

科研成果在风景园林实践中的作用

The **R**ole of **R**esearch in **L**andscape **A**rchitecture **P**ractice

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This book was mostly based on Dr. CHEN Zheng's Ph. D. dissertation submitted to Virginia Polytechnic and State University. In this book, Dr. Chen collected data about the production, dissemination and application of research knowledge within the profession of landscape architecture in the United States, and then examined the problems of knowledge accumulation and dissemination. Based the observations above, improving strategies on knowledge accumulation were proposed. Two datasets were collected in this study. One is a survey conducted in 2009 on the educators in Council of Educators in Landscape Architecture (CELA) concerning their research directions, funding, publication, their understanding of research, etc.. The other is a sampled survey conducted in 2010 on American Society of Landscape Architects (ASLA) members concerning their knowledge access and needs, the use of research in everyday work, their understanding of research, etc.. This book provides a holistic scope of the research directions and emerging trends in landscape architecture, as well as its knowledge dissemination and application, with a target audience from the researchers in landscape architecture and related disciplines.

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Preface

This dissertation studies the role of research in landscape architecture practice. The ultimate goal is to understand how landscape architecture can enhance its authority through research. I chose this dissertation topic largely because of my personal experience of being a landscape architect in China. In China, landscape architects often have low prestige in practice. They are paid less than architects and urban planners. It is not unusual when a landscape architect is told that his or her service is no longer needed, since an architect or an urban planner did his or her work when they designed the buildings. When I was in my second year, a professor asked us two questions: "Why does society need landscape architects anyway? What core knowledge does landscape architecture have that is unique to the profession and makes it irreplaceable?"

These two questions have haunted me ever since and I have never had a satisfactory answer. Since modern landscape architecture is relatively young in China, I was expecting to find an answer in countries outside China, where the profession is more matured. A German practitioner told me that I probably should look for the answers in landscape architecture in America, since she thought that the status of landscape architects in Germany, in her eyes, is only a little better than that in China, and to the best of her knowledge, American landscape architects seem to have higher prestige, in general.

The eagerness to find an answer to the two questions drove me to pursue a Ph.D. in the United States. However, I found that American landscape architects are still struggling with problems concerning professional authority, too. For example, a survey participant commented that: "In many states a landscape architect's license stamp can be substituted by an architect or an engineer's stamp. This truly undervalues the existence of the profession." I still found a problem instead of an answer in landscape architecture practice in America. My efforts in exploring an answer to the authority of the profession of landscape architecture led to this dissertation.

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Chapter I Introduction

1.1 Background

Landscape architecture was founded on a broad spectrum of knowledge. The early practitioners in this profession were generalists with practical skills and a breadth of interests in dealing with creating and preserving natural beauty, as well as offering urban populations access to nature (Eliot, 1910). The scope of knowledge of early American pioneers in landscape architecture, such as Frederick Law Olmsted and Charles W. Eliot, ranged from biology, to the physical environment, to aesthetics, and to socioeconomics (Forman, 2002). The scope of their practice ranged from garden design, to park design, to park system planning, to residential suburb planning, to scenic preservation. In its early stage, the profession did not share a generally recognized specialty (Simo, 1999). Since then, the knowledge scope of landscape architects is general and broad.

With the development in communication techniques in the 20th century, significant changes took place in how knowledge was disseminated. In the Internet age, human knowledge is becoming more accessible (Dillman et al, 2009; Friedman, 2005). Human knowledge is being advanced in both scope and depth, which provides new opportunities and challenges to landscape architects. Managing a broad range of specialized knowledge niches became very difficult, and the old identity of landscape architects as an omni-know-all generalists was challenged.

Landscape educators today are sharing information primarily through books, refereed journals, conferences and professional magazines (Chen et al, 2011). The most often read refereed journals as reported by CELA educators include *Landscape Journal*, *Landscape and Urban Planning*, *Journal of the Amer-*

ican Planning Association, *Journal of Landscape Architecture*, and *Landscape Research* (Chen et al, 2011).

1.2 Problem Statement

There is a growing concern about the knowledge foundation of the profession, and some landscape architects have perceived a need that professional practice should be grounded in a body of more reliable knowledge, currently vaguely defined as “research”:

Albert Fein: Artistic ability, or design creativity, is one factor by which individual practitioners differentiate their efforts. Hence, it is unlikely that any two solutions to a problem will be identical; however, all solutions to be valid must satisfy certain scientific needs and criteria. (Fein, 1972, p.5–11)

Ervin Zube: The professional emphasis has been on practice and, in contrast to other professions such as engineering, medicine, and education, the practitioner cannot readily turn to a systematic body of information, derived from research and find answers to or information about pressing questions. (Zube, 1981, p.8)

James F. Palmer and Richard C. Smardon: It is our opinion that landscape architecture, as a profession, is not structured in a way to identify research needs, to support and encourage a response to those needs, and to integrate the response into the practice of landscape architecture. There is a need for a scientific and scholarly discipline that seeks to improve the performance in professional practice. (Riley & Brown, 1992, p. 178)

