Experiencing the Rural Studio: An Assessment of Student Learning Outcomes

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Introduction

It is widely accepted that form making and connections to theory dominate the architectural studio in most professional schools today. Aside from this mainstream understanding, there exists in university-based architectural education several significant undercurrents that have tempered the studio and served to broaden its structure and focus. Significant among these undercurrents are the connection between design and the craft-based, artisan traditions of the master builders and the powerful connections between architecture and a social vocation ethic.[1]

The late 1980's brought a resurgence of the craft-based pedagogy in the form of the *design/build* studio. Fueled in-part by a renewed interest in materials and tectonics, hands-on construction projects have become a common feature of most contemporary architecture programs.[2] In addition to the learning experience associated with planning and executing the construction of their own design work, these design/build projects often incorporate a second significant pedagogical objective, the cultivation of a service ethic and an awareness of the connections between architecture and the social problems of our age.

Auburn University's Rural Studio is internationally recognized for executing award winning student-designed and constructed projects in the dramatically impoverished "Black Belt" region of Alabama. One of the intriguing aspects to the Rural Studio is the intimate relationship of a design-centered "practice" and the social ethics associated with service to clients with overwhelming needs.

While many have written about the impact and influence of the design/build studio movement, there have been significantly fewer efforts to objectively measure the impact of these teaching approaches on the students who experience them.

This paper documents the authors approach to measuring the effect that participation in the Rural Studio has on Auburn students. Observations made in this paper are based on two data sets: (1) exit interviews completed over a four year span (2001-2004) with students graduating after spending their final year at the Rural Studio and, (2) a survey of all graduates of the architecture program between 1998 and 2003. This research seeks to measure and understand the learning outcomes of participants in the Rural Studio and to place these insights into the context of an examination of the design/build studio and service learning as vehicles for the realization of an enriched and expanded mission for architectural education.

This paper is divided into three sections. It begins with a brief overview of the Rural Studio. The second section provides a detailed analysis of the mixed-method process used to evaluate student learning experiences at the Rural Studio. Lastly, the authors discuss the pedagogical significance of the insights gained from this research.

An Overview of the Rural Studio

A component of Auburn's 5-Year Bachelor of Architecture degree program, the Rural Studio started its thirteenth academic year in August of 2005. The program has completed more than fifty community projects and charity homes in west Alabama as part of the process of teaching more than three hundred and eighty architecture students.

The Rural Studio employs a service-learning teaching model that has garnered national and international recognition. Honored for his exceptional work at Rural Studio, the late AIA Gold Medalist, Samuel Mockbee and colleague D.K. Ruth conceived the studio as a method to improve the living conditions in rural Alabama while educating students utilizing a combination of the design/build format with an immersion in a community setting. Under the current directors, Andrew Freear and Bruce Lindsey, the Rural Studio continues to thrive and evolve.

Andrew Freear (center) with students at the Rural Studio

The Rural Studio consists of three programs: the Second Year Program; the Thesis Program; and the Outreach Program.

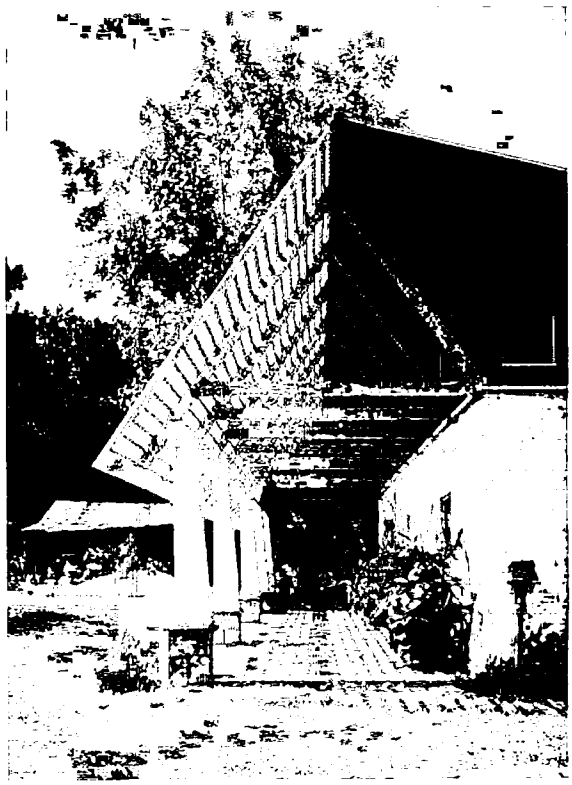
The Outreach program, now in its sixth year, involves interdisciplinary students from around the world who work on a joint project and on individual community outreach projects in their own discipline. This program has expanded the community engagement dimension of the Rural Studio in significant ways. However, since it does not directly involve Auburn graduates, it was not included in this study.

