

# Educational Administration Quarterly

<http://eaq.sagepub.com/>

---

## **A Review of Three Decades of Doctoral Studies Using the Principal Instructional Management Rating Scale: A Lens on Methodological Progress in Educational Leadership**

Philip Hallinger

*Educational Administration Quarterly* 2011 47: 271 originally published online 29  
October 2010

DOI: 10.1177/0013161X10383412

The online version of this article can be found at:  
<http://eaq.sagepub.com/content/47/2/271>

---

Published by:



<http://www.sagepublications.com>

On behalf of:



University Council for Educational Administration

**Additional services and information for *Educational Administration Quarterly* can be found at:**

**Email Alerts:** <http://eaq.sagepub.com/cgi/alerts>

**Subscriptions:** <http://eaq.sagepub.com/subscriptions>

**Reprints:** <http://www.sagepub.com/journalsReprints.nav>

**Permissions:** <http://www.sagepub.com/journalsPermissions.nav>

**Citations:** <http://eaq.sagepub.com/content/47/2/271.refs.html>

>> [Version of Record](#) - Mar 15, 2011

[OnlineFirst Version of Record](#) - Oct 29, 2010

[What is This?](#)

# A Review of Three Decades of Doctoral Studies Using the Principal Instructional Management Rating Scale: A Lens on Methodological Progress in Educational Leadership

Educational Administration Quarterly  
47(2) 271-306

© The University Council for  
Educational Administration 2011  
Reprints and permission: <http://www.sagepub.com/journalsPermissions.nav>

DOI: 10.1177/0013161X10383412

<http://eaq.sagepub.com>



Philip Hallinger<sup>1</sup>

## Abstract

**Background:** This report continues in the lineage of reviews of research in educational leadership and management by examining methodological approaches used by doctoral researchers in studying principal instructional leadership. **Research Design:** The article reviews the full set of 130 doctoral dissertations completed over the past three decades that used the Principal Instructional Management Rating Scale (PIMRS). The report analyzes trends in the research foci, conceptual models, research designs, and statistical methods employed in these studies. **Findings:** The study finds that interest in instructional leadership among scholars and practitioners remained strong throughout the period of the review, the PIMRS has proven a reliable and valid data collection tool, and the use of research methodology has improved in several specific areas. Nonetheless, the results also suggest that the conceptual frameworks and methodologies used by these doctoral students

---

<sup>1</sup>The Hong Kong Institute of Education, Hong Kong

## Corresponding Author:

Philip Hallinger, The Hong Kong Institute of Education, 10 Lo Ping Rd., Tai Po, Hong Kong

Email: [Hallinger@gmail.com](mailto:Hallinger@gmail.com)

were, on the whole, inadequate for the task of contributing to either the theoretical or the practical knowledge base in this field. This impression of weak knowledge accumulation was further reinforced by a citation analysis that found limited citations of the dissertations by other researchers in the field at large or by the dissertation authors themselves. These conclusions applied equally to EdD and PhD dissertations, regardless of the level of research university from which they were produced. **Conclusions:** The review adds empirical evidence of trends in research quality gathered over a 30-year period to the renewed debate over the purpose and direction of the doctoral dissertation in this professional field.

### **Keywords**

educational administration, instructional leadership, principalship, research methods

This report continues in the lineage of published reviews of research that have focused on mapping methodological progress in educational leadership and management. Reviews conducted in the 1960s (Erickson, 1967; Lipham, 1964), 1970s (Haller, 1979), 1980s (Bridges, 1982; Murphy, Hallinger, & Mitman, 1983; Rowan, Bossert, & Dwyer, 1983), and 1990s (Hallinger & Heck, 1996a, 1996b; Heck & Hallinger, 1999) analyzed methodological trends and challenges in their respective eras. These reviews have played a critical role in raising standards in empirical research in educational leadership and management over the past five decades.

Evidence of progress in this field of inquiry has been evident in the evolution of empirical research on instructional leadership. In 1967, Bridges lamented the lack of systematic theorizing and empirical inquiry into the practice of instructional leadership. Fifteen years later, Bossert, Dwyer, Rowan, and Lee (1982) signaled the emergence of instructional leadership as a research-based construct, highlighting its potential for contributing to our understanding of how leadership affects student learning. By the mid-1990s, Hallinger and Heck (1996a, 1996b) observed that instructional leadership had become the most prevalent perspective adopted by researchers engaged in the study of school leadership effects. At the turn of the millennium, instructional leadership metamorphosed from a largely North American perspective into a construct with international currency as policy makers across the globe evinced a mounting desire to understand and strengthen "leadership for learning" (Gewertz, 2003; Hallinger, 2003; Hunter Foundation, 2005; MacBeath & Cheng, 2008; Murphy, Elliott, Goldring, & Porter, 2007; Southworth, 2002; Stricherz, 2001). Finally, recent positive findings from research syntheses

and meta-analyses have further enhanced the prominence of instructional leadership in school leadership research (e.g., Leithwood, Day, Sammons, Harris, & Hopkins, 2006; Robinson, Lloyd, & Rowe, 2008; Waters, Marzano, & McNulty, 2003).

Given these convergent trends in policy and research, we suggest the timeliness for a review that examines the methodological approaches scholars have been using to study instructional leadership. More specifically, in this review we analyze a data set of 130 doctoral studies that employed the Principal Instructional Management Rating Scale (PIMRS; Hallinger, 1982, 1990), the most widely used instrument in school leadership research over the past 30 years (Hallinger, 2008; Hallinger & Heck, 1996a). The analysis of a large number of studies employing a common instrument over a substantial period of time offers a unique opportunity to investigate methodological trends in empirical research on educational leadership. Doctoral studies represent the largest body of research in educational leadership and management. A review that maps the methodological features of a substantial body of empirical studies on a key topic has the potential to redirect future research in more productive directions.

In this report, we train a methodological lens on this database of PIMRS studies to address two goals. The primary goal is to map trends in the conceptual models and quantitative methodologies employed by researchers in the study of instructional leadership over the past 30 years. This effort will highlight improvements in the models and methods applied to the study of instructional leadership and yield recommendations for methodological improvements in educational leadership.

The second goal of this review focuses more specifically on understanding the nature of methodologies used by doctoral students in educational leadership and management. The database under review consists of studies conducted by doctoral students in more than 85 American universities during the past three decades. The field is currently in a period of ferment during which scholars have been rethinking the purposes and nature of doctoral training in educational leadership and management (e.g., Agosto, 2009; Archbald, 2008; Hallinger & Bridges, 2007; Murphy, 2006; Murphy & Vriesenga, 2005, 2006). The analyses that compose the body of this study will provide empirical data that can inform current debates over the direction of doctoral research training in educational leadership and management.

## **Instructional Leadership as a Domain of Educational Leadership and Management**

In this section we review the evolution of empirical research that has focused on the construct of instructional leadership. Given the methodological focus

of this report, we highlight trends in the conduct of empirical research rather than specific research findings. Moreover, because the review is centered on studies that employed the PIMRS, we provide an explication of its underlying conceptual framework and the scale's properties.

### *Evolution of Instructional Leadership as a Construct in Research*

Among the global trends in educational leadership and management that emerged over the past 30 years, few have been more significant, widespread, or persistent than the focus on understanding linkages between school leadership and learning (Bell, Bolam, & Cubillo, 2003; Bossert et al., 1982; Hallinger & Heck, 1996a; Leithwood, Anderson, Mascall, & Strauss, 2010; MacBeath & Cheng, 2008; Murphy et al., 2007; Robinson et al., 2008; Southworth, 2002; Witziers, Bosker, & Kruger, 2003). Early interest in this issue can be traced back to the conceptual efforts of Bridges (1967) and the empirical research of Gross and Herriot (1965) in the United States. However, as suggested earlier, it was not until the 1980s that scholars began to explore this relationship in a more programmatic and sustained fashion (Hallinger & Heck, 1996a; Hallinger & Leithwood, 1994; Leithwood, Begley, & Cousins, 1990). It was during this era when findings from research on school effectiveness and school improvement emerged to reinforce a strongly held belief among policy makers and practitioners that principal leadership "makes a difference" in school performance (Edmonds, 1979). More specifically, these bodies of research identified principal instructional leadership as a key factor in instructionally effective schools (Bossert et al., 1982; Leithwood & Montgomery, 1982).

Yet scholars who critiqued this literature also noted limitations in empirical investigations of the principal's role as an instructional leader (Bossert et al., 1982; Cuban, 1984; Leithwood & Montgomery, 1982; Murphy et al., 1983; Rowan et al., 1983). These included,

- Lack of clearly explicated conceptual frameworks for studying relevant constructs
- Lack of valid and reliable instrumentation for studying the role
- Lack of theoretical models that articulated how this role influenced student learning
- Reliance on weak research designs, ill equipped to test for causal effects

These were cause for concern in light of burgeoning attempts to embed emerging research findings into government policies and principal training curricula (Barth, 1986; Cuban, 1984).

