ABSTRACT

Title of Dissertation: ENHANCING THE 'LEARNING PROFESSION':
                          IMPROVING NEW TEACHER RETENTION
                          WITH TEACHER INDUCTION

Benjamin Alexander Cohen, Doctor of Philosophy, 2005

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Induction programs are policy interventions designed to address organizational

and professional issues that arise during novice teachers' transition into the

workplace. These issues include high attrition rates, teacher burnout, low morale

and limited development of instructional expertise. Although research has

provided evidence about the promise of induction programs for addressing these

issues, little is known about how these programs function in different

organizational contexts for different demographic and professional groups of

teachers. Using survey data from a nationally representative dataset of public

school teachers, this dissertation describes the characteristics of teacher induction

programs and their effects on teachers' retention in different normative and organizational contexts for different groups of teachers. Induction programs increased the likelihood of teacher retention generally. This study finds that specific components of teacher induction programs, such as mentoring, common planning time and supportive communication, had different effects on retention. These effects vary according to school enrollment, schoolwide collegiality and commitment levels, and whether novices taught out-of-field. Specifically, this study found that high quality mentoring was moderated by teachers' infield certification status, schoolwide collegiality and enrollment. Common planning was moderated by schoolwide commitment levels, and supportive communication was moderated by schoolwide commitment.

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WITH TEACHER INDUCTION

by

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DEDICATION

To Carla, Julian and Sophie

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I had the great fortune and pleasure of knowing many supportive and knowledgeable individuals who took part in my doctoral education, from my colleagues, friends and family who promoted and encouraged my initial interest in pursuing a doctorate, to faculty at the University of Maryland who shaped, directed, honed and cultivated my academic skills and research interests. Throughout my graduate experience I had great support without which I would not have reached this juncture.

First, I thank my advisor and co-chair, Bob Croninger, for providing expert and patient advice since I took my first seminar with him in 1997. Bob offered extensive, deeply informed and practical guidance to me on many matters, from composing complex arguments (or, frankly, when I needed it, simple ones) to understanding more arcane aspects of statistical methods, and he did so several times from his home, sharing his valuable family time.

Second, I thank Jacqueline Cossentino, my co-chair, who helped me to understand a wider universe of theory and research about teachers beyond the immediate focus of this dissertation. Jackie's review of one of my comprehensive exams, and her subsequent influence on my dissertation, greatly aided me in recognizing important areas of knowledge that pertain both to this study and my broader interest in teachers' work-life.

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My initial interest in a doctoral education began quite a while ago, but it was only when Karol Krotki "admitted" me to the American Institutes of Research (AIR) that the opportunity took center-stage. Karol strongly encouraged me to pursue my doctorate as soon as I arrived at AIR, provided much encouragement, and brought me into an environment that surrounded me with colleagues who were helpful in many ways.

Finally, none of the support and advice that I have been given was as important as what I received from my wife Carla, who constantly helped me develop ideas just as she coordinated our home life in a way that let me attend class, visit the library, write my papers, and finally produce my dissertation. I cannot imagine completing this great endeavor, or any other, without her.

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CHAPTER I

SOFTENING A STARK CONTRAST

The Problem

Individuals are attracted to the work of public school teaching through a

highly personal set of motivations (e.g., Bullough, Knowles & Crow, 1991;

Cohen, 1991) and are summarily shocked by conditions strongly at odds with

what initially attracted them to the work – the experience of learning to teach is

often a collision of personal motivations and sociological realities (Lortie, 1975).

In their new positions, many novice teachers – those with two or fewer years of

experience[1] – must demonstrate instructional, social and organizational skills

they do not possess, and deal with student control and discipline issues,

oftentimes coping by utilizing strategies in conflict with other educational goals

(Feiman-Nemser, 2003; Veenman, 1984). These challenges build stress, heighten

burnout among novices, and frequently lead them to decide to leave their

positions for other endeavors (Gold, 1996).

Teacher turnover, which includes permanent exits from the teaching

profession as well as migrations from one school to another, is a pressing

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[1] This dissertation includes a Glossary of Terms. It is attached following the Appendix.

