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Introduction

Although architects are known as visual thinkers, they also need to be effective writers. Architecture programs have struggled to find effective ways to teach future architects how to write well. This paper is the first step in a proposed research project built on the research of Donald Schön, who developed the concept of the "reflective practitioner." This paper proposes a pedagogical approach in which students are introduced to substantial, professional reflection in writing, deploying what this author calls the "writing-in-action" process.

Writing: A critical skill for architects

For many established practitioners or academics, the need to write well is obvious. Practitioners know the merit of a well-written letter to a client, the need for elegantly written marketing materials, or perhaps the lawsuit-preventing value of a clear and complete field report. For those of us in academe, quality writing is essential for our scholarship and our tenure and promotion applications.

Surveys of employers in myriad fields demonstrate that businesses need employees who can communicate well. In most fields, this means speaking and writing well.[1]

Architects, of course, must be able to communicate visually, but the ability to communicate visually does not allow architects to abdicate their responsibility to speak and write well. In fact, some have argued that the relationship between architectural images and the written word is critical to architects realizing the full potential of their designs.[2]

Looking toward the future—a time of growing population, diminishing resources, and increasingly disruptive climate change—the practice of architecture will be increasingly difficult, requiring a level of mastery significantly advanced from 20th century standards. How will architects of the future address these difficulties? According to Oklahoma State University professors Tom Spector and Rebecca Damron, architects of the future will practice architecture in a fundamentally different way. They wrote, "The concept of the architect as Master Builder is disappearing, transforming into that of the architect as Master of Information."[3] This critical information will be gathered, analyzed, and disseminated largely through the writing process.

Writing manuals for architects

How are the architects of today being taught to write? This author started his research with an examination of some of the most popular writing manuals created specifically for architects and others in the design and construction industries. He examined the purpose and organization of the writing manuals, looking specifically for examples of reflective thinking that mirror Donald Schön's ideas of reflective practice.

Writing for Design Professionals

Stephen A. Kliment's *Writing for Design Professionals* is a scenario-based writing manual organized primarily by writing genre (e.g. "Marketing Correspondence," "Proposals," and "Writing in Academe").[4]

Writing for Design Professionals begins with a chapter on eight writing principles (with two additional sections). The final principle, "When to Break the Rules," is the closest the book comes to describing a writer's process. In that section, Kliment wrote:

> [W]hen writing, do not let rules or guidelines get in the way of **spontaneous expression**. If a snappy word, turn of phrase, or rearrangement of material strikes your fancy and in your view adds to the strength or sparkle of your message, trust your **intuition** and go for it.[5]

Both "spontaneous expression" and "intuition" echo Schön's concept of knowing-in-action, which will be explored later in this paper.

The Architect's Guide to Writing

Bill Schmalz's *The Architect's Guide to Writing* is a grammar and style manual, something of a Strunk and White for the designer.[6] Schmalz's book is basically arranged in two parts: grammar (e.g. chapters titled "The Slippery Sidewalks of Grammar," "Words and Their Meanings," and "The Punctuation Toolbox: Terminators") and style (e.g. chapters titled "Writing Numbers," "Names and Titles," and "Developing a Lean Writing Style).[7]

Although Schmalz's book is well organized and full of useful tips, *The Architect's Guide to Writing* is not very reflective in approach. Even the chapter titled "Editing Your Draft," which begs for a component of reflection, is a step-by-step set of instructions devoid of any sense of meta-thinking.

Writing Architecture

Yale University professor Carter Wiseman's *Writing Architecture* is primarily organized around six writing genres (persuasion, criticism, scholarship, literature, presentation, and professional communication).[8]

Perhaps the most interesting chapter is the first, titled "Structure: Getting Your Thoughts in a Row." In this chapter, Wiseman discussed process with some intriguing hints of a reflective process. For example, Wiseman argued for the use of notecards to organize ideas, which he admitted was "old-fashioned."[9] However, Wiseman suggested that the physical quality of the cards helps a writer to organize a series of ideas.[10] Wiseman also discussed word processing software and noted, "One disadvantage of the process is that we no longer have paper records to show how a piece of writing developed."[11] This prevents, in Schönian terms, reflecting on reflection-in-action, which will be discussed later.

Thinking more broadly, Wiseman also discussed the role of writing in architectural education. Echoing Spector and Damron, Wiseman argued, "Writing on architecture should be inseparable from the design process itself."[12] Assuming Wiseman is correct, and writing is an inseparable part of the design process, one should be able to teach writing as design is taught—that is. by engaging the reflective practitioner.