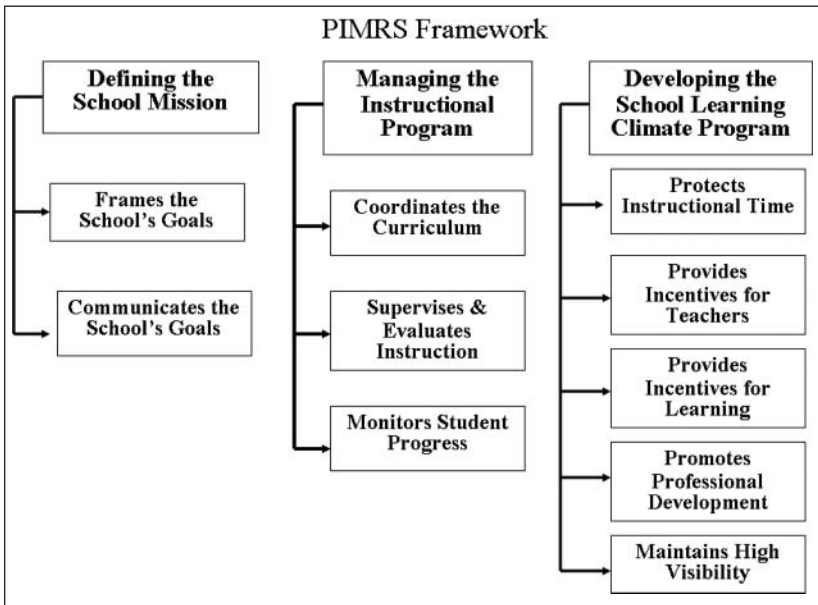
This research-based focus on instructional leadership subsequently led to the development of new conceptual frameworks and instruments (e.g., Bamberg & Andrews, 1990; Hallinger, 1982; van de Grift, 1990; Villanova, Gauthier, Proctor, & Shoemaker, 1981). Over the ensuing decades scholars used these research tools to generate a substantial body of empirical studies of instructional leadership. This research has been the subject of analytical reviews conducted by scholars in North America (Hallinger & Heck, 1996a, 1996b; Leithwood et al., 2006; Leithwood et al., 2010; Waters et al., 2003), Europe (Bell et al., 2003; Southworth, 2002; Witziers et al., 2003), and Australia and New Zealand (Mulford & Silins, 2003; Robinson et al., 2008). Yet with but one exception (Hallinger & Heck, 1996b), these reviews have tended to focus on synthesizing research findings rather than analyzing methodological approaches in this literature.

In the 1980s when instructional leadership emerged as a new construct, some scholars questioned both its relevance and viability as a guiding metaphor for school leadership (Barth, 1986; Cuban, 1984). Thirty years later, “instructional leadership” and “leadership for learning” are widely accepted by policy makers and practitioners as essential elements of management practice in schools. Indeed, recent reviews of research largely confirm early assertions concerning the relationship between instructional leadership and student learning (see Leithwood et al., 2010; Robinson et al., 2008; Waters et al., 2003). Thus, contrary to early predictions, instructional leadership has demonstrated impressive staying power as a core concept guiding both practice in the field of educational leadership and management.<sup>1</sup>

### *Instructional Leadership Framework*

Thirty years ago, in their seminal review of the literature, Bossert and colleagues (1982) defined the construct of *instructional management*. They selected the term *instructional management* because they inferred that this role of the principal revolved around managerial functions concerned with the coordination and control of curriculum and instruction. Their instructional management framework became an influential model that, to this day, continues to guide researchers in this field.

Although Bossert and his colleagues coined the term *instructional management*, over time *instructional leadership* came to be accepted as the term commonly used by scholars and practitioners. In our view, the formal distinction between these conceptual terms lies in the sources of power and means proposed to achieve results. Instructional *leadership* became the preferred term because of the recognition that principals who operate from this frame of reference rely more on expertise and influence than on formal authority



**Figure 1.** Principal Instructional Management Rating Scale (PIMRS) conceptual framework

and power to achieve a positive and lasting impact on staff motivation and behavior and student learning.

The PIMRS (Hallinger, 1982, 1990) is grounded in a conceptual framework that proposes three dimensions in this role: *Defining the School's Mission*, *Managing the Instructional Program*, and *Promoting a Positive School Learning Climate* (Hallinger & Murphy, 1985; see Figure 1). These dimensions are delineated into 10 instructional leadership functions. Two functions, Framing the School's Goals and Communicating the School's Goals, compose the *Defining the School's Mission* dimension. These functions concern the principal's role in working with staff to ensure that the school has a clear mission and that the mission is focused on academic progress of its students. Although this dimension does not assume that the principal defines the school's mission alone, it does propose that the principal is responsible for ensuring that such a mission exists and for communicating it widely to staff. This dimension is the starting point for creating a learner-centered school.

The second dimension is *Managing the Instructional Program*. This incorporates three leadership functions: Supervising and Evaluating Instruction,



Coordinating the Curriculum, Monitoring Student Progress. This dimension focuses on the role of the principal in “managing the technical core” of the school. In larger schools, it is especially clear that the principal is not the only person involved in monitoring and developing the school’s instructional program. Yet this framework assumes that coordination and control of the academic program of the school are key leadership responsibilities of the principal.

The third dimension, *Promoting a Positive School Learning Climate*, includes several functions: Protecting Instructional Time, Promoting Professional Development, Maintaining High Visibility, Providing Incentives for Teachers, and Providing Incentives for Learning. This dimension is broader in scope and intent than the second dimension and overlaps with dimensions incorporated into transformational leadership frameworks (Hallinger, 2003; Leithwood et al., 2006). It conforms to the notion that successful schools create an “academic press” through the development of high standards and expectations and a culture that fosters and rewards continuous learning and improvement.

## The PIMRS Instrument

The original form of the PIMRS (Hallinger, 1982) contained 11 subscales and 72 “behaviorally anchored” items (see Hallinger, 1982, and Latham & Wexley, 1981, for discussions of behaviorally anchored rating scales and their development). Subsequent revision of the instrument reduced the instrument to 10 subscales and 50 items (Hallinger, 1990). For each item, the rater assesses the frequency with which the principal enacts a behavior or practice associated with that particular instructional leadership function. Each item is rated on a Likert-type scale ranging from 1 (*almost never*) to 5 (*almost always*; see Figure 2). The instrument is scored by calculating the mean for the items that compose each subscale. This results in a profile that yields data on perceptions of principal performance on each of the 10 instructional leadership functions.

Three parallel forms of the instrument have been developed and tested: a self-assessment form to be completed by the principal, a teacher form, and a supervisor form. The items that compose each form are identical; only the stems change to reflect the differing perspectives of the role groups. Early studies found significant differences in perceptions across role groups (Hallinger & Murphy, 1985; Krug, 1986; O’Day, 1984). Validation studies in the United States indicate that the PIMRS form that solicits teachers’ perceptions provides the most valid data of the three forms.

The original validation study found that the PIMRS met high standards of reliability (Hallinger, 1983). All 10 subscales exceeded .80 using Cronbach’s

To what extent does your principal. . . ?

**I. FRAME THE SCHOOL GOALS**

	Almost Never	Almost Always
1. Develop a focused set of annual school-wide goals	1 2 3 4 5	1 2 3 4 5
2. Frame the school's goals in terms of staff responsibilities for meeting them	1 2 3 4 5	1 2 3 4 5
3. Use needs assessment or other systematic methods to secure staff input on goal development	1 2 3 4 5	1 2 3 4 5
4. Use data on student academic performance when developing the school's academic goals	1 2 3 4 5	1 2 3 4 5
5. Develop goals that are easily translated into classroom objectives by teachers	1 2 3 4 5	1 2 3 4 5

From *PIMRS - Teacher Form 1.3* (Hallinger, 1983, p. 2)

**Figure 2.** Sample Principal Instructional Management Rating Scale (PIMRS) rating subscale: Teacher form

test of internal consistency. Subsequent studies have generally substituted Ebel's (1951) test for calculating interrater reliability for Cronbach's formula. This test provides a more accurate test of reliability for ratings aggregated from a set of schools where respondents within schools (e.g., teachers) are rating a feature of the school (i.e., the principal). These studies have supported the original validation study in its conclusion that the scale provides reliable data on instructional leadership (e.g., Dunn, 2010; Fulton, 2009; Hallinger, Taraseina, & Miller, 1994; Harris, 2002; Howe, 1995; Jones, 1987; Leitner, 1994; Mercer, 2004; Moore, 2003; O'Day, 1984). Studies have further tested the PIMRS for face validity, content validity, and discriminant validity. Initially, the instrument was judged to be a valid measurement tool for use at the elementary school level. Subsequent studies referred to in this article expanded on the instrument's validation (e.g., Hallinger et al., 1994; Howe, 1995; Jones, 1987; Leitner, 1994; O'Day, 1984).

It is not the purpose of this report to systematically assess the PIMRS as a tool for research. Given the purposes of this review, it suffices to conclude that the instrument appears to have provided a reliable and valid means of assessing the instructional leadership of school principals. Given earlier cited critiques that highlighted the lack of reliable instrumentation, this finding lays a necessary foundation for our subsequent analyses.

## Method of the Review

Following in the tradition of other published reviews of research, this effort used critical synthesis (Dixon-Woods, Agarwal, Jones, Young, & Sutton, 2005; Wallace & Poulson, 2003) to describe and analyze patterns in the methodological characteristics of the PIMRS studies. Our approach entails a quantitative synthesis of study characteristics aimed at revealing trends in the conduct of research across a particular set of studies over time.

We then subject the results of this synthesis of methodological characteristics to further critical and quantitative analysis. The Mantel-Haenszel test, a form of chi-square analysis of differences between variables, was used to illuminate factors that could offer insights into the identified trends.