The Second Year Program

Each semester, fifteen to twenty second-year students, with the assistance of the Hale County Department of Human Resources, identify and work with a family in need of stable, secure housing and design a home in response to those needs. In addition to initiating construction of this home, these students complete construction of the home begun by the previous semester's students, modifying the design in response to continued interaction with the client family and to emerging construction conditions.

The Second Year students have thus far completed eleven homes. The completed homes that most clearly typify projects undertaken in the Second Year Program are the Bryant House, and the Music Man House.

The Bryant House: Called the "Hay Bale House" because of walls constructed of hay bales, this structure is home to the Bryant family (the late Alberta and Shepard Bryant and their two grandchildren). Located in Mason's Bend, the home's 24-inch-thick walls are stacked hay bales that have been



The Bryant House

veneered with cement plaster providing excellent natural and inexpensive insulation. One wood-burning stove, located in the living room of the house, heats the entire structure, and the house remains cool throughout the summer because of natural ventilation provided by awning windows in the front of the house. In keeping with Southern culture, the house has a large front porch covered with an inexpensive acrylic roof.

The Music Man House: Keeping with the eclectic Rural Studio style, Music Man's house is a collage of donated and discarded materials. The design starts with a gate just off the highway, built from steel "hog wire", tin and plastic signs found on the property, and includes an opening through which Music Man can ride his motor scooter.

The Music Man House

The house itself is made mostly of wood and metal, but it has unusual features throughout. Hanging from the ceiling of the main room are shelves that can slide on old skateboard wheels from one wall to the opposite one. When the shelving unit is on the kitchen side of the room, half the shelves are open; the other half are open when the unit moves across the room. Pieces of colorful glass bottles are cast in concrete, forming a tiled floor. The shower room uses the grooved bed liner from a pickup truck to drain water.

The students worked on their design alongside Music Man (Jimmy Lee Matthews). Blending his requests with their own ideas, the second year students learned how to collaborate with a truly unique client.

The Thesis Program

Twelve to sixteen 5th year students move to Hale County for their final year in the professional program. These students work in small teams (typically 3-4 students) and are responsible for working with the Rural Studio faculty and staff to find clients and funding for their projects prior to beginning their design and construction process.

Over the course of the last seven years the work of the thesis students has taken center stage in the program. Examples of thesis projects that have been recognized for their superior design and innovative use of materials are the Akron Boys and Girls Club and a series of projects at the Perry Lakes Park.

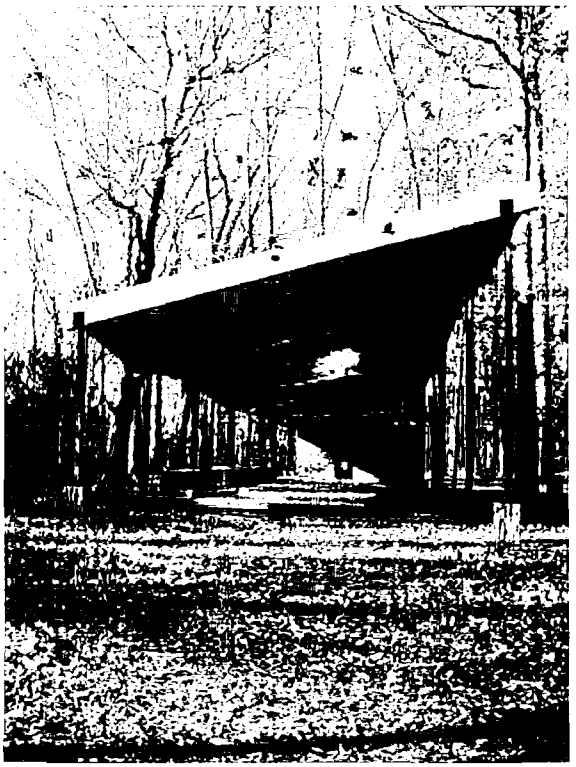
Akron Boys and Girls Club: This project was designed and built by three thesis students in 2001. Using the remaining walls of an old general store building in the now defunct commercial area of the town of Akron, the students converted the building shell into a structure which serves as a supervised meeting place for the youth of the community. Residential areas and the elementary school are all within walking distance of this public facility. Besides serving as a safe and structured environment for the young during

