to make sure you not penalizing the hard workers by kind of giving shelter to ones that aren’t working as hard” (Phelps, 2005 as cited in McPeck, 2009, pg 130). This sentiment is further underscored by broader institutional pressures, “We are always struggling with the demand of the university that we give individual grades to individual students...” (Phelps, 2005 as cited in McPeck, 2009, pg 129).

Although the pressure to produce individual work based on individual effort exists for faculty in both their own academic careers as well as with student project work, many respondents expressed a belief that these factors need not be the last word in collaborative pedagogy. In the case of student grades one respondent explained,

...the idea that grades come, let's say at the end, and they are anointed by a divine perspective is part of the problem....more important than the grade I think, ultimately, is the feedback and if you cultivate feedback not as something only you award but something that exists among peers then collaboration is a lot more present...(Thompson, 2005 as cited in McPeck, 2009, pg 127).

Respondents also expressed the need to be actively engaged in student group dynamics.

I keep close track of who's doing what. I employ intelligence gathering techniques... I would actually interview - informally interview students asking them who's doing what. Asking them if they have complaints about the group; Pointing out to students that are not doing work that they should do work and contribute...(Jackson, 2005 as cited in McPeck, 2009, pg 128).

Beyond the rigors of tenure, course load, and grading dilemmas, many respondents also cited faculty personality as a pivotal factor in collaborative efforts. In some instances this was attributed to longstanding departmental routine and "...older faculty who have been doing things a certain way for a long time..." (Smith, 2004 as cited in McPeck, 2009, pg 120) who were not always willing to undertake group projects. There was also a sense among some interviewees that perhaps inherent in the aspect of 'teacher' was a notion of individuality. "Often people who go into academia go into academia because they're mavericks, and so you want team players, you've got to go to industry" (Wilson, 2005 as cited in McPeck, 2009, pg 103). But, as one respondent pointed out, sometimes these inhibitors can be avoided through common observation. "I have learned in tons of settings that were collaborative over the years that it still simplistically comes down to individual chemistry and my best collaborations have always been when I really wanted to work with somebody..." (Smith, 2004 as cited in Author, 2009, pg 103).

The student

Each of the preceding levels of collaboration serves to enable, or hinder as the case may be, collaboration at the level of the student. By insuring that the preceding levels of collaboration are in place the likelihood of successful collaboration in the classroom is greatly enhanced allowing the instructor to prepare the students for the rigors of collaborative learning. An important consideration when pursuing collaborative learning in the design studio is to understand how design students differ from students in other disciplines and how these differences affect collaborative endeavors. When discussing collaboration at the level of the student the

respondents frequently noted the “nature” or “type” of students that pursue an architectural education. A great many of students entering into schools of architecture have a “maverick” personality and as a result are not intrinsically predisposed to the social nature of collaborative efforts.

I think that the students who are attracted are the same students that were attracted 20, 50, 70, 80 years ago, and they’re makers, but they may not be social mavens...When we have students who are great public speakers, or very involved with student council, they often are not our strongest students in architecture, and we run them off...it’s very interesting (Wilson, 2005 as cited in McPeck, 2009, pg 106).

In discussing facilitating factors for collaboration at the student level, respondents cited the impact of observational learning. Because many students lack social or collaborative expertise, the need for “learning” such behavior is paramount. Effective co-teaching was noted as a primary, and mutually beneficial, means of observational learning regarding the collaborative process. Observation of community based collaboration within organizations (i.e. Habitat for Humanity) also provides excellent opportunities for exposure. Observation can then be followed by emulation, where the students mimic behaviors previously observed followed by increasingly complex collaborative challenges.

Another primary focus in teaching students to be good collaborators is to help them develop a common dialogue. This common dialogue is the primary tool, in a collaborative skill set, needed for sustained collaboration. The ability to establish and maintain an ongoing dialogue is mandatory for successful collaboration and this requires the establishment of a common language. It has also been determined that the process of establishing a common language is one that can be taught or coached in the classroom environment. It is this common dialogue that serves as the foundation for a collaborative social construct.

One respondent in the study described this in the following way.