## The Sample

The author searched Dissertation Abstracts for studies that used the PIMRS using a variety of keywords: *instructional leadership*, *PIMRS*, *principal leadership*, *instructional management*, *Hallinger*. The author obtained access to

**Table 1.** Trend of Principal Instructional Management Rating Scale Studies by Institutional Level of Focal Administrator 1983–2010

Institutional unit	Number of studies by period			Total
	1983–1991	1991–2000	2001–2010	
School district	2	0	1	3
Multiple levels	5	6	6	17
Elementary school	24	18	18	60
Middle school	2	5	7	14
High school	10	10	15	35
Other	0	1	0	1
Total	43	40	47	130

an additional seven dissertations that did not show up in the search from authors via a search on Google Scholar. Some had been completed in foreign countries or at North American universities that did not provide dissertations to UMI. The full data set totaled 130 studies conducted at 85 universities and completed between 1983 and April 2010.<sup>2</sup> These include 92 EdD and 38 PhD dissertations.<sup>3</sup>

The data in Table 1 indicate consistent and sustained levels of interest in the study of instructional leadership throughout the past three decades. This is rather remarkable given the fads and fashions that characterized leadership inquiry over this extended period of time. We further observe that interest in this construct has been centered in the United States, with 120 of the studies conducted in American universities. Altogether, however, PIMRS studies were conducted in 11 different countries (not tabled). These include the United States (120), Malaysia (6), Thailand (3), the Philippines (3), Canada (2), Taiwan (2), Cameroon (1), Hong Kong (1), the United Kingdom (1), India (1), and Guam (1).<sup>4</sup> This possibly underreports the actual number of countries since doctoral studies conducted in foreign countries often do not find their way into the UMI Dissertation Abstracts.

### *Analysis of the Studies*

Most of the dissertations were downloaded in PDF format for analysis. In cases where the full dissertation file was not available, data were gleaned from the abstract. A team of researchers worked intermittently over a period of several years to read, extract, and collate relevant data from the 130 studies. An initial set of categories was generated to guide the extraction of information from the

studies (e.g., sample size, roles sampled, research design, statistical methods). The relevant data were compiled into a master table that displayed the characteristics of each of the individual studies. Data from this table were then employed for the subsequent analyses of methodological trends across the studies, within groups of studies (e.g., EdD vs. PhD.), and over time. Because of the need for minor iterative revisions to the composition and definition of categories, the author and a research assistant conducted a final recheck of the relevant information included in the master data table prior to conducting the analyses for this report.

We wish to reemphasize that our approach to analyzing methodological progress in the field was designed to build explicitly on the methods and findings of prior reviews of research. This was reflected in our selection of data categories, which incorporated persisting issues of concern identified in prior methodological reviews (Bridges, 1982; Haller, 1979; Hallinger & Heck, 1996b; Rowan et al., 1983). For example, we followed a “template” employed in Bridges’s (1982) review for the definition of research design and data analysis categories. Similarly, the criteria used to categorize the underlying conceptual models of the studies were adapted from prior reviews conducted by Pitner (1988) and Hallinger and Heck (1996a).

The selection of comparable categories for analysis enabled us to explicitly link the findings of this review to trends reported in reviews conducted at earlier points in time. This approach magnified the power of our lens to illuminate changing patterns of methodological practice over time. More specifically, we were able to extend the duration of our trend analysis for several of the key variables from the 28-year period of the studies encompassed in the PIMRS database to 50 years by linking our findings to those reported in reviews conducted by Bridges (1982), Erickson (1967), and Haller (1979).

Finally, we note that our synthesis of trends in methodology was followed by a second stage of quantitative analysis. This was designed to compare differences in the trends over time and sought to shed light on possible explanations for patterns in the data.

### *Limitations of the Study*

A key limitation of this report lies in its exclusive focus on doctoral dissertations. Reviewers have taken varied approaches toward the identification of studies for inclusion in literature reviews (Wallace & Poulson, 2003). Some choose to review both unpublished doctoral dissertations and studies published in refereed journals (e.g., Bridges, 1982; Hallinger & Heck, 1996a; Robinson et al., 2008). Others focus exclusively on dissertations (Agusto, 2009;

Haller, 1979) or published studies (Hallinger & Leithwood, 1994; Leithwood et al., 2006). Each approach has trade-offs.

Doctoral dissertations do not represent the gold standard in the conduct of empirical research, and findings based solely on doctoral studies may not be generalized to the published literature. An online search using Google Scholar found that only six of the dissertations resulted in journal publications (Hallinger et al., 1994; Hallinger & Murphy, 1983; Leitner, 1994; Nogay & Beebe, 1997; O'Donnell & White, 2005; Sheppard, 1996). This suggests that one might expect a greater degree of variation in quality within this data set than in a sample composed wholly of journal articles (e.g., Robinson et al., 2008) or journal articles plus dissertations (e.g., Bridges, 1982; Erickson, 1967; Hallinger & Heck, 1996a).

Nonetheless, scholars have long observed that the majority of research in educational leadership and management is carried out by doctoral students (Agusto, 2009; Archbald, 2008; Bridges, 1982; Haller, 1979; Hoffer et al., 2005). Moreover, in the case of this study, the large size of this data set of studies based on a common instrument represents a compensating strength. Focusing solely on dissertations also enables a clearer identification of methodological patterns in graduate student research, as demonstrated in Emil Haller's (1979) exemplary analysis of doctoral research methods 30 years ago.

Another limitation of this review concerns the exclusive focus on studies that used the PIMRS instrument. This skewed the sample toward quantitative studies of instructional leadership and introduced a bias toward research that employed a North American conception of instructional leadership. It is noted, for example, that scholars in the United Kingdom and parts of Europe have in recent years tended to use the term *leadership for learning* rather than *instructional leadership* (MacBeath & Cheng, 2008). Although these constructs may be considered first cousins, our conclusions do reflect an American perspective on this role in school leadership. Similarly, since most of the dissertations were conducted in the United States, our conclusions about the conduct of doctoral research in educational leadership and management are also delimited in this respect.

## **How Is Instructional Leadership Studied With the PIMRS?**

This section is organized around several key questions that featured in several prior methodological reviews of the educational leadership and management literature (i.e., Bridges, 1982; Erickson, 1967; Haller, 1979; Hallinger & Heck, 1996b). They include,

- Who do scholars study when using the PIMRS instrument?
- What conceptual models guide PIMRS studies of instructional leadership?
- What research designs and statistical methods are used in the PIMRS studies?
- What research foci predominate in doctoral studies of instructional leadership when using the PIMRS?

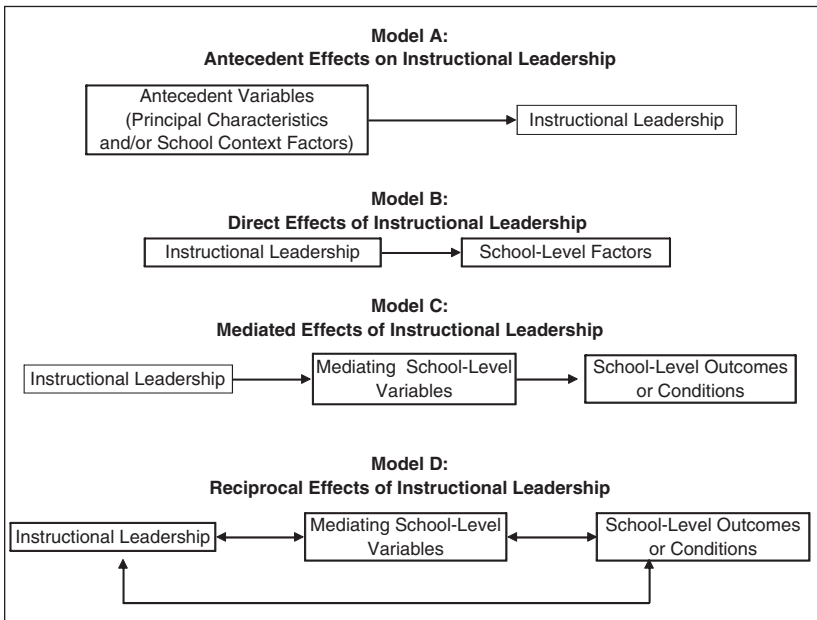
### *Who Is Studied?*

A continuing question of interest concerns the role groups that scholars choose to study in the field of educational leadership and management. Earlier reviews consistently reported a preference among scholars for studying school administrators at the elementary school level (Bossert et al., 1982; Bridges, 1982; Erickson, 1967; Hallinger & Heck, 1996a). Although not achieving the critical mass of a majority of the PIMRS studies, the data in Table 1 do indicate a continuing preference for studying principals at the elementary school level (45% of the total studies). When the data were sorted by both year of the study and level of the school, we found that the level of interest in studying instructional leadership at different institutional levels remained largely changed over the past 30 years. When linked with findings reported by Bridges (1982) and Erickson (1967), this trend extends out over a 50-year period. This finding is especially relevant given a need to better understand how instructional leadership is enacted in secondary schools, which tend to be larger and more complex than elementary schools.