1

problem in the public education system (Kirby & Grissmer, 1987; Macdonald, 1999). Turnover is particularly problematic among novice teachers. Within their first five years of teaching about one-third of new teachers leave their positions (Darling-Hammond, 2003). Teachers in high poverty schools often have even higher turnover rates (Bandiera de Mello & Broughman, 1996). One study indicates that teachers in some schools have turnover rates reaching almost fifty percent in their first year of teaching (Whitener, Gruber, Lynch, Tingos & Fondelier, 1997). Even more, high turnover rates disrupt children's education generally, splinters instructional programs and undermines professional development processes (Johnson, Kardos, Kauffman, Liu & Donaldson, 2004). These problems have led policymakers to employ a variety of interventions to reduce teacher turnover generally, including induction programs, yet the interventions are rarely coordinated to both systematically diagnose and correct the problem of teacher turnover writ large.

Researchers offer many explanations for teacher turnover. Often teacher turnover is viewed in terms of supply and demand, or a consequence of macroeconomic and market forces (Bluedorn, 1982; Murnane, 1987). However, these views of turnover neglect any possible relationship between turnover and the working conditions that give novice teachers the "shock" that teacher-centered researchers (such as Lortie) have pointed to as causes of turnover.

Teachers often cite specific teacher working conditions as reasons for

leaving their teaching positions. Just under 30 percent of teachers cited

inadequate administrative support, and about 18 percent cited student discipline

problems, as reasons for leaving the profession (Whitener et al., 1997). Difficult

working conditions in general have been associated with teacher turnover for

some time (Ishler, 1990; Chapman, 1986; National Education Association [NEA],

1966), and recent research points to specific organizational conditions, such as

insufficient faculty involvement in decision-making and poor hiring processes,

that increase the likelihood for teacher turnover (Ingersoll, 2001; Johnson,

Kardos, Kauffman, Liu & Donaldson, 2004).

Education policymakers and program developers agree that it is critically

important to increase retention rates among novice teachers because novice

teacher turnover exacts a range of costs on the education system. Analysts point

out that high rates of novice teacher turnover diminish the collective teacher

knowledge and skills in a school (Kain & Singleton, 1996), overburden

experienced faculty who need to compensate for the needs of junior colleagues,

and require schools to devote limited resources to support newcomers year after

year (Carroll, Reichardt, & Guarino, 2000; Darling-Hammond, 2003). The

problems associated with teacher turnover reduce the efficiency of supplying

quality teachers for instructional purposes in schools and, in turn, jeopardize

student achievement (Konanc, 1996). Most states and many individual schools and districts have recognized that the intensity and range of costs of novice teacher turnover demands programmatic intervention.

The Proposed Policy Solution

Improving novice teachers' working conditions in order to improve teacher retention is of great concern to designers of novice teacher induction programs. The *raison d'être* for these programs is often to soften the stark contrast between the demands and working conditions of teaching and neophytes' preconceptions and motivations surrounding teaching. By providing a variety of supports to novice teachers, these programs assist novice teachers' transition into the workplace and reduce teacher turnover rates. Teacher induction programs have received widespread validation from teachers, policymakers and educational researchers; however, our understanding of their effects on teachers is limited, particularly our knowledge of whether their impact is contingent upon contextual and individual correlates of schools and teachers (Feiman-Nemser, Schwille, Carver & Yusko, 1998).

Teacher induction programs are one type of formal policy intervention not necessarily that provides targeted teacher development activities. Although induction programs have been designed to respond to a set of common concerns

related to novice teacher development and retention, their forms vary greatly.

Primary in many program designs is the provision of a mentor teacher who

meets with one or more novices and provides individualized guidance to them

as part of the induction process. Additional coursework, specialized workshops,

classroom assessments, participation in collegial networks of novice teachers,

reduced teaching schedules, and structured opportunities for novice teachers to

receive feedback from other faculty or administrators are some of the other

ingredients that policymakers use to build induction programs. Still other

programs tie novice teacher development and induction to summative

evaluations and state certification standards as a way to ensure that only high-

quality teachers are retained by school systems (Villani, 2002).

Induction programs propagated widely after the 1980s, concomitant with

increasing publicity concerning the problems faced by beginning teachers and

major reform efforts aimed at professionalizing the teaching field. Besides

reducing teacher turnover and creating a more stable workforce, some

policymakers devised novice teacher induction programs as part of larger reform

efforts to raise the quality of teachers generally, and in particular to develop and

sustain effective teaching. Induction programs are central to professional

development efforts in many school districts and a component of many states'

efforts to meet the challenges posed by high profile reform efforts such as the No

Child Left Behind Act of 2001. Currently, about three quarters of states have regulations requiring some form of induction program (Wang, Tregidgo & Mifsud, 2002). Induction programs are therefore at the center of nationwide efforts to reduce teacher shortages, strengthen the professionalization of teaching, and improve school performance. Nonetheless, while the focus on induction is strong, varying program structures and their outcomes have rarely been systematically explored in-depth. Policymakers' faith in the efficacy of these programs could only until very recently rely on rigorous representative studies of program impacts on turnover, whereas in the past the evidence on program effects was limited both methodologically and conceptually.