How Architects Write

Spector and Damron's *How Architects Write* starts with a chapter titled "How (and Why) Architects Write" followed by a series of chapters devoted to specific writing genres

(e.g. “Design Journals,” “History Term Papers,” and “Business Documents”).[13]

Of the writing manuals for architects cited in this paper, *How Architects Write* is the only one that directly references Schön. The reference, which appears at the beginning of “Chapter 2: Design Journals,” is brief. Spector and Damron wrote, “Donald Schön calls design a ‘reflective conversation with the situation.’”[14]

Given the direct reference to Schön, it is not surprising that Spector and Damron devote four pages to “Critical Reflection” in a chapter devoted to “Design Journals.”[15] In this section, Spector and Damron argue that architects have much to learn from what they observe and from their reflections on those observations

Like the previously mentioned authors, Spector and Damron primarily organize their book by writing genres. Germane to this paper, Spector and Damron devote a chapter to “Research Reports and Analyses,” but the chapter is disappointing from a Schönian perspective. Rather than instructing students how to write a report, the authors catalog a series of report types, starting with architectural programs, and describe what content may be appropriate for each report.

Summary of writing manuals

The above-referenced writing manuals provide much good advice (students and weaker writers would be well advised to purchase one and follow it). However, they are incomplete. Just as a book of architectural detailing is helpful but cannot teach one how to design a building, the writing manuals provide detail-level advice but critically little help with the process of writing “in the moment,” or what Schön calls “knowing-in-action.”

Teaching writing to architecture students

As part of an ongoing research project, this author will continue to examine past research on how architecture students are taught to write. At this point, however, a couple of points are warranted, based on preliminary research.

First, many of the articles addressing writing in architecture school appear to be a “one and done”—that is, a single published article (maybe two) that discuss writing in studio and/or a support class. This suggests that improving writing education in architecture schools may be a lonely, fatiguing, and often unrewarding battle. The exception appears to be a series of articles by Peter Medway, a professor of linguistics who studied how professionals communicate (among other subjects).

Second, considering the importance of Schön in the field of writing education and Schön’s enthusiasm for studio-based education, it strikes this author as ironic that no one appears to have put the two ideas together—that is, using Schön’s ideas to teach writing to architecture students.

How are architecture students currently taught writing? In 2010, Damron and Spector16 examined writing programs at various architecture schools. Efforts to improve writing in architecture schools have faltered, Damron and Spector argued, because “architectural education…has long held the role of the written word in design thinking at a certain reserve.”17 Looking at writing programs across design fields (including architecture), Damron and Spector found the following efforts:

• Ball State University—the College of Architecture and Planning, led by Dean Robert Fisher, participated in a Writing Across the Curriculum (WAC) program.

• Oklahoma State University—faculty in Design, Housing, and Merchandising worked with the English Department to add writing assignments to discipline-specific courses.

• Oregon State University—graphic design students take a 4000-level class that “draws parallels between the writing process and the design process.”

• University of Minnesota—the landscape architecture program worked with the Center for Writing to determine if writing assignments should be part of design studio.

• Virginia Tech—participated in a WAC program.[18]

Examining the above-listed programs, Damron and Spector observed:

> All of the programs we investigated had two things in common. First, they were paired with and/or co-taught by English departments and Writing Centers. Second, their emphasis was on "writing to enhance the design process" rather than to enhance job prospects after graduation.[19]

Efforts to improve writing in architecture schools are taking place in schools beyond those listed by Damron and Spector. Some of the most provocative research occurred at Iowa State University, where professors Thomas Leslie and Ann Munson experimented with a workshop designed specifically to improve architecture students' writing. Looking at the consistently poor writing quality of architecture students at their institution, Leslie and Munson wrote, "Both of us believed that the lack of writing ability in our department was not due to the students, but was instead a shortcoming in the curricular structure and philosophical aims of the program itself."[20]

Leslie and Munson started their exploration of writing in architecture schools by arguing that, as a group, architects are not the strongest writers. They argued, "Usually, architects are by definition visual thinkers, a group that has well-known problems with the linear nature of thought required by writing."[21] This is a point explored in more depth in an earlier paper by Gerald Grow.[22]

How, then, to address the problem? Leslie and Munson looked to the core of architectural education, the design studio. They wrote, "[W]e realized that writing could be taught in a format similar to studio, with time for one-on-one critiques, peer discussions, and a focus on development in addition to product."[23] This decision was anchored in their belief that "The craft of editing is remarkably similar to the discipline of re-designing."[24]