Fellows of ASLA: ... Landscape architects need “better knowledge” in order to be effective. It is a broad concern and was defined in three ways: as a need for better theoretical and/or technical expertise; as a need for research and as a need for greater academic rigor. (Miller, 1997, p. 68)

Elizabeth Meyer: Our clients’ calls for data, for postconstruction evaluation, and for numbers are loud. But there’s a lot less academic

research in this area than one would assume or hope for. (Jost & Lamba, 2010, p. 58)

The above quotes indicate a concern that the profession seems unable to advance its knowledge sufficiently through research. To address this issue, there are several empirical studies examining the problems in academic research (Chen et al, 2011; Chenoweth & Chidister, 1983; Milburn et al, 2003; Milburn et al, 2001). There are also a few publications on research methods to address the lack of research skills among landscape architecture educators (Francis, 2001; March & Smith, 1995). Not only academicians, but also practitioners and organizations are taking actions to connect the profession with research. Innovative research projects as well as knowledge-compiling work has been done by practitioners (Jost & Lamba, 2010). Projects such as Sustainable Sites Initiative (<http://www.sustainablesites.org>), Landscape Architecture Foundation's Case Studies Investigation (<http://www.lafoundation.org/research/case-study-investigation/>) and Performance Landscape Series (<http://www.lafoundation.org/research/landscape-performance-series/>) were initiated to bridge landscape practice with research.

1.3 Research Questions and Objectives

If the perceptions listed above are true, that landscape architecture is unable to advance its knowledge sufficiently through research, that may jeopardize the authority of the profession. This dissertation studies the role of research in landscape architecture. Knowing what role research is playing in landscape architecture and what problems the profession may have in advancing its knowledge, the profession can better understand how it may enhance its authority through research. This study examines the phenomena of research use in practice, as well as the production and dissemination of research findings in this profession. Therefore, the following research questions are asked in this study:

1. What are the concerns of landscape architecture practice?
 - a. How has the profession of landscape architecture changed over time?
 - b. What is the perceived knowledge-base of the current practice of landscape architecture? What are the changes in the perceived knowledge-

base?

- c. What are the knowledge areas and domains of landscape architecture research?
2. What is the significance of research in landscape architecture?
 - a. What is the definition of research in landscape architecture practice?
 - b. What are landscape architects' attitudes toward research?
 - c. What are the types of thinking and sources of knowledge that support decision-making in landscape architecture?
 - d. For what purposes do landscape architects use research in practice?
3. How do landscape architects perceive the need for research?
 - a. In what design stage(s) do landscape architects perceive a need for research?
 - b. In what knowledge areas do landscape architects perceive a need for additional research?
4. How are research findings disseminated in landscape architecture?
 - a. Where do landscape architects obtain new knowledge in this profession?
 - b. Who is producing knowledge through research? What knowledge is produced?
 - c. Where do researchers disseminate their research findings?

With the knowledge about the concerns of landscape architecture practice and the knowledge that the current practice is based on, one would be able to find whether the profession lacks certain knowledge to maintain its prestige as a modern profession. With the knowledge about the significance of research in the profession and the perception and the dissemination of research, one would be able to tell how knowledge is advanced through research in landscape architecture practice, and what its problems, if any, may be. If a lack of certain knowledge or a problem in the advancement of knowledge can be identified in landscape architecture, some actions may be taken to improve the current situation.

As this study concerns the phenomena of the advancement of knowledge in landscape architecture, research will be defined as the activities that are done in a rigorous or systematic manner and can lead to the discovery of new information, new understandings, or new applications in the field of landscape architecture.

1.4 Study Significance

This dissertation fills a lack of knowledge about the current use of research in practice, as well as the dissemination and perceptions of research. Though there are several empirical studies examining what may encumber educators from doing more research (Chen et al, 2011; Chenoweth & Chidister, 1983; Milburn et al, 2003; Milburn et al, 2001) and research that is more applicable to practice, there are very few empirical studies on how research findings are actually used in practice. The limited studies are either too old to inform current practice (i.e., Fein, 1972; Palmer et al, 1984), or used knowledge categories combined in ways that are difficult to tie to specific research studies (i.e., ASLA et al, 2004) .

This study collected first-hand empirical data on research use and research need in current landscape architecture practice, as well as the perceptions about research among landscape architects, in which data either are out of date or do not exist. A survey on research use and research perceptions was conducted among ASLA members, which was based partially on prior surveys on research engagement and dissemination among CELA members (Chen et al, 2011; Chenoweth & Chidister, 1983; Milburn et al, 2003). With this information, this study is able to identify reasons why the landscape architecture profession cannot advance its knowledge through research sufficiently, from research production to research dissemination, and to the use of research in practice. The findings can directly guide current actions in connecting the profession with research.