### *Conceptual Models*

For the purposes of this review, we adopted a conceptual framework previously used by Pitner (1988) as well as by Hallinger and Heck (1996a, 1996b) in their reviews of the school leadership literature. This framework classifies studies into four basic models and associated variants: antecedent effects, direct effects, mediated effects, reciprocal effects (see Figure 3). These models describe the study's conceptualization, whether implicit or explicit, of the relationship between instructional leadership and other relevant variables.<sup>5</sup>

Researchers who employed Model A, an *antecedent-effects model*, explored the effects of personal or organizational variables on the exercise of instructional leadership. If a study examined the relationship between demographic (e.g., age, experience, gender) or other personal characteristics (e.g., self-efficacy, years of teaching experience, knowledge of instruction) of the principal and



**Figure 3.** Conceptual frameworks for studying principal leadership  
Adapted from Pitner (1988, pp. 105-108).

perceptions of instructional leadership, it was classified as Model A-1. Studies that explored the relationship of school context factors (e.g., school level, school size, urban/rural, socioeconomic status level) to the principal's instructional leadership were classified A-2.<sup>6</sup>

Role set studies (Merton, 1957) were included in the A-2 category. Role set studies compare the perceptions of the principal's instructional leadership through the eyes of two or more groups of respondents holding different formal roles in the organization (e.g., principals, teacher, supervisors). Studies that incorporated a combination of both personal *and* context variables as independent variables studied in relation to instructional leadership were classified A-3. As displayed in Table 2, researchers used antecedent-effects models in almost 50% of the studies.

*Direct-effects* studies (see Model B in Figure 3) frame instructional leadership as an independent variable and explore its relationship to one or more dependent variables. This is usually a measure of a school-level condition (e.g., school climate, school mission, teacher collective efficacy, teacher satisfaction) or a school outcome (e.g., student achievement, school effectiveness). When



**Table 2.** Summary of Theoretical Models Used to Study Instructional Leadership

Model	Description of conceptual model	Number of studies	Total
A-1	Antecedent effects of principal demographics on instructional leadership	19	65
A-2	Antecedent effects of school context variables on instructional leadership	33	
A-3	Antecedent effects of demographics and context on instructional leadership	13	
B-1	Direct effects of instructional leadership on school variables or outcomes with antecedent variables included in the model	26	46
B-2	Direct effects of instructional leadership on school variables or outcomes without antecedent variables included in the model	20	
C-1	Multivariate effects of instructional leadership on school variables and outcomes with antecedent variables included in the model	9	12
C-2	Multivariate effects of instructional leadership on school variables and outcomes without antecedent variables included in the model	3	
D	Reciprocal effects of instructional leadership on school variables and/or outcomes	0	0
NA	Not applicable; used another design such as case study or profile of principals	9	9

Note that the total is higher than the sample of studies because of numerous studies using more than one model to address multiple research questions. Some studies could not be categorized by this coding scheme.

antecedent variables were also included as controls, the studies were classified as B-1. When antecedent variables were not included in the model, the studies were classified as B-2. A total of 46, or about 36%, of the studies were classified as Model B: 26 as B-1 and 20 as Model B-2.

The next category, Model C, consists of *mediated-effects* studies. In this model, the researcher seeks to understand the avenues or paths through which instructional leadership influences distal dependent variables such as student achievement, teacher satisfaction, or school effectiveness (Bossert et al., 1982;

**Table 3.** Distribution of Model Frequency of Use Over Time

Period	Model A	Model B	Model C	Model D
1983–1991	22	17	2	0
1992–2000	18	13	2	0
2001–2010	24	16	8	0
Raw total	65	46	12	0
% total	50	36	9	0

Hallinger & Heck, 1996a; Pitner, 1988). Model C suggests that the effects of leadership are mediated by other conditions in the school (e.g., school culture or climate, mission, structure, teacher involvement in decision making, team alignment) and has been recommended as a preferred approach to studying leadership effects (Hallinger & Heck, 1996a, 1996b). Relatively few (12) studies employed Model C as a framework for analysis; 9 included antecedents (Model C-1) and 3 did not (Model C-2).

Model D portrays a *reciprocal-effects model* of leadership effects. When employing this approach, the researcher seeks to understand the mutual influence of leadership and related conditions in the school. This is a methodologically challenging approach to the study of leadership effects, and the incidence of published studies that have employed a reciprocal-effects model, either inside or outside of education, is very low (Hallinger & Heck, 1996b; Heck & Hallinger, 2009). Therefore, it was not surprising to find that none of the studies employed Model D.

This analysis suggests that doctoral researchers have continued to rely heavily on relatively weak two-factor conceptual models, a trend that has been consistently critiqued in prior reviews (e.g., Bridges, 1982; Haller, 1979; Hallinger & Heck, 1996b). We wondered, however, given the extended length of the current period under review, if there might have been changes in the pattern of use among these conceptual models over time. Table 3 shows the frequency of use of the conceptual models across three 9-year periods.

We wish to highlight two trends in the data. First, the use of Models A and B was consistently strong throughout the 28-year period of the review, thereby continuing a pattern noted in other reviews going back to the 1960s (Bridges, 1982; Erickson, 1967; Haller, 1979). Unfortunately, doctoral researchers employing Model A have tended to do so in a largely atheoretical fashion. For example, with few exceptions (e.g., Cunningham, 2004), Model A-1 studies that examined the relationship between principal gender and instructional leadership did so without testing a theoretical explanation for why gender differences would affect leadership. Therefore, after three decades and 35 PIMRS

studies of principal gender, we know that female principals consistently receive higher ratings on the PIMRS than males but are no closer to a theoretically grounded explanation for why this should be the case.

Second, mediated-effects frameworks (Model C) have been recommended by reviewers for more than 30 years (Bossert et al., 1982; Bridges, 1982; Hallinger & Heck, 1996b; Heck & Hallinger, 1999, 2005; Pitner, 1988). Although we found increased use of Model C frameworks during the final period of the review, the relatively small total number of Model C studies does not qualify this as evidence of major progress. Since leadership is enacted in complex organizational settings, we suggest that researchers employ models that are able to portray these multivariate relationships. Model A studies have focused on factors that influence the exercise of leadership but have too often failed to link that relationship to the impact of leadership. Model B studies have focused on leadership effects, but often without employing sufficiently comprehensive perspectives. Thus, we join other reviewers (e.g., Bossert et al., 1982; Bridges, 1982; Haller, 1979; Hallinger & Heck, 1996a; Murphy et al., 1983) in recommending that researchers employ frameworks that contextualize the enactment of leadership. Studies that incorporate personal antecedent variables should explore their effects not only on instructional leadership but also on school-level conditions and/or school outcomes (e.g., Models C-1, C-2).

### *Research Designs and Statistical Tests*

*Research design.* In 1982 Bridges examined the use of research methods in both doctoral dissertations and published research in the field's most selective research journals and concluded,

Although researchers apparently show a greater interest in outcomes than was the case in the earlier period, they continue their excessive reliance on survey designs, questionnaires of dubious reliability and validity, and relatively simplistic types of statistical analysis. Moreover these researchers persist in treating research problems in an ad hoc rather than a programmatic fashion. . . . Likewise the research seemed to have little or no practical utility. (pp. 24-25)

He went on to report that the cross-sectional research design was used in more than 90% of the 322 studies that he reviewed. This supported a trend found in doctoral studies reviewed by Haller (1979). Similarly, we found the most commonly used research design was a cross-sectional post hoc survey.

Although the PIMRS was used to generate data in several case studies, there were no instances of longitudinal, experimental, or quasi-experimental studies in the data set.

*Data analysis.* Although the conceptual models described earlier lend themselves to a variety of different statistical analyses, past reviewers have noted a preference among doctoral students for using a limited set of relatively weak data analytic techniques. For example, Haller (1979) claimed, "Not only are questionnaires the major source of data, these data are typically generated within a cross-sectional research design and analyzed using simple descriptive or bivariate procedures" (p. 48).

Bridges (1982, p. 16) conducted a more fine-grained analysis of data analysis techniques using a scheme composed of four levels that describe statistical approaches in terms of their analytical power.

1. *Description*, which involves the use of numbers to represent central tendencies and/or variability of scores
2. *Single causal factor–correlational*, which entails the examination of the relationship or association between two variables, one of which presumably covaries with or influences the other
3. *Single causal factor–correlational with controls*, which entails the examination of the relationship between two variables while controlling for the influence of one or more other variables
4. *Multiple factor*, which involves probing the differential effects of multiple sources of influence on a particular variable

In light of advances in statistical methods since the time of the Bridges review, we added a fifth level to our statistical typology that we termed *advanced modeling*. This level was composed of tests that are capable of exploring relationships among multiple independent and dependent variables in a manner that allows for the examination of moderating and/or mediating effects (e.g., through the use of statistical methods such as confirmatory factor analysis, hierarchical linear modeling, and structural equation modeling).

Using this scheme, Bridges (1982) had earlier concluded,

The bulk of the research on school administrators uses either description (60%) or a single factor/correlational without control approach (25%) in data analysis. Those approaches that enable the investigator to render rival explanations implausible are used in less than 16% of the studies. (p. 16)

**Table 4.** Breakdown of Studies Over Time by Statistical Approach

Statistical approach period	Descriptive	Single causal factor–correlational	Single causal factor–correlational with controls	Multiple factor	Advanced modeling
1983–1991	5	26	3	9	0
1992–2000	5	21	7	6	0
2001–2010	3	23	5	16	1
Raw total	13	70	15	31	1
% of total	10	54	12	24	0

Note that the total number of studies listed here does not match the total number of studies included in the report because some studies used more than one method.