Leslie and Munson performed screen editing for all students to review, using the "track changes" function of the word processing software.[25] This form of live coaching is very similar to the coaching provided by a studio mentor to his student in Schön's narrative of a studio crit session. In both cases, students and teachers are engaging in what Leslie and Munson call the "process-rich realm of design."[26]

Donald Schön and the reflective practitioner[27]

Schön's research into the reflective practitioner stemmed from his belief that traditional research lacked relevance while traditional practice lacked rigor. According to Schön, the addition of professional schools to the traditional university, with its liberal arts and hard science focus, led to a "radical separation between research and practice" because research in the traditional university courses was isolated from the messiness inherent in professional practice.[28] Looking at the idea of addressing problems that are either (A) narrow, focused, but manageable or (B) broad, realistic, but uncontrollable, Schön wrote:

> The dilemma depends, I believe, upon a particular epistemology built into the modern research university, and, along with this, on our discovery of the increasing salience of certain "indeterminate zones" of practice—uncertainty, complexity, uniqueness, conflict—which fall outside the categories of that epistemology.[29]

The messiness—the "uncertainty, complexity, uniqueness, conflict"—of practice stands in stark contrast to the precision of what Schön calls "technical rationality," a kind of process that is "instrumental, consisting in

adjusting technical means to ends that are clear, fixed, and internally consistent."[30]

Schön argues that technical rationality works in clean, laboratory conditions but has limited value in messy, complex, real-world scenarios. For example, civil engineers can use the technical rationality of their education to figure out how to build, but they are less well-equipped to argue with absolute certainty about why or even if something should be built.[31] The latter two questions involve "a complex and ill-defined mélange of topographical, financial, economic, environmental, and political factors" that technical rationality is poorly situated to address.[32]

Technical rationality certainly has its place, however. Schön argues that technical rationality "becomes professional when it is based on the science or systematic knowledge produced by the schools of higher learning."[33] Many in the architecture, including architect Stephen Kieran, argue that more, not less, technical rationality is needed—specifically new knowledge in the field known broadly as "building science." As concerns about global climate change mount and client expectations of performance increase, architects will face an increasing number of measurable markers of performance. Likewise, the emergence of big data—the ability to see formerly invisible trends with the use of massive data sets—promises to change the design and management of future facilities.

For the reasons discussed above, architecture programs occupy a disadvantaged position in the modern research university. Although university architecture programs are more than 150 years old—the department of architecture at MIT was founded in 1868—architectural scholarship is not generally well-respected in the university community. The discipline of architecture, save the field of building science, is not terribly close to basic science, which is often considered the raison d'être of the modern research university. As Donald Schön observed, "The greater one's proximity to basic science, as a rule, the higher one's academic status."[34] Summarizing architecture's position, Schön wrote:

> Architecture is an established profession charged with important social functions, but it is also a fine art; and the arts tend to sit uneasily in the contemporary research university. Although some schools of architecture are free-standing institutions, most exist within a university, where they tend to be marginal, isolated, and of dubious status.[35]

Despite the less-than-sterling reputation of architectural scholarship, architectural education is often considered first rate. In Educating the Reflective Practitioner, Donald Schön argued that architectural education is the paragon of professional education and is well-suited for teaching students about the messiness of professional practice.

Schön's Reflective Practitioner

To understand Schön's concept of the reflective practitioner, one must understand key terms including "knowing-in-action," "reflection-in-action," and "reflecting on reflection-in-action."

Knowing-in-action is the "spontaneous, skillful execution of [a] performance" where "the knowing is in the action."[36] A bicyclist who makes countless instantaneous adjustments to keep the bicycle upright is demonstrating knowing-in-action.[37] Likewise, an architect who assembles a series of spaces on a floor plan—rotating, stretching, and re-assembling them so they work together—is demonstrating knowing-in-action.

Reflection-in-action occurs when the "familiar routine" of knowing-in-action is interrupted by a "surprise" moment—whether that surprise is good, ill, or neutral.[38] For example, a bicyclist hits a pothole—a new experience—and either stays on course or crashes the bicycle. Either way, the bicyclist has an opportunity for reflection-in-

action to determine what was done correctly (or incorrectly) and, more importantly, what needs to happen the next time a pothole is encountered. Similarly, an architect working on a floor plan may discover that a single-loaded corridor provides an opportunity to provide daylight and fresh air to the corridor. This "surprise" enables the architect to consider space planning in a new way.