The Akron Boy's & Girl's Club

after-school hours, local service organizations are using the site to bring educational and cultural programs to these young children. Reading and art programs are held both in the main building and in the adjoining garden area built by another group of students in the spring of 2001.

Perry Lakes Park: After being closed for over thirty years, the Perry Lakes Park/ Barton's Beach area was reopened to the public in 2002. The Park is located seven miles northeast of the small town of Marion and is situated on the winding Cahaba River. It provides a place for recreation, fishing, canoeing, birding, walking, and public access to the Cahaba River.

The students involved at this site have worked closely with a board comprised of community leaders including the probate judge, mayor, county commissioner, and biologist.



Perry Lakes Pavilion

Rural Studio thesis teams have completed three of five phases of planned projects in the park: an open-air pavilion, a boardwalk and a cluster of community restrooms, and a pedestrian bridge.

The roof of the pavilion features a soaring plane (24' at its highest point), while the floor surface wraps up to form benches and to make a ramped formal entry way. The entire floor surface is made of locally milled cedar donated by a local community member. The pavilion is now being used for community gatherings, "catfish fries", family reunions, and an outdoor classroom for Judson College.

Perry Lakes Bathrooms

Evaluating Student Learning Experiences

Methodology

A mixed-method research design, incorporating exit interviews and a survey, was used to assess the students' experiences after they participated in the Rural Studio.[3] The exit interviews included discussions with each graduating class near the end of their 5thyear of study at the Rural Studio.[4] These interviews were started in 2001 and have continued each year.

Observations generated from the interviews were used to develop a survey sent to all graduates of the architecture program in this same time period. The survey was completed by 103 alumni of the Architecture program who graduated from 1998 to 2002.[5]

Survey responses were then sorted into graduates who had participated in the Rural Studio (as second year and/or fifth year students) and graduates who had not participated in the program in order to measure differences in their responses.

The benefit of a mixed-method research strategy is that it combines the precision of quantitative data (survey data) with the accuracy of qualitative data (exit interviews) into one research project. For this investigation the authors used a mixed-method design for two reasons. The first motive was development. Observations generated from the interviews were used to develop the survey of all graduates of the architecture program in this same time period. The second motive was expansion. The wider distribution of the survey to all architecture graduates provided a comparison of experiences of "non-rural studio students" to the experiences to "rural studio" students.

Research Findings

Overall, graduates who went through the Rural Studio program ("Rural Studio Alumni") rated their education experience as stronger in 29 out of the 31 questions (93%) in comparison to graduates who did not participate in the program (Non-Rural Studio Alumni). While a number of these differences were slight (and thus statistically insignificant), responses to several of the questions highlight clear differences.

By analyzing the survey responses and the interviews together, three general categories of observations can be collectively gleaned from the study. They are the impact of: (1) the design/build process; (2) engagement with the community and the social vocation ethic; and, (3) experience of the collaborative process. A review of these insights offers a glimpse of the promise of the Rural Studio as a teaching model, and an opportunity to reflect on its implications.

Re: The Impact of Design/Build

One key theme that emerged from the exit interviews was the influence of the design/build process on students' understanding of the relationship between design and construction – activities traditionally presented to students as separate realms of the building process. In the course of the exit interviews the thesis students reported several areas in which their perceptions had been changed.

Many students noted that the pressure to construct their projects themselves had the effect of forcing them to refine and clarify their designs in ways not present in their prior studio experiences. The Rural Studio experience also forged new perspectives on the role of design communication tools. Students offered comments such as "looking right in drawings is not the same as looking right in the field." They also observed that the design/build format offers both opportunities and frustrations relative to the subject of material exploration.