These findings mirrored those of Haller (1979), who separately reported that doctoral students in educational administration were “much less likely to apply multivariate analyses to their questionnaire data . . . than were students from other disciplines” (p. 48). We note that the importance of this issue is based on the centrality of shedding empirical light on causal relationships between instructional leadership and learning.

The data in Table 4 suggest some improvements in this domain both in the overall pattern and in the trend of statistical use over time. For example, the earlier dominance of descriptive statistics has declined dramatically. Only about 10% of the PIMRS studies relied solely on descriptive statistics and 36% used data analytic techniques capable of ruling out plausible rival explanations. Moreover, Table 4 shows that in the most recent period (2001–2010), almost 50% of the studies used statistical techniques from Levels 3 and 4, compared to only 28% during the initial period (1983–1991). In particular, the percentage of studies using multiple factor tests rose from 20% in the first 9-year period to 40% in the most recent one.

To place these findings in perspective, we recall that the study was limited to doctoral dissertations. Moreover, two thirds of our sample was composed of EdD dissertations. One would not necessarily expect practitioners studying in EdD programs to employ state-of-the-art research tools or push the outside of the conceptual envelope. EdD programs are, in theory, intended to be practice oriented (Agusto, 2009; Archbald, 2008; Murphy & Vriesenga, 2006). With this in mind, one might expect to find a higher percentage of PhD dissertations using Model C (mediated effects) frameworks in concert with Level 3, 4, and 5 statistical methods.

**Table 5.** Comparison of EdD and PhD Dissertations by Statistical Level and Conceptual Models

Level	Statistics	EdD (%)	PhD (%)
1	Descriptive	9	9
2	Single factor without control	56	46
3	Single factor with control	13	11
4	Multiple Factor	23	31
5	Advanced Modeling	0	3
Model	Conceptualization	EdD (%)	PhD (%)
A	Antecedent effects	47	49
B	Direct effects	37	34
C	Mediated effects	9	11

We decided to examine whether the predominance of EdD dissertations in the sample could have skewed the results toward the use of less powerful conceptual models and statistical methods. Table 5 displays the breakdown of data by type of degree program (i.e., EdD or PhD), type of conceptual model (i.e., Models A–C), and level of statistical method (i.e., Levels 1–5). Although PhD dissertations tended to use Level 4 statistical methods more often than EdD dissertations (PhD = 32.4% vs. EdD = 22.7%), an analysis using the Mantel–Haenszel test (nominal by ordinal chi-square test) showed no significant difference ( $p = .338$ ). A second run of the same test breaking the EdD and PhD studies into just two groups (Levels 1–3 vs. Level 4) also showed no significant difference ( $p = .354$ ).

Overall, the results indicate that there was not a significant correlation between the degree program and conceptual model used to frame the research nor between the degree program and the level of statistical method. This rather surprisingly suggests that the doctoral studies can be treated as a single group. That is, the EdD and PhD dissertations were differentiated neither by their use of conceptual models nor by statistical methods.

Although the type of degree program did not provide leverage in explaining the pattern of results, it also seemed plausible that the approaches to research adopted by the doctoral students could have been related to the type of university at which they were studying. With this question in mind, we categorized the universities according to a coding scheme proposed by the Carnegie Foundation for the Advancement of Teaching (2010). The Carnegie scheme classifies universities into three categories based on the level of research activity of the university's faculty:

- Type 1: RU/VH: Research universities (very high research activity)
- Type 2: RU/H: Research universities (high research activity)
- Type 3: DRU: Doctoral/research universities

One might expect that students studying at Type 1 universities would be exposed to more intensive research training as well as more substantial funded research projects and activities. We coded the dissertations according to the Carnegie Foundation's list and found that 58 of the studies had been completed at Type 1 universities, 34 at Type 2 universities, and 36 at Type 3 universities. We then used the Mantel–Haenszel test to examine the conceptual models and statistical methods employed by the researchers in terms of the type of university they had attended.

We found no statistically significant differences for either set of variables. Finally, we note that there was also no significant interaction effect between degree program *and* type of university with either conceptual model or level of statistical method. Thus, it was no more likely that students studying for a PhD at a Type 1 research intensive university would conduct studies that employed more comprehensive models and powerful statistical approaches than EdD students at Type 2 or Type 3 universities.

In sum, although there were some demonstrable improvements in patterns of use of statistical methods, this mostly entailed a reduced reliance on the use of descriptive statistics and an increased use of bivariate tests without controls. Improvements did not extend to the widespread use of more powerful statistical methods able to shed light on important relationships concerned with school context, personal characteristics of leaders, instructional leadership, and student learning. Finally, there was little “within-group variation” across the studies when these patterns were further analyzed. EdD and PhD dissertations seemed remarkably similar in their methodological characteristics, and it did not matter whether they had been conducted at a research-intensive university or not.

### *Which Research Foci Predominate in Studies of Instructional Leadership?*

The next issue that we addressed concerned the focal questions and problems addressed in the research studies. We first grouped the studies in terms of antecedents, role set, and leadership effects to identify the variability and trends in research issues addressed by the studies. Then two approaches to citation analysis were employed as a means of testing the extent to which this body of empirical research conducted over a 30-year period contributed

to knowledge accumulation in this domain of educational leadership and management.

*Studies of antecedents effects on instructional leadership.* These studies followed Model A as discussed earlier. As noted by previous reviewers, the most frequent approach has been to study how different personal characteristics of the principals influence their instructional leadership. The most popular variables for study have been principal gender (25%), years of administrative experience (20%), years of teaching experience prior to becoming a principal (15%), or other measures designed to act as proxies for knowledge of instruction (5%). Other personal variables studied with some frequency included the administrator preparation for the principalship, age, ethnicity, and self-efficacy.

A variety of school context variables have also been studied in terms of their effects on the principal's instructional leadership. These include school level of the principal (7%), school size (13%), and private schools (3%). Other context factors studied included the effects of a school-based management context, different district contexts (e.g., urban and rural), and district size.

These results offer an interesting elaboration on the earlier discussion of Model A studies by indicating the specific antecedents of instructional leadership that were of interest to scholars. The concentration of studies around a relatively limited set of personal and contextual independent variables is a positive finding; the selection of topics around a concentration of antecedent variables contrasts with Bridges's observation that topics appeared be "intellectual random events." At the same time, however, our assessment of the models used to study these topics leads us to reinforce Bridges's (1982) assertion made 30 years ago:

Studies that merely describe the traits or attitudes should be discontinued unless they shed light on a problem of practical, social or theoretical significance. . . . [D]emographic traits such as sex also warrant investigation if they are treated in a theoretically rich fashion. . . . This research should also employ multivariate approaches to data analysis, approaches that allow the investigator to rule out plausible rival explanations and to estimate the relative influence of the traits or sentiments being studied. (p. 26)

*Role set studies.* We classified this type of study as Model A-2 in our earlier analysis of conceptual models. Studies that compare the perceptions of different role groups (i.e., teachers, principals, supervisors) toward the instructional leadership behavior of the principal have proven to be a popular approach among



this set of dissertations. Fully 15% of the studies included this type of research objective and related analyses. In some studies, role group comparison was an explicit objective of the study, whereas in others it was included as a means to understanding a larger issue (e.g., confirmation of the instrument's validity).

As noted several times, it is not an objective in this review to discuss specific findings of the studies. Nonetheless, we would be remiss if we did not comment further on this particular specie of study since it lies at the intersection of research focus and methodology. As reported by the scale's author (Hallinger & Murphy, 1985), the original validation study included role group comparison among teachers, principals, and supervisors as a step in the validation process. It was essential to determine if and to what extent perceptions varied across the role groups and to link those perceptions of behavior to alternative measures of those same behaviors (Hallinger & Murphy, 1985).

Subsequently, a number of studies have confirmed the original study's finding of statistically significant differences across role groups in their perceptions of the principal's instructional leadership (e.g., Brown, 1991; Haack, 1991; Haasl, 1989; Henderson, 2007; Krug, 1986; O'Day, 1984; Smith, 2007). It is interesting to note that this result was also found in studies conducted in non-Western cultures such as Taiwan, Thailand, and the Philippines. With few exceptions, principal self-reports yield higher ratings than reports from teachers. In each instance where additional validation procedures have been carried out (e.g., Hallinger, 1983; Hallinger et al., 1994), the teacher results have been found to most closely match independent sources of evidence. These findings suggest that teacher perceptions continue to constitute the preferred source of data on the principal's instructional leadership for both research and evaluation purposes. Thus, we suggest that the analysis of role set perceptions does not, by itself, constitute a suitable focus for further research unless there is a larger question that the researcher is seeking to address.

*Leadership effects studies.* As suggested earlier, leadership effects studies could have followed either Model B, which posited direct effects of instructional leadership on some facet of the school, or Model C, in which instructional leadership was linked to a distal dependent variable (or variables) through a mediating process. Topics studied with moderate to high frequency included the following: teacher stress, morale, collective efficacy, effectiveness, and satisfaction (8%), school climate (8%), student achievement (18%), principal and school effectiveness (17%).