Reflecting on reflection-in-action is Schön's term for meta-thinking, or thinking about one's thinking. The bicyclist who is surprised by the pothole might consider other potential road hazards and how they could be addressed even before they are encountered. The architect who "discovers" the single-loaded corridor may want to revise his or her design process so other obvious (after the fact) opportunities are not missed on future projects.

Reflecting on reflection-in-action has the potential to be the epistemological basis of inquiry in a broad range of fields, including not only design fields such as architecture, but also other practice-based fields as diverse as counseling and music education, where the artistry of the professional is critical to success.[39]

Writing is one such practice-based field. The process of writing results in a definitive product—a text which can be analyzed and critiqued. Because of this, teaching writing should mirror teaching studio closely enough that the processes Schön observed in the studio crit should work for a writing crit.

Some thoughts on the limits of "reflection"

Reflection in its myriad forms (reflective essays, reflective journals, etc.) became trendy in educational circles, as Schön himself acknowledged in the introduction to his book The Reflective Turn, which is a series of case

studies from a wide range of scholars who follow Schön's philosophy.[40]

As often occurs in education circles, many educators bought into the hype surrounding reflection, but fewer understood the substance. The now ubiquitous reflective essay is a case-in-point. Assigned outside the context of professional practice—or some other meaningful intellectual construction—the reflective essay often becomes a vapid exercise in which a student of limited experience explores that limited experience instead of engaging deeply with a difficult concept.[41]

In his article "Schooling Heidegger: on being in teaching," education professor J.F. Donnelly explored the limits of Schön's framework of the reflective practitioner, specifically in relationship to education. Concerning the activities of many educators, including the "design" of curricula, Donnelly wrote:

> But it is questionable whether such activity has much in common with the Schönian design studio, or even musical performance. These practices involve immediate feedback and direct, almost sensuous, immersion in the act of design.[42]

Building his argument that reflective practice may not be meaningful for teachers, Donnelly excerpted the following from Educating the Reflective Practitioner.

> [The] designer [is] one who converts indeterminate situations to determinate ones. Beginning with situations that are at least in part uncertain, ill defined, and incoherent…

> designers construct and impose a coherence of their own.[43]

While the abovementioned quote suggests that reflective practice may not be right for curriculum design, it may be well aligned with writing. Although Donnelly is a critic of Schön, the framework of his criticism tends to confirm, rather than contradict, the potential for substantive reflective practice in the teaching of writing.

Research proposal

The proposed research project has three parts.

Part I: Teach writing-in-action skills to design studio students

This author plans an immediate intervention with a fourth-year design studio course during which the writing-in-action process will be introduced. The process will work as follows:

1. Students will be asked to justify their capstone project in writing.

2. Students will be asked to bring a partially completed draft to the studio (much like a progress print of a current design).

3. Using a carefully developed script, the instructor will explain the writing-in-action process to each student.

4. Working individually with each student, the instructor will coach the student through the composition process, asking questions and making comments as the students refine and expand their essays.

In future years, writing samples from the beginning of the semester (before the writing-in-action process is introduced) will be compared to papers produced at the end of the semester, providing evidence of pre- and post-intervention conditions.

Part II: Teach writing-in-action skills to design studio students

Following Carter Wiseman, and Tom Spector and Rebecca Damron, this author believes that writing is an integral part of the design process. Base on the actions discussed in Part I above, students will be required to submit progress writings as part of their capstone design. The author hopes that these writings will improve the quality of the design projects while leading to more substantive discussions during final reviews.

Part III: Test the writing-in-action process in a general education English course

Because the architecture program at Ferris State University is small, the number of potential test subjects is small. Furthermore, the author believes, based on the literature review, that it is imperative to immediately reframe the capstone design studio to integrate writing into the capstone design experience. Given the importance of the material, the author believes that the use of a control group would be unethical.

However, the author is less sure about the Writing-in-Action approach for a more general audience. Thus, the author is working with a faculty member in the English Department to develop a writing-in-action intervention for a general education English course. Such an approach would allow for the ethical creation of subject and control groups.

Conclusion

Writing is as critical skill for architects, but it is a skill that has been taught haphazardly across our architecture schools. Fortunately, architecture schools are well versed in studio teaching, the epitome of Donald Schön's concept of the reflective practitioner. Thus, a Schönian

approach to teaching writing would seem like a logical approach. The research plan proposed in this paper is designed to test that concept.

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10 Ibid., pp 20-23.

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12 Ibid., introduction (unnumbered page).

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14 Ibid, p. 19. Please note: I could not find this exact quote in the original material.

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16 In the referenced article, Rebecca Damron's name appears first. In *How Architects Write*, Tom Spector is listed first.

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