The survey results echo these themes relative to alumni assessments of their learning experience. Rural Studio Alumni rated their learning experiences as stronger relative to the relationship between the design and construction process (Question 2H), general technical competencies (Question 2L) and understanding of mechanical systems integration (Question 4B).

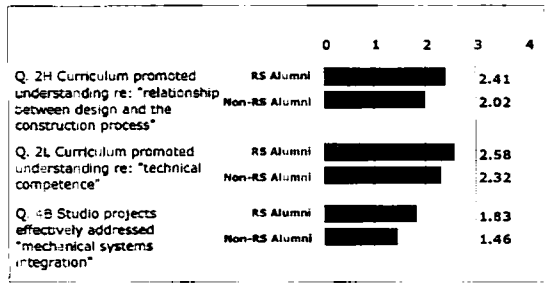


Table 1 Impact of Design/Build

Re: Engagement with the Community and the Social Vocation Ethic

One of the overarching goals of the Rural Studio Program is to "instill (in students) the social ethics of professionalism, volunteerism, individual responsibility and community service."[6] These goals were echoed in the comments of the graduating students in a number of ways. Many students reported that interaction with a community-based client was the most significant element of their Rural Studio experience. The students seem to believe that not just the involvement of community clients, but the students' immersion into these communities, was a significant catalyst in their experience of the design process.

According to the Rural Studio students, one of the common ways that community engagement influences their projects is the transformation in their eyes regarding whose

concerns they privilege in their design deliberations. Conditioned by prior studios to design to satisfy themselves and their studio faculty, the collaborations with their client groups result in an often profound shift for these young architects-to-be. Reflecting on this transformation, one student observed that "you come to understand that you're doing this as much for them as for yourself." Looking back on the daunting scale of their project, the Akron Boys and Girls Club team remarked that their sense of responsibility to their community client was a key motivator for the students when it seemed like the team faced insurmountable obstacles.

Another significant insight developed as a result of the community engagement was the realization that in several instances, the building they were constructing would not (by itself) realize the idea of the project" and that their roles would have to expand "beyond swinging hammers." In response, some of the students became, in effect, community organizers and facilitators. This experience of building social structures as well as physical ones helped these students address the ultimate sustainability of their impact on the communities they labored to serve.

The survey results reinforce these interview observations, reflecting more positive responses from Rural Studio alumni to all of the questions in this category, including attentiveness to the needs of clients (Question 1G), balancing responsibilities to society and clients (Question 2A), and commitment to service and volunteerism. (Question 2C)

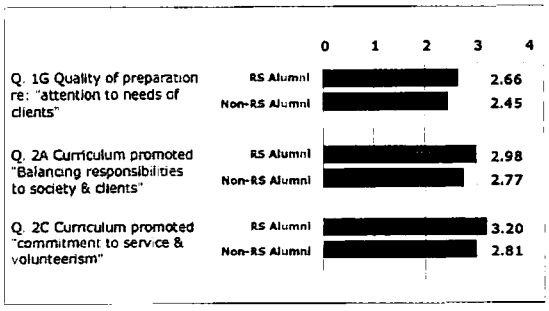


Table 3 Engagement with Community & Social Vocation

Re: Experience of the Collaborative Process

The team-based structure of the Rural Studio exposes the students to the collaborative nature of design practice and this experience seems to have had a profound effect on all the students interviewed. The exit interviews revealed that students had gained a number of valuable insights.

First among these were lessons concerned the role of communication between team members. Accustomed to the "solo" culture of the traditional studio, each team offered stories of sometimes rocky transitions from "individuals competing for the teacher's attention" to more meaningful collaboration. Students became more aware of how various teams worked to reach group decisions and the variety of tools used by different teams to facilitate these choices.

In addition to learning about inter-team communication and collaboration, the students became very familiar with the challenges of communicating with their clients, and with the complex ethics associated with client collaboration. As one student put it, "we've had to learn how to talk about architecture with people who don't understand architecture." The students reported that they struggled to balance their aesthetic aspirations against a deeply felt "sense of accountability" to their client, trusting that their effort to "create beauty" would result in the best solution for all stakeholders. This interaction with their community clients had a profound impact on the student's view of the goals of architecture as well as their expectations relative to the experiences that lay ahead of them as they enter practice.