Collaboration is functional. ...part of that is getting over your own vocabulary and beginning to understand and have empathy for the vocabulary of the collaborator. These perceptions that students from management bring, or engineering bring, or our own architecture students bring, it has to be overcome before we can get meaningful collaboration and partnering and the joint exercise of problem solving, alternative generation and so forth. (Connors, 2005 as cited in McPeck, pg 114).

Yet another respondent noted

There’s also the greater danger of them just finding having no common language. ... [For example] the generalist can’t even speak with the specialist anymore. Peterson, 2005 as cited in McPeck, pg 114).

It was determined that like design ability, the development of a common dialogue, requires practice and repetition. This is a skill that on the surface may appear to run counter to the “maverick” tendencies of the typical design student actually complements and enables the natural abilities and tendencies of the design student.

Conclusions

This paper offered a compressed overview of research from an original data set, focusing on four key levels of collaboration that exist in American educational institutions: the community, the institution, the faculty, and the student. Based on research conducted to this point, it appears critical that, in order to facilitate successful collaborative exercises in the classroom, these key collaborative levels must be working in concert. In particular, if the levels of community, institution, and faculty have not been addressed, then achieving a positive outcome at the level of student becomes an even greater struggle. Successful collaborative engagement is dependent upon the interplay of these four levels and, with the proper facilitation (McPeck, 2009), can greatly enhance the educational experience, for architectural education as well as many other increasingly collaborative fields of study.

References

- McPeck, T (2009) *Collaborative Design Pedagogy: A Naturalistic Inquiry of Architectural Education*, Dissertation, Architecture, Texas A&M University, College Station, TX
- McPeck, T, Brazley, M, and Davey, J (2009) *Where the rubber meets the road: Service learning and the design studio*, in *Pedagogical Education: contemporary problems, modern concepts, theories and practices: collected scientific articles*, St. Petersburg, Russia
- (2009) *Exploring the Need and Means for Greater Collaboration in the Design Studio*, in 40 IADE 40 - 5th UNIDCOM/IADE International Conference, Lisbon, Portugal
- Bennis, W and Biederman, P W (1997) *Organizing genius*, Addison-Wesley Publishing Company, Reading, MA
- Boyer, E L and Mitgang, L (1996) *Building community: A new future for architecture education and practice*, The Carnegie Foundation for the Advancement of Teaching, Princeton, NJ
- Connors, M (2005) Research interview (Interview conducted on January 7, 2005)
- Cossentino, J (2002) Importing artistry: Further lessons from the design studio, *Reflective Practice* Vol 3 No 1 pp 39-52
- Crosbie, M J (1995) The schools: How they're failing the profession (and what we can do about it), *Progressive Architecture* Vol 76 No 9 September 1995 pp 47-51, 94, 96
- Jackson, F (2005) Research interview (Interview conducted on December 12, 2005)
- Jones, M (2005) Research interview (Interview conducted on December 03, 2005)
- Kuhn, S (2001) Learning from the architecture studio: Implications for project-based pedagogy, *International Journal of Engineering Education* Vol 17 No 4 and 5 pp 349-355
- Oppenheimer-Dean, A and Hursley, T (1998) *Proceed and be bold: Rural studio after Samuel Mockbee*, Princeton Architectural Press, New York
- (2002) *Rural studio*, Princeton Architectural Press, New York
- Palleroni, S and Merkelbach, C (2004) *Studio at large: Architecture in service of global communities*, University of Washington Press, Seattle, WA
- Phelps, A (2005) Research interview (Interview conducted on January 3, 2005)

Rubin, H and Rubin, I (2004) *Qualitative interviewing: The art of hearing data*, 2nd ed, Sage Publications, Thousand Oaks, CA

Shaffer, D W (2003). Portrait of the Oxford Design Studio: An ethnography of design pedagogy. *WCER Working Paper No. 2003-11*,
http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/2d/7c/e5.pdf.

Smith, J (2004) Research interview (Interview conducted on December 12, 2004)

Thompson, J (2005) Research interview (Interview conducted on November 18, 2005)

Wilson, J (2005) Research interview (Interview conducted on November 17, 2005)