Despite their centrality in efforts to improve teaching, the actual effects of novice teacher induction programs have been measured only in terms of individual programs or by studies with limited generalizability. Empirical research on induction programs is generally weak, although since the late 1990s a handful of empirical studies using more rigorous methods have been completed, most recently Smith and Ingersol (2004). Generally, most empirical research on induction programs uses small sample sizes, provides no control group against which to compare effects, and fails to account for individual or organizational correlates of program outcomes. In summary, the merits of induction programs in addressing the issue of attrition and other transitional problems experienced

by novice teachers have a strong rationale in the professional literature but a weak empirical basis.

Purpose of This Study

The purpose of this dissertation is to examine in greater detail how induction programs affect one issue associated with the transition of novice teachers into the workplace – namely, teacher turnover. This study provides a fine-grained examination of the relationship between different components of induction programs (the programmatic elements that together form a whole induction program, such as a mentor or novice teacher seminars) and the likelihood of teacher turnover for different teacher, normative and organizational characteristics. Although research indicates that induction programs are promising policy responses to the problem of teacher turnover, the majority of existing studies of teacher induction programs have methodological limitations that make it difficult to generalize the findings of the studies to other settings.

This study develops the empirical research literature on teacher induction by utilizing a survey data set available from the U.S. Department of Education that permits conducting a nationally representative, quasi-experimental analysis of induction programs and their relationship to teacher turnover. Specifically, data from the 1999-2000 Schools and Staffing Survey (SASS) offer measures of

several components of induction programs available to new teachers during their first year of teaching. SASS data also have measures of teacher turnover, teachers' working conditions, teachers' background and professional preparation, and teachers' attitudes about collegial relations, among other potentially relevant variables. The SASS data are an excellent window on teacher induction programs and support this study's purpose by addressing three areas of teacher induction research that have to date received little attention.

First, although many studies have described the form and design of induction programs in various communities and states (e.g., Pan & Mutchler, 2000; Southeast Center for Teaching Quality, 2003), these studies do not fully describe the variety of program forms experienced by new teachers. Moreover, because each study categorizes program forms differently, it is difficult, if not impossible, to ascertain the true incidence of program forms nationwide. The SASS data provide standardized measures of program components that permit a consistent summary of program forms and an examination of how forms vary across teacher populations and organizational settings. The measures SASS provides are an advance on the extant data collected about induction programs, although while they point to discrete elements of induction support the measures in some instances reveal teachers' perceptions of support and not necessarily a concrete instance of its availability.

Second, research on teacher induction program effects uses different outcome measures that complicate the synthesis of results across studies. Some studies measure teacher attitudes (e.g. Klug & Salzman, 1991), others measure changes in instructional performance (e.g. Schaffer, Stringfield & Wolffe, 1992), and still others measure teacher retention or a proxy measure for retention (e.g. Odell & Ferraro, 1992; Charles A. Dana Center, 2001). While program evaluations improve when multiple outcomes are considered (Joint Committee on Standards for Educational Evaluation, 1994), the body of research on induction lacks a clear or standardized set of measures in any of these areas. The utilization of widely differing outcome measures in induction research fragments our understanding of this policy rather than builds a common body of knowledge about it. The use of SASS data allows this study to focus on one outcome – retention – utilizing a relatively standard and accepted set of measures that tap teachers' working conditions related to their decisions to stay or remain in the profession.

Third, this study advances our understanding of how different forms of induction programs function in different organizational settings for groups of teachers differentiated by their demographic and pre-service preparation characteristics. SASS data are well-suited to this purpose because they include measures of many organizational and individual variables for each teacher who submitted information about the nature of their first year induction experience.

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Teachers report information about their class sizes, the quality of administrative support they receive, their salaries, and their attitudes about numerous working conditions. Each teacher response is linked to detailed information about the schools in which they work. The SASS school survey collects information on school size, the racial, ethnic and socioeconomic composition of schools, and school programs.