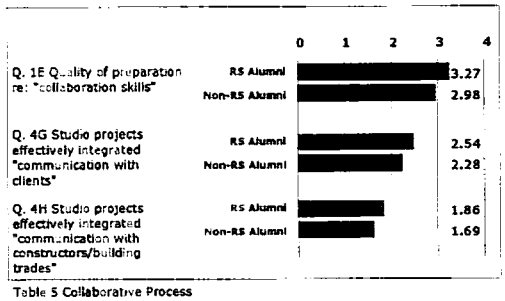


Table 5 Collaborative Process

Responses to survey questions in this subject area clearly confirm these observations. While all responding alumni rated the architecture program positively in these areas, RS alumni scored their experience higher than non-Rural Studio alumni in all questions in this category,

including collaboration skills (Question 1E), effective communication with clients (Question 4G) and effective communication with constructors/building trades (Question 4H).

Other Observations

The survey responses suggest a number of areas where additional research is needed. For example, when respondents are sorted by gender, differences emerge relative to the impact of the learning experience on graduates' sense of their "technical competence." Male Rural Student Alumni were influenced more relative to their technical competence than their female colleagues.

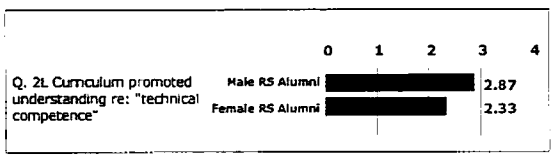


Table 2 Question 2L Gender Difference

Differences were also apparent in the rating female Rural Studio Alumni assigned to their learning experience relative to "attentiveness to the needs of clients" (Question 1G) while male Rural Studio Alumni rated "balancing responsibilities to society and clients" (Question2A) more positively than female alumni.

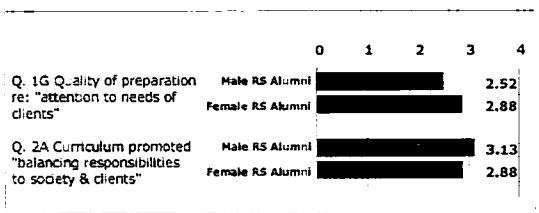


Table 4 Gender Differences re: Community Engagment & Social Vocation

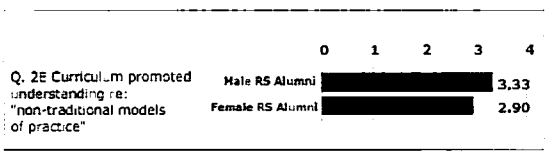


Table 7 Gender Differences re: Alternative Models of Practice

This speaks directly to observations made by Kathryn Anthony who has found that female students "want a greater emphasis on the human and social impact of the field" incorporated into professional curricula.[7] As the interview data highlights, this emphasis is clearly a significant component of the Rural Studio experience.

The survey responses, however, suggest that male and female students have a different response to these experiences. More targeted research on the role gender plays in student response to learning experience would enhance educators' efforts to respond to Anthony's call for a "more proactive stance towards diversity" in architectural education and in the profession.

It is also clear that this initiative to evaluate student's experiences in community-centered design/build would be much more valuable if it incorporated research from other programs.

The authors are currently seeking collaborators in the development of a multi-institution initiative to asses the impact of this approach to teaching and community engagement.

Conclusions

> *"...architectural education has an obligation to address the significant social, environmental, political, and economic problems that confront us...To address these broader social and environmental problems will require skills beyond those offered by the traditional curriculum. Tomorrow's students will need to be adept at resource conservation, sustainable building practices and technology, community participation, and collaborative problem solving"*
>
> The 2001 ACSA Strategic Plan [8]

If, as the quote above suggests, architectural educators are committed to preparing students to reinvigorate the role of architects in our society then we need to understand the Rural Studio, and the many other successful examples like it, not as laudable anomalies, but as valuable clues to the future of architectural education.

Our research leads to the conclusion that the true lessons of the Rural Studio and its relevance as a model for expanding the studio pedagogy lies in its integration of the design/build format with an immersion in a

community setting and its needs and concerns. This merging of the craft-based artisan tradition in architectural education and the cultivation of a service ethic is the catalyst that generates the more universal skills and insights demonstrated by the cases studied here.