These data suggest a moderate level of interest in studying the relationship among instructional leadership and school effectiveness and student achievement. The studies that examined principal and school effectiveness actually represent a quite diverse group. As noted, many used a design in which principals

**Table 6.** Classification of Studies of Instructional Leadership and Student Achievement by Conceptual Model and Level of Statistical Method

Model	Level 2	Level 3	Level 4	Level 5
B-1	3	1	4	0
B-2	2	0	3	0
C-1	0	0	6	1
C-2	0	0	2	0

were rated on their instructional leadership in a relatively small sample of schools of contrasting performance. The principal profiles were then compared and sometimes tested for differences. Although this research focus reflects an interest in understanding how instructional leadership contributes to learning in different school contexts, this is a weak research design. In the absence of a substantial sample size, this research design offers only limited leverage on understanding the relationship between leadership and learning.

Given its relevance to educational policy and focus as a topic in high-profile research reviews, we examined the trend in studies that examined the relationship of instructional leadership with student achievement more closely. Our analysis, based partially on data shown in Table 6, suggests the following trends. First, although a relatively small percentage of the total studies focused on the relationship between instructional leadership and student learning, there is evidence of increasing interest in recent years. Although 6 studies investigating this issue were conducted between 1983 and 1990, 15 were completed between 1998 and 2010.

Second, we wish to note the trend in research designs employed in the study of this issue. Among the 21 studies that examined this relationship explicitly, 13 used Model B to guide the analysis. This is problematic since Model B offers an overly simplistic framework for understanding the means by which school leadership affects learning (Hallinger & Heck, 1996b). Similarly, the data in Table 6 indicate that Model B studies tended to use statistical tests that lack the capacity to shed light on causal relationships among the relevant variables. In contrast, all of the Model C studies used multiple factor or advanced modeling techniques to explore relationships.

Finally, it is interesting to note that there was no clear trend in the application of more powerful models and tests to this issue over time. Thus, for example, during the period 1998–2010, nine of these studies were guided by Model B frameworks and only six by Model C (not tabled). Thus, we cannot conclude that doctoral researchers are matching their increased interest in this issue during recent years with more sophisticated approaches to its study.

We remind the reader that an implicit premise behind the development of the PIMRS was for use as a tool to examine the linkage between leadership and learning. About 35% of the studies engaged this empirical challenge in some fashion. However, when they did, the models and methods employed were generally inadequate to the task. This supports an impression of doctoral researchers “spinning their intellectual wheels” without gaining significant traction on understanding the relationship between instructional leadership and learning.

*Interrelatedness and accumulation of knowledge.* Another way of shedding light on the research foci embedded in this set of studies concerns the degree to which they contributed to knowledge accumulation (Bossert et al., 1982; Bridges, 1982; Haller, 1979; Hallinger & Heck, 1996a; Heck & Hallinger, 2005). Knowledge accumulation represents as an important goal of empirical research, for advancing both theory-oriented and practical knowledge in an applied field. The concentration of PIMRS studies on a relatively small number of research foci (e.g., gender, teaching and administrative experience, school size, school effectiveness, student learning) suggested abundant potential for knowledge accumulation in this body of literature on instructional leadership. As noted, however, our analysis of conceptual models and research methods leads to some degree of skepticism on whether that potential is being realized.

With this issue in mind, we conducted citation analyses designed to illuminate the extent to which the studies had contributed to knowledge accumulation on this timely construct. Two features of the data set rendered it particularly useful for this purpose. First, its strict delimitation to *doctoral studies focused on instructional leadership* lends clarity to the interpretation of the results. Second, the inclusion of studies conducted over an extended period (i.e., almost 30 years) means that there would be adequate time for the research findings to disseminate and accumulate.

Two means of assessing knowledge accumulation were used: (a) citation frequency of the dissertations in the general literature and (b) cross-citation of the dissertations by other authors within this study’s sample.<sup>7</sup> In Phase 1 of this analysis, the Google Scholar search tool was employed for assessing the citation impact of these studies in the literature on educational leadership and management. The author’s name and keywords taken from the title of the study were entered as search terms in Google Scholar’s advanced search engine. This generated a citation frequency number that was entered into the Excel table for subsequent analysis. We note that the results from Google Scholar cast a quite broad net in terms of capturing studies as compared with other indices (e.g., Social Sciences Citation Index). Thus, the results can be interpreted as a “generous” interpretation of impact.

The results of this citation analysis demonstrated that the total number of citations of the dissertations was 374, with a mean of 3 per study, a standard deviation of 14, and a range from 0 to 155. Of the 126 studies, 11 accounted for more than 75% of the citation impact; citations related to the original PIMRS dissertation (Hallinger, 1983; Hallinger & Murphy, 1985), by itself, accounted for 155 of the 374 citations. At first glance, 374 citations may suggest a reasonable degree of impact. However, when one considers the large number of studies, the extended period covered by the review, and the small percentage of studies cited, it further reinforces the impression of unfulfilled potential.

In Phase 2 of the citation study, we analyzed the extent to which authors built on the work of previously completed PIMRS dissertations. As noted, the studies clustered around a relatively small number of research foci. This afforded the researchers a prime opportunity to build on the work of prior PIMRS users. One would imagine, for example, that a doctoral student investigating the relationship of gender and instructional leadership in 2008 would build explicitly on the findings from the more than 30 PIMRS users who had studied this issue since 1983.

For this analysis, we selected a subsample consisting of the 34 PIMRS dissertations completed since 2004, reasoning that these authors would have had access to the largest number of completed studies at the time of their research. We obtained the full copy of 29 of the 34 studies. We examined the reference list in each of the 29 studies and found that the total number of cross-citations of other PIMRS dissertations was 32 references. This is a mean of just over one cross-reference to another PIMRS dissertation per study. Moreover, this exceedingly low cross-dissertation citation rate was skewed by one dissertation that accounted for 14 of the 29 citations. This pattern of results indicates a remarkable absence of interconnectedness among a group of studies in which the authors were often investigating similar foci (e.g., the impact of gender or school size on instructional leadership), within the same subdomain (i.e., instructional leadership), using the same instrument for data collection (i.e., the PIMRS).

These results provide greater clarity to our interpretation of the data that were presented on models, methods, and foci as they pertain to knowledge accumulation. The citation analysis suggests that this body of studies has not yielded an impact on knowledge accumulation, even among those who are toiling in the same field of inquiry. This finding is startling, for both the magnitude (or lack thereof) of the result and the clarity of interpretation. That said, we should note that these results closely mirror those reported by Bridges (1982), even though his study included both dissertations and published studies.<sup>8</sup> Indeed, Bridges's (1982) conclusion continues to ring true almost 30 years

later: “[T]hese results point to a lack of interconnectedness among the research studies on school administrators. This lack of systematic knowledge-building seems to be a pervasive characteristic of research in the field of educational administration” (p. 24).

## Discussion

This review was undertaken with a primary purpose of contributing to our understanding of methodological progress in studying instructional leadership. The report focused on the analysis of a data set of doctoral dissertation studies, all of which used the PIMRS instrument as a tool for data collection and were completed between 1983 and 2010. Given the study’s focus on this particular database of doctoral studies, we proposed a second objective that focused on understanding the nature of methodologies used by doctoral students in educational leadership and management.

Interest in the role that principals play in fostering learning has held the attention of scholars in educational leadership and management for many years. More than four decades ago, Bridges (1967) asserted,

On the one hand, the principal has been exhorted to exert instructional leadership, while on the other hand, he has been told flatly that such a role is beyond his or any other human being’s capacity. The problem with these disputations is that the exponents of a given position have neither defined sharply what is signified by the concept of instructional leadership nor made their assumptions explicit. (p. 136)

Research conducted during the 1970s subsequently identified instructional leadership as an approach that characterized the leadership practice of a relatively small number of “outlier” principals (Bossert et al., 1982; Edmonds, 1979). This led to a surge in interest in the instructional leadership role of principals. Even so, influential scholars continued to question whether instructional leadership could ever become a sustainable model in the broader practice of school leadership (Barth, 1986; Cuban, 1984). Indeed, just a decade after its adoption by policy makers, instructional leadership was pushed off center stage by growing interest in teacher leadership, and subsequently by transformational leadership and distributed leadership.

At the same time, however, even as fads and fashions in leadership have waxed and waned, scholarly interest in instructional leadership has remained surprisingly consistent and strong. Indeed, the data reviewed in this report suggest that instructional leadership has become firmly entrenched in the firmament

of professional practice and gained currency as a focal construct in the eyes of scholars. One could argue that instructional leadership is even more relevant in 2010 than 30 years ago.

Evidence offered in this review indicates that the PIMRS can play a potentially useful role in empirical research on instructional leadership. The PIMRS instrument appears to provide reliable and valid data on instructional leadership when the assessments come from teachers. That said, the instrument has been used for almost 30 years in a policy context that has altered quite dramatically as well as in schools across a variety of different institutional and cultural contexts. Thus, it would seem advisable for future researchers to continue to conduct analyses of reliability as a routine test in current studies rather than relying solely on the findings from prior research. Moreover, this point further implies that researchers should continue to reexamine the validity of the PIMRS construct measurement in a changing global policy context.

With respect to desirable foci for research, we suggest that scholars who use the PIMRS more squarely accept the challenge of investigating the linkages between instructional leadership and school-level variables that mediate effects on teacher effectiveness and student learning. Numerous scholars have noted the need to shed light on the “black box” that contains the processes through which leadership contributes to the improvement capacity of schools to create a positive impact on student learning (Hallinger & Heck, 1996a; Heck & Hallinger, 2005; Leithwood et al., 2010). We noted increased interest in studying this issue over the past decade and wish to encourage it further using comprehensive conceptual models and multivariate statistics as well as through mixed-methods studies.