These data represent teachers nationwide and allow for systematic comparisons of different teachers in different settings. In contrast, existing studies of induction programs do not utilize this quality of survey data. By taking advantage of these extensive data on teachers and their working conditions, this study is postured to make analyses and conclusions about teacher induction programs in much more detailed and generalizable ways than previous studies – the analyses made possible by SASS permit this study to produce descriptions of program effects that vary according to different teacher backgrounds and school contexts.

Research Questions

Three key research questions guide this study. The first question produces a description of the form and distribution of induction programs nationwide while the second and third questions examine relationships between induction

programs and teacher turnover. I provide a rationale for each question and a

brief statement of any assumptions about likely results.

Question 1

What induction components are most prevalent and what are their

distributions among different demographic or professional groups of teachers in

different organizational contexts?

Although earlier research has catalogued the inclusion of various

induction components in state-level legislation or policies (e.g., American

Federation of Teachers [AFT], 1998), the extant literature does not describe the

distribution of these components across teacher populations and different

organizational settings. A wide range of factors, however, may influence

teachers' induction experiences, including state policies, school district priorities,

local capacity, and beliefs about the difficulty of teaching in particular

organizational settings (e.g., low-poverty v. high-poverty schools or elementary

v. middle school settings). To better understand the policy-significance of

induction programs, I examine not only their prevalence but teachers' access to

specific components of induction programs.

Because there is widespread support for induction programs and nearly half of the states promulgate the development of programs with policies or funding (or both), I expected to find large percentages of teachers reporting access to the more popular components of induction programs, such as mentoring, seminars and classes for beginning teachers, reduced class loads and supportive communication. I also expected, however, to find variation in teachers' induction program experiences, including differences in the scope of induction experiences reported by teachers working in different school settings. Not all teachers will have access to all of the components associated with induction programs, and some teachers will have access to more components than others.

Question 2

What is the relationship between induction program components and teacher turnover?

Although teacher induction programs are seen as a mechanism for accomplishing a range of different policy-relevant goals, reducing teacher turnover is among the most important of these goals; as evident in so many alarms from policymakers and teacher organizations such as the California

Department of Education (e.g. American Federation of Teachers [AFT], 1998; Carroll, Reichardt & Guarino, 2000). A reliable and stable teacher workforce is a prerequisite for many education reform policies, including policies directed at improving pedagogy and enhancing accountability for school performance. Teacher induction programs are thought to reduce teacher turnover through policies and practices that support novice teachers' transition into the workplace, but little is known about how different components of induction programs might influence the likelihood that teachers stay on the job. By examining the relationship between teacher turnover and different program components, I consider the possibility that some program designs may be more effective in reducing teacher turnover than others.

Based on the results of earlier induction program research (e.g., Cheng & Brown, 1992; Eberhard, Reinhardt-Mondragon & Stottlemeyer, 2000) and generally accepted views that improving employees' working conditions enhances their retention in the workplace (Weiss, 1999), I assume that the provision of induction programs decreases the likelihood of novice turnover. However, I also assume that not all program designs will be equally associated with low rates of teacher turnover. While there is little empirical evidence to suggest which program designs are more effective, it is reasonable to assume that

some components of induction programs will be more strongly associated with lower rates of turnover than others.

Question 3

How does the relationship between different components of induction programs and teacher turnover vary for different demographic or professional groups of teachers in different school settings?

Studies of staff development and teacher turnover have identified a number of different individual and organizational correlates that impact successful staff development and teachers' decisions to leave their jobs. I expect several of these correlates to play a significant role in statistical models that relate induction programs and turnover, and in doing so, provide a clearer understanding about how induction program effects may vary across demographic or professional groups of teachers and different organizational settings.

Individual correlates of retention include teacher preparation and other demographic characteristics. Studies of the relationship between teacher sex and turnover (Bielby & Bielby, 1992; Erickson, Jacobs, Johansen & Robin, 1968; Whitener, et al., 1997) indicate that female teachers are more influenced by role

conflicts between the school and the home than male teachers. When teachers

experience these conflicts, female teachers are found to be more likely to return

home to raise children while male teachers are more likely to assume additional

career responsibilities. Aspects of teachers' preparation relate to turnover also,

with uncertified teachers (Darling-Hammond, 2002) and those with less student

teaching (Henke, Chen & Geis, 2000) leaving schools at higher rates. Math and

science teachers also depart from the teaching profession more often, though

these departures may have more to do with external career opportunities than

stresses internal to the workplace (Murnane, 1987).