As evidenced by the research presented in this paper, the Rural Studio approach to the community-based design/build studio offers a powerful enrichment to the process of preparing students for careers in the profession. More significantly, these responses indicate that the integration of service learning and design/build teaching methods can strengthen students preparation in areas considered critical to the future of the profession - collaboration, community engagement and a commitment to service.

The research also suggests that objective assessment of student experiences is a critical component of understanding and testing the true impact of innovations in architectural education and to charting our path to a more effective and relevant profession.

References

[1] Hinson, David and Andrew Freear; "Examining the Rural Studio: Community Centered Design/Build Studios and the Undercurrents of Architectural Education", in *Architecture in Communication: Challenge and Opportunity in Building the Machine Age.*

Proceedings of the 90th Annual Meeting of the Association of Collegiate Schools of Architecture, April 2002.

[2] Carpenter, William, (1997), *Learning by Building: Design and Construction in Architectural Education*, Van Nostrand Reinhold.

[3] The mixed-method approach used in this study draws on research methods developed in the planning field. See Gaber, John, (1993), "Reasserting the Importance of Qualitative Methods in Planning", in *Landscape and Urban Planning*, 26:137-148.; Gaber, John, and Sharon Gaber, (1997), "Utilizing Mixed-Method Research Design in Planning: The Case of 14th Street, New York City, in *Journal of Planning Education and Planning*, Winter, 17:2, pp.95-103. See also Tashakkori, Abbas, and Charles Teddlie, (1998). *Mixed Methodology: Combining Qualitative and Quantitative Approaches*, Thousand Oaks, CA; Sage Publications, p.46.

[4] The student quotes and summaries of their observations on their Rural Studio experiences are taken from interviews conducted by xxxxxxx with graduating students at the Rural Studio in the summers of 2001-2004.

[5] A single page survey was mailed to all architecture alumni that graduated from 1995 to 2003. Because of inconsistent response rate from alumni from 1995 to 1997 and 2003, survey responses were analyzed from the graduating classes of 1998 to 2002. During this time, a total of 103 surveys were returned of 250 students that graduated during this time yielding an amazing response rate of 41%. Students who gone through the Rural Studio account for a little over 56% of the total 1998 to 2002 graduated alumni.

Outside of the demographic questions (e.g. gender, current employment, etc.) the survey was divided into three substantive question areas. In each substantive question area, respondents were asked to rank their responses to specific issues on a four point scale: very strong, fairly strong, fairly weak, and, very weak. The three substantive question areas and their specific issues are as follows:

(1) The course I completed in the architecture program prepared me in the following areas:

A. Effective leadership skills; B. Verbal communication skills; C. Written communication skills; D. Graphic Communication skills; E. Collaboration skills; F. Digital media skills; G. Attentive to needs of clients; H. Design skills.

(2) Please indicate how effective you feel the architecture curriculum promoted understanding of the following issues:

A. Balancing responsibilities to society and clients; B. Social awareness, C. Commitment to service and volunteerism; D. Personal/social responsibility; E. Non-traditional models of practice; F. Community engagement in design

process; G. Civic involvement; H. Relationship between design and construction process; I. Relationship between design and community welfare; J. Self-Esteem; K. Ethics; and, L. Technical competence.

(3) Design studio projects in the School of Architecture effectively integrated these areas of knowledge:

A. Aesthetic dimensions of design; B. Mechanical systems integration; C. Building materials and their properties; D. Basic structural theory; E. Building codes; F. Environmentally sustainable design; G.

Effective communication with clients; H. Effective communication with constructors/building trades; I. Effects of buildings on human behavior; J. Relationship between design and costs of construction; and, K. Design theory.

[6] Source for this reference is the Rural Studio website, http://www.ruralstudio.com/mission.htm

[7] Anthony, Kathryn H. "Designing for Diversity: Implications for Architectural Education in the Twenty-first Century", in the *Journal of Architectural Education*, May 2002, Volume 55, No. 4.

[8] This quote is taken from an early draft of the ACSA Strategic Plan reviewed by the authors in September, 2001.