Similarly, studies of how responsibilities for instructional leadership are shared or distributed between the principal and other staff seem timely and important, especially at the secondary school level. In our view, studies of the antecedents of instructional leadership, whether personal or contextual, are useful to the extent that they are linked to the impact of leadership. When antecedents are studied in relation to instructional leadership, more substantial theorizing and methods that employ controls for other relevant variables are required.

As suggested above, we believe that impact should be studied in terms of student learning. However, worthy research may also target other intermediate and distal variables such as teacher collective efficacy, satisfaction and commitment, school health, organizational learning, teacher change, and student engagement. Useful models for conducting empirical research on the relationship between school leadership and these variables using comprehensive models and robust statistical methods exist in the literature (e.g., see Hallinger, Bickman, & Davis, 1996; Heck & Hallinger, 2009; Heck, Larson,

& Marcoulides, 199; Leitner, 1994; Leithwood & Jantzi, 2000; Marks & Printy, 2003). Doctoral students are encouraged to draw on these models and methods rather than simply citing findings from these studies.

The second goal of this study was to understand patterns in the conduct of doctoral research within the context of this 28-year database of doctoral studies. Although discussion of the proper models of research for EdD and the PhD programs goes beyond the purview of this report, the findings do provide an empirical basis for informing such debates. More specifically, we wish to highlight the finding that these doctoral studies made few substantial contributions to knowledge accumulation. Our citation analysis left no doubt on this criterion and clearly mirrored similar findings from prior reviews (Bridges, 1982; Erickson, 1967; Haller, 1979).

It was further noted that we were unable to distinguish the methodologies employed by doctoral scholars based on the type of degree program (i.e., EdD or PhD) or the level of research activity of the university. Citation analysis reconfirmed this picture of “no differences” between the output of EdD and PhD programs. If our results had indicated that both types of doctoral degree were generating productive knowledge, the field could perhaps have lived with this ambiguity of purpose, but they did not. Indeed, the finding that the PhD dissertations suffered from the same limitations as the EdD studies raises critical questions about the nature of research training in PhD programs. With this finding in mind, this review concludes that the PhD in educational leadership and management is just as ill as the EdD and the field must take steps to revitalize both.

### **Acknowledgments**

The author would like to acknowledge the useful feedback offered on this article by Edwin Bridges, whose own review of the literature in 1982 offered important baseline data against which the findings from this study could be compared, and to Dr. Lee Moosung, who assisted in data analysis.

### **Declaration of Conflicting Interests**

The author declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

### **Financial Disclosure/Funding**

The author received the following financial support for the research and/or authorship of this article:

This study was supported in part by funding support from the Research Grant Council of Hong Kong through the General Research Fund Project 840509.

## Notes

1. With respect to research interest in the construct, a Google Scholar search in March 2010 found that the most frequently cited articles in *Educational Administration Quarterly* since its inception were the Hallinger (1996a) and Bossert, Dwyer, Rowan, and Lee (1982) reviews of research, both of which focused on instructional leadership and learning outcomes in schools.
2. Because of space limitations, relatively few of the dissertations are included as citations in the following text descriptions of the findings. A full set of the dissertations can, however, be downloaded from [www.philiphallinger.com/pimrs.html](http://www.philiphallinger.com/pimrs.html).
3. The author notes that the total of 130 graduate dissertations studies included 1 EdS project. Since it was indistinguishable from the doctoral studies in most scope and approach, it was included in the sample as an EdD study. Six master's degree studies were also identified, but these were not included in the analyses for this report. The master's degree studies used Models A (1) and B (2), with two not applicable. In terms of statistical methods, 2 studies used Level 1 and 4 used Level 2 methods.
4. This count of countries includes 11 master's theses that were not included in the analyses for this report.
5. Nine studies were classified as not applicable in cases where the framework could not be applied. Most of the studies classified as not applicable were either case studies or studies that employed a single variable (i.e., instructional leadership). For example, some studies simply generated an instructional leadership profile for a group of principals without conducting an analysis in relation to other variables.
6. It should be noted that this type of study is more properly described as a moderated effects design. However, for the purposes of this report, the author simply wished to denote the fact that the researcher was examining the effects of another variable on the principal's instructional leadership.
7. Note that for the purposes of this analysis, publications based on the dissertations were counted as well.
8. Although this review focused solely on Principal Instructional Management Rating Scale studies of instructional leadership, Bridges's (1982) review examined studies across a broad range of topics in educational administration. Thus, the interpretation of findings from his citation analysis was clouded somewhat by the selection criteria. For example, one would not necessarily expect studies in school finance to be cited in studies of principal work activities or school climate. In contrast, the citation analysis in this review had a built-in "control" since all of the studies were conducted in the same subdomain of the field.



## References

- Agusto, J. (2009). *Case studies of EdD and PhD dissertations in educational administration* (Unpublished doctoral dissertation). University of Kansas, Lawrence.
- Archbald, D. (2008). Research versus problem solving for the educational doctoral thesis: Implications for form and function. *Educational Administration Quarterly*, 44(5), 704-739.
- Bamburg, J., & Andrews, R. (1990). School goals, principals and achievement. *School Effectiveness and School Improvement*, 2(3), 175-191.
- Barth, R. (1986). On sheep and goats and school reform. *Phi Delta Kappan*, 68, 293-296.
- Bell, L., Bolam, R., & Cubillo, L. (2003). *A systematic review of the impact of school headteachers and principals on student outcomes*. London, UK: EPPI-Centre, Social Science Research Unit, Institute of Education.
- Bossert, S., Dwyer, D., Rowan, B., & Lee, G. (1982). The instructional management role of the principal. *Educational Administration Quarterly*, 18(3), 34-64.
- Bridges, E. (1967). Instructional leadership: A concept re-examined. *Journal of Educational Administration*, 5, 136-147.
- Bridges, E. (1982). Research on the school administrator: The state-of-the-art, 1967-1980. *Educational Administration Quarterly*, 18(3), 12-33.
- Brown, J. (1991). *Leader behavior and school effectiveness* (Unpublished doctoral dissertation). University of Texas, Austin.
- Carnegie Foundation for the Advancement of Teaching. (2010). *Carnegie classifications*. Retrieved from <http://classifications.carnegiefoundation.org/descriptions/basic.php>
- Cuban, L. (1984). Transforming the frog into a prince: Effective schools research, policy, and practice at the district level. *Harvard Educational Review*, 54(2), 128-151.
- Cunningham, J. (2004). *The effect of gender-role identity of female principals on in Texas on teacher perceptions of instructional leadership behaviors* (Unpublished doctoral dissertation). Texas A&M University-Corpus Christi.
- Dixon-Woods, M., Agarwal, S., Jones, D., Young, B., & Sutton, A. (2005). Synthesising qualitative and quantitative evidence: A review of possible methods. *Journal of Health Services Research & Policy*, 10(1), 45-53.
- Dunn, A. (2010). *A quantitative study of the perceptions of school leadership preparation in the state of Georgia* (Unpublished doctoral dissertation). Walden University, Minneapolis, MN.
- Ebel, R. (1951). Estimation of the reliability of ratings. *Psychometrika*, 16, 407-424.
- Edmonds, R. (1979). Effective schools for the urban poor. *Educational Leadership*, 37, 15-24.

- Erickson, D. (1967). The school administrator. *Review of Educational Research*, 37, 417-432.
- Fulton, T. (2009). *High school principal instructional leadership behavior in high and low need and high and low achievement schools* (Unpublished doctoral dissertation). Dowling College, Oakdale, NY.
- Gewertz, C. (2003, January 8). N.Y.C. chancellor aims to bolster instructional leadership. *Education Week*, 22(16), 7, 12.
- Gross, N., & Herriot, R. (1965). *Staff leadership in schools*. New York, NY: John Wiley.
- Haack, M. (1991). *An investigation of the instructional management behaviors of principals in mid-sized public high schools in Iowa* (Doctoral dissertation). Retrieved from ERIC database. (ED9217238)
- Haasl, W. (1989). *Multiple perspectives of role definition of small school principals and their influence on effective instructional management* (Doctoral dissertation). Retrieved from ERIC database. (ED9010261)
- Haller, E. (1979). Questionnaires and the dissertation in educational administration. *Educational Administration Quarterly*, 15(1), 47-66.
- Hallinger, P. (2008, March). *A review of PIMRS studies of principal instructional leadership: Assessment of progress over 25 years*. Paper prepared for the annual meeting of the American Educational Research Association, New York, NY.
- Hallinger, P. (1983). *Assessing the instructional management behavior of principals* (Doctoral dissertation). Retrieved from ERIC database. (ED8320806)
- Hallinger, P. (2003). Leading educational change: Reflections on the practice of instructional and transformational leadership. *Cambridge Journal of Education*, 33, 329-351.
- Hallinger, P. (1982). *Principal Instructional Management Rating Scale*. Sarasota, FL: Leading Development Associates.
- Hallinger, P. (1990). *Principal Instructional Management Rating Scale*. Sarasota, FL: Leading Development Associates.
- Hallinger, P., & Bridges, E. (2007). *Problem-based management education: Developing "managers for action."* Dordrecht, Netherlands: Springer.
- Hallinger, P., & Heck, R. H. (1996a). Reassessing the principal's role in school effectiveness: A review of empirical research, 1980-1995. *Educational Administration Quarterly*, 32(1), 5-44.
- Hallinger, P., & Heck, R. H. (1996b). The principal's role in school effectiveness: An assessment of methodological progress, 1980-1995. In K. Leithwood, J. Chapman, P. Corson, P. Hallinger, & A. Hart. (Eds.), *International handbook of research in educational leadership and administration* (pp. 723-784). New York, NY: Kluwer.