Organizational characteristics, such as school level, size and location, bear

on staff development effectiveness and turnover as well (Ingersoll, 2001). Other

researchers (Bryk, Cambrun & Louis, 1999; Mclaughlin & Talbert, 2001;

Rosenholtz, 1989) make it clear that enhanced normative and social climates,

particularly higher levels of collegiality and communication among teachers,

create a more desirable workplace for many teachers. Thus, to understand the

role of induction programs it is essential to consider the interaction of these

personal and organizational characteristics and the effect that they might have on

the implementation and effectiveness of induction programs.

Generally, I expect that the relationship between teachers' induction

experiences and teacher turnover will vary with teacher and organizational

characteristics. I assume, for example, that improvements in collegiality and communication between teachers – an aspect of schools generally known as a school's "professional community" (McLaughlin & Talbert, 2001) – will improve teacher retention because these aspects of schools are associated with improvements in working conditions. I expect that high levels of teacher induction programs will reduce teacher turnover as well, although where professional communities are vibrant I expect induction to have a smaller role because other aspects of the school are alleviating some of the stress associated with teaching. Because professional community represents a substantial aspect of the working conditions that induction programs seek to improve, it is possible that the relationship between induction experiences and teacher turnover is contingent on the levels of professional community and similar organizational characteristics.

Significance of the Study: Encouraging a New View of Induction Programs

This study is important not only because it makes more detailed statements about teacher induction programs and their effects than have been made by prior studies, but also because it permits for a discussion of much more specific policy implications and nascent theories about how programs operate in terms of complex contexts. This study offers analyses that encourage a "new

view" of induction programs that is based on much more nuanced descriptions of programs and their effects. This view stands in contrast to much earlier research that viewed induction programs as a black box, where induction programs were evaluated in terms of their outcomes but the inter-workings that led to certain outcomes were largely neglected in terms of analysis. Most previous studies describe induction experiences and program effects in general or vague terms, without examining the components that make up the programs to understand their workings vis-à-vis school context and teacher background. Since earlier research has not utilized large scale survey data and standardized measures of induction program components, researchers have been limited to making broad-brushed claims about the programs with relevance to only those programs in which their observations were conducted. This study, however, utilizes a nationally representative dataset and analyzes information about several components of induction programs. The availability of these data opens several analytic opportunities not before possible in most induction program studies.

Assumptions of the Study

This dissertation is a policy study and it necessarily focuses on the role that a specific policy intervention – teacher induction programs – has on a

particular teacher behavior – retention. This study assumes that teacher

induction programs are a viable means to improve teacher retention. I base this

assumption on earlier studies that validate the importance of providing support

for novice teachers (e.g., Feiman-Nemser, 2001; Russell, Altmaier & Van Velzen,

1987), research that clarifies the problems and stress inherent in teachers'

working conditions (e.g., Darling-Hammond, 2003; Friesen, Prokop & Sarros,

1988; Lortie, 1975; Rosenholtz, 1989; Veenman, 1984), and research on induction

programs that provide some preliminary indications about their promise (e.g.,

Fideler & Haselkorn, 1999). Although induction programs cannot address all

factors that influence a teachers' decision to leave the workforce, they address a

range of factors thought critical to teacher turnover and retention, particularly

during the early stages of a teacher's career. Given the importance of these

factors, this study excludes teachers who worked in more than one public school

in order to ensure that the school effects I model are linked to the novices' first

year of teaching.

This study also assumes that the measures of components of induction

programs available in SASS are valid indicators of the form of induction

programs being utilized nationally. I base this assumption on literature that

confirms the SASS components are common ingredients in many state policies

and local programs. For instance, several reviews of state induction program

policies (AFT, 1998; Mastain, 1991), identify a similar set of induction

components as central to state reform efforts. Literature reviews and other

syntheses of empirical studies on teachers' induction experiences describe a

similar range of induction programs and do not suggest any significant

omissions in the components included in SASS (Fideler & Haselkorn, 1999;

Villani, 2002). While SASS offers the best data to date on induction programs, the

variables it uses to collect these data, in some cases, still remain measures of

novices' *perception* of the availability of support.

Limitations of the Study

Policy studies rely on effective measures of the policy interventions under

study. This study measures several components of induction programs known to

be common nationwide. Nonetheless, SASS does not measure all aspects of

induction programs nor does it measure the quality of induction programs

experienced by teachers. For instance, the amount of data SASS collects, while

broader and more extensive than any other survey of teachers' induction

experiences, excludes important information about the training and selection of

mentors, the stability of program funding (DeBolt, 1989), and implementation

quality, as well as the percentage of novice teachers in a school that might have

to be supported by an induction program (Johnson & Kardos, 2002).