1.5 Study Organization

The dissertation is organized in five chapters: introduction, literature review, methodology, results and discussion, and conclusion and implications. The introduction outlines the background, the problem statement, the research questions and the significance of this study. All the other chapters are organized and presented according to the four research questions addressed in the introduction chapter.

Chapter II Literature Review

In order to address the problem that the profession may be unable to advance its knowledge sufficiently through research, this dissertation began with examining the existing literature in terms of the research questions listed in Chapter I. It is organized in five sections, based on the research questions. Section 2.1 discusses professionalization and knowledge. Section 2.2 discusses the perception of knowledge in landscape architecture practice. Section 2.3 discusses the need of research as perceived by landscape architects. Section 2.4 discusses dissemination of research findings within the profession of landscape architecture. A summary is provided in section 2.5.

2.1 The Concerns of Landscape Architecture Practice

This section addresses the first research question “What are the concerns of landscape architecture practice?” Subsection 2.1.1 discusses the role of knowledge in modern professionalization in general. Subsection 2.1.2 provides a brief history of the professionalization of landscape architecture and the changing scope of knowledge within it. Subsection 2.1.3 discusses the existing scope of knowledge in landscape architecture. Finally, a summary of the section is provided in subsection 2.1.4.

2.1.1 Professionalization and Knowledge in Modern Professions

Professionalization

Professionalization is a type of occupation control which maintains the expertise of a certain practice (Abbott, 1988). Since the nineteenth century saw the first development of modern professions, sociologists have studied professionalization (Turner, 1989). An earlier theory saw professionalization as an inde-

pendent system of institutional structures, such as professional registration, to control an asymmetric expert-client relation (i.e., Parsons, 1938), in which clients trust professionals as experts in a certain practice. A newer theory, cultural theory, viewed professionalization as a result of interactions between professions and larger social processes (i.e., Larson, 1977). A few current leading sociologists in professionalization (i.e., Abbott, 1988; Freidson, 2001) believe that professionalization is centered in the control of special knowledge to support professional practice in professions, in general.

Abbott (1988) argued that modern professions are a type of occupation control through legitimization of expertise, as well as structural guarantees. In order to legitimize its expertise in a certain practice, a modern profession needs to specify its jurisdiction to the public and to legitimize its expertise in this jurisdiction by “[demonstrating] the rigor, the clarity, and the scientifically logical character of professional work” (p.54). These demonstrations usually involve academic knowledge and research, and are often different from practical knowledge about how to perform professional actions.

Cognition-based knowledge and Action-based Knowledge

Professions involve two types of knowledge that will be referred to as action-based knowledge, and cognition-based knowledge, in this dissertation. Action-based knowledge, also known as “knowledge how,” is “knowing how to do things” (Ryle, 1945), or “knowing how to perform skills” (Roland, 1958), such as the discovery of ways and methods of doing things. Cognition-based knowledge, also known as “knowledge that,” is descriptive knowledge “knowing that something is the case” (Ryle, 1945), or “knowing propositions of a factual nature” (Roland, 1958), such as the discovery of truth and facts.

These two types of knowledge play different roles in modern professions. Action-based knowledge directly guides professional actions, while cognition-based knowledge offers explanations and justifications for these actions. The explanations generated from cognition-based knowledge often define the prestige of a modern profession in professional competitions. For example, with years of observations of successful and unsuccessful medical cases in a specific

area, an experienced nurse may have as much practical knowledge in diagnosis and prescription as doctors (Abbott, 1988). Abbott argued that the public placed more trust in doctors than nurses as a profession in the 1980s, since doctors were able to demonstrate the rationale of their diagnoses and prescriptions using a body of cognition-based knowledge.

2.1.2 Professionalization of Landscape Architecture and Its Knowledge

Landscape architecture was founded in the beginning of the 20th century, and was centered in action-based knowledge in aesthetics and professional skills (Simo, 1999; Zube, 1998). This profession, at its early stage, had an aesthetic focus and worked with the beauty of nature (Eliot, 1910).

With increased members and professional work in the Progressive Era and New Deal construction programs, there was a growing concern about the identity of the profession of landscape architecture in the mid 20th century, calling for more public relations for a clear image and a defensible justification of the profession. As revealed in the comments to a survey that Barton (1961) conducted, many landscape architects had concerns that the profession was losing its territory to architects and other aligned professions due to poor professional public relations. Better professional public relations were needed to inform the public of the scope of landscape architecture practice, and to justify “why [landscape architects] can do it better than any other professional person” (p.25).

In the late 1960s and early 1970s, the concerns in landscape architecture were observed to expand from aesthetics to ecological needs (Fein, 1972; see Table 1), and the knowledge bases began to expand from specialized knowledge and skills developed by its practitioners into science (Fein, 1972; see Table 2). As a result, Fein’s study recommended that the profession develop scientific bases to support design creativity.