- Hallinger, P., & Leithwood, K. (1994). Exploring the impact of principal leadership. *School Effectiveness and School Improvement*, 5(3), 206-218.
- Hallinger, P., & Murphy, J. (1985). Assessing the instructional leadership behavior of principals. *Elementary School Journal*, 86, 217-248.
- Hallinger, P., Bickman, L., & Davis, K. (1996). School context, principal leadership and student achievement. *Elementary School Journal*, 96(5), 498-518.
- Hallinger, P., Taraseina, P., & Miller, J. (1994). Assessing the instructional leadership of secondary school principals in Thailand. *School Effectiveness and School Improvement*, 5(4), 321-348.
- Harris, E. (2002). *The relationship between principals' instructional leadership skills and the academic achievement of high-poverty students* (Unpublished doctoral dissertation). University of South Carolina, Columbia.
- Heck, R. H., & Hallinger, P. (2009). Assessing the contribution of distributed leadership to school improvement and growth in math achievement. *American Educational Research Journal*, 46, 626-658.
- Heck, R. H., & Hallinger, P. (1999). Conceptual models, methodology, and methods for studying school leadership. In J. Murphy & K. Seashore-Louis (Eds.), *The 2nd handbook of research in educational administration* (2nd ed., pp. 141-162). San Francisco, CA: McCutchan.
- Heck, R. H., & Hallinger, P. (2005). The study of educational leadership and management: Where does the field stand today? *Educational Management, Administration & Leadership*, 33, 229-244.
- Heck, R. H., Larson, T., & Marcoulides, G. (1990). Instructional leadership and student achievement: Validation of a causal model. *Educational Administration Quarterly*, 26(2), 94-125.
- Henderson, N. (2007). *Teacher and principal perceptions of effective instructional leadership: An exploration of guiding practice and personal beliefs* (Unpublished doctoral dissertation). University of Texas, San Antonio.
- Hoffer, T. B., Welch, V., Williams, K., Hess, M., Webber, K., & Lisek, B. (2005). *Doctorate recipients from United States universities: Summary report 2004*. Chicago, IL: National Opinion Research Center.
- Howe, W. (1995). *Instructional leadership in catholic elementary schools: An analysis of personal, organizational, and environmental correlates* (Doctoral dissertation). Retrieved from ERIC database. (ED9611976)
- Hunter Foundation. (2005). *New drive to improve school leadership in Scotland*. Retrieved from [http://www.thehunterfoundation.co.uk/projects/?project\\_id=5](http://www.thehunterfoundation.co.uk/projects/?project_id=5)
- Jones, P. (1987). *The relationship between principal behavior and student achievement in Canadian secondary schools* (Unpublished doctoral dissertation). Stanford University, Palo Alto, CA.

- Krug, F. (1986). *The relationship between the instructional management behavior of elementary school principals and student achievement* (Doctoral dissertation). Retrieved from ERIC database. (ED8722942)
- Latham, G., & Wexley, K. (1981). *Increasing productivity through performance appraisal*. Menlo Park, CA: Addison-Wesley.
- Leithwood, K., Anderson, S., Mascall, B., & Strauss, T. (2010). School leaders' influences on student learning: The four paths. In T. Bush, L. Bell, & D. Middlewood (Eds.), *The principles of educational leadership and management* (pp. 13-30). Thousand Oaks, CA: Sage.
- Leithwood, K., Begley, P., & Cousins, B. (1990). The nature, causes and consequences of principals' practices: A agenda for future research. *Journal of Educational Administration*, 28(4), 5-31.
- Leithwood, K., Day, C., Sammons, P., Harris, A., & Hopkins, D. (2006). *Seven strong claims about successful school leadership*. Nottingham, UK: National College for School Leadership.
- Leithwood, K., & Jantzi, D. (2000). The effects of transformational leadership on organizational conditions and student engagement with the school. *Journal of Educational Administration*, 38(2), 112-129.
- Leithwood, K., & Montgomery, D. (1982). The role of the elementary principal in program improvement. *Review of Educational Research*, 52, 309-339.
- Leitner, D. (1994). Do principals affect student outcomes: An organizational perspective. *School Effectiveness and School Improvement*, 5(3), 219-238.
- Lipham, J. (1964). Organizational character of education: Administrative Behavior. *Review of Educational Research*, 34, 435-454.
- MacBeath, J., & Cheng, Y. C. (2008). *Leadership for learning: International perspectives*. Rotterdam, Netherlands: Sense.
- Marks, H., & Printy, S. (2003). Principal leadership and school performance: An integration of transformation and instructional leadership. *Educational Administration Quarterly*, 39(3), 370-397.
- Mercer, S. (2004). *The relationship of teachers' perceptions of principals' instructional leadership skills and school performance in four high-poverty South Carolina middle schools* (Unpublished doctoral dissertation). University of South Carolina, Columbia.
- Merton, R. (1957). The role set: Problems in sociological theory. *British Journal of Sociology*, 8, 106-120.
- Moore, Q. (2003). *Teachers' perceptions of principals' leadership skills in selected South Carolina secondary schools* (Unpublished doctoral dissertation). University of South Carolina, Columbia.

- Mulford, B., & Silins, H. (2003). Leadership for organisational learning and improved student outcomes—What do we know? *Cambridge Journal of Education*, 33, 175-195.
- Murphy, J. (2006). *Preparing school leaders: An agenda for research and action*. Lanham, MD: Rowman & Littlefield.
- Murphy, J., Elliott, S. N., Goldring, E., & Porter, A. (2007). Leadership for learning: A research-based model and taxonomy of behaviors. *School Leadership and Management*, 27, 179-201.
- Murphy, J., Hallinger, P., & Mitman, A. (1983). Problems with research on educational leadership: Issues to be addressed. *Educational Evaluation and Policy Analysis*, 5, 297-306.
- Murphy, J., & Vriesenga, M. (2005). Developing professionally anchored dissertations: Lessons from innovative programs. *School Leadership Review*, 1(1), 33-57.
- Murphy, J., & Vriesenga, M. (2006). Research on school leadership preparation in the United States: An analysis. *School Leadership and Management*, 26, 183-195.
- Nogay, K., & Beebe, G. (1997). Gender and perceptions: Females as secondary principals. *Journal of School Leadership*, 7, 246-265.
- O'Day, K. (1984). *The relationship between principal and teacher perceptions of principal instructional management behavior and student achievement* (Doctoral dissertation). Retrieved from ERIC database. (ED8426701)
- O'Donnell, R., & White, G. (2005). Within the accountability era: Principals' instructional leadership behaviors and student achievement. *NASSP Bulletin*, 89(645), 56-71.
- Pitner, N. (1988). The study of administrator effects and effectiveness. In N. Boyan (Ed.), *Handbook of research in educational administration* (pp. 106-132). New York, NY: Longman.
- Robinson, V., Lloyd, C., & Rowe, K. (2008). The Impact of leadership on student outcomes: An analysis of the differential effects of leadership types. *Educational Administration Quarterly*, 44(5), 635-674.
- Rowan, B., Bossert, S., & Dwyer, D. (1983). Research on effective schools: A cautionary note. *Educational Researcher*, 12, 24-31.
- Sheppard, B. (1996). Exploring the transformational nature of instructional leadership. *Alberta Journal of Educational Research*, 42, 325-344.
- Smith, S. (2007). *Principals' and teachers' perception of principals' instructional leadership* (Unpublished doctoral dissertation). University of South Carolina, Columbia.
- Southworth, G. (2002). Instructional leadership in schools: Reflections and empirical evidence. *School Leadership and Management*, 22, 73-92.

- Stricherz, M. (2001, September 12). D.C. principal's training designed to boost instructional leadership. *Education Week*, 21(2), 13.
- van de Grift, W. (1990). Educational leadership and academic achievement in elementary education. *School Effectiveness and School Improvement*, 1(3), 26-40.
- Villanova, R., Gauthier, W., Proctor, P., & Shoemaker, J. (1981). *The Connecticut School Effectiveness Questionnaire*. Hartford: Connecticut State Department of Education, Bureau of School Improvement.
- Wallace, M., & Poulson, L. (2003). *Learning to read critically in educational leadership and management*. Thousand Oaks, CA: Sage.
- Waters, T., Marzano, R. J., & McNulty, B. (2003). *Balanced leadership: What 30 years of research tells us about the effect of leadership on student achievement*. Denver, CO: Mid-continent Research for Education and Learning.
- Witziers, B., Bosker, R., & Kruger, M. (2003). Educational leadership and student achievement: The elusive search for an association. *Educational Administration Quarterly*, 34(3), 398-425.

## Bio

**Philip Hallinger** is Chair Professor of Leadership and Change and Director of the The Joseph Lau Luen Hung Charitable Trust Asia Pacific Centre for Leadership and Change in The Hong Kong Institute of Education. He received his doctorate in education from Stanford University and focuses his research on school leadership, educational change, and leadership development.