Furthermore, SASS does not provide information about other programs that might influence teachers' successful transition to the workplace, such as school-university partnerships, professional development programs (beyond those provided by a mentor or induction program), or high-stakes performance standards for novice teachers.

Another limitation to this study relates to the size of the relevant SASS sample. Although the full SASS public school teacher sample collects data from over 40,000 teachers, the relevant analytic sample in this study pertains to novice teachers who worked in the same school in which they receive induction support during their first year of teaching. After applying these restrictions, the remaining sample is approximately 3,000 teachers, less than 10 percent of the full SASS sample of teachers. Furthermore, the number of teachers sampled within each SASS school is small, constraining the potential to use multilevel methods that permit the full disentanglement of individual and organizational effects. Although the relevant analytic sample is sufficient for the purposes of this study, a larger sample would permit a more robust investigation of how organizational contexts influence the effectiveness of teacher induction programs.

While these limitations complicate a study of induction using SASS, important analytic opportunities remain. These opportunities are bolstered by SASS being the only national sample of induction programs and individual

components available. Not only are these data representative of teachers

nationwide, they include several other measures of teachers' working conditions

and normative and behavioral experiences thought relevant to an investigation

of induction programs. By utilizing these advantages and the analytic

opportunities afforded by SASS data, this study tests more complex hypotheses

about induction programs without concerns that results are too closely tied to the

idiosyncrasies of local settings.

Organization of the Study

The next chapter reviews teacher induction programs and teacher

turnover literature relevant to the study. Chapter 3 describes the methodology I

will use to answer the research questions introduced in Chapter 1. Chapter 4

presents the results of my analysis described in Chapter 3. Chapter 5 summarizes

the study, discusses the implication of the results of the study and recommends

directions for further research.

CHAPTER II

ILLUSTRATIVE AND EMPIRICAL ACCOUNTS

OF INDUCTION PROGRAMS

> This day the selectmen, accompanied by the Rev. Mr.
>
> Prentice and some other gentlemen of the town, visited the
>
> school, and after good advice given the children and
>
> solemn prayers to God for his blessing, they gave Mr.
>
> William Harris the care of the Writing School. (Small,
>
> 1969, p. 336)

A large proportion of teachers today might identify with the relative absence of professional guidance that is implicit in Small's (1969) account of William Harris's rapid introduction to his school in eighteenth century Charlestown. In fact, from colonial times to the present era, education history provides a consistent record of weak support for new teachers. Two hundred years after William Harris was given "care of the Writing School," Dan Lortie's (1975) seminal examination of teachers and their work concluded that weak professional induction into teaching, combined with cultural and personal expectations embedded in teachers' life histories, isolated teachers in the workplace and weakened their commitment to teaching as a profession. As Lortie gathered evidence that pointed to the failures of teacher professionalism, policymakers created the first induction programs to begin to address high rates of beginning teacher turnover that were believed to stem from poor working conditions and the stresses that teachers faced in schools.

In this chapter, I present a critical review of research, policy and theoretical literature pertinent to this quantitative study of teacher induction programs. I begin with a brief characterization of the literature that describes and analyzes teacher induction programs. Next, I connect Lortie's (1975) description of the problems he observed in teachers' working conditions to contemporary policy issues related to teachers' professional development and entry into the teaching profession. I then describe the rationale and form of existing induction programs, which have become popular solutions to challenging working conditions that lead to teacher turnover, follow this with a description of what is known (and not known) about induction program effects, and suggest that important contextual and individual variables may interact with these effects. Last, I state the limitations of current research on induction programs and re-state the problems that this study investigates.

The Nature of Literature Describing and Analyzing Induction Programs

The literature on induction programs is "multivocal" – that is, it comprises a large body of literature that varies widely in purpose, perspective, and epistemological procedures (Ogawa & Malen, 1991, p. 265). A variety of authors, such as state policy makers and program analysts, academics, non-profit organizations and interest groups (e.g., the National Education Association [NEA] and the American Federation of Teachers [AFT]), as well as members of the private sector (e.g., consultants or consulting firms), contribute to the induction program literature. These authors have myriad affiliations and aims; they approach the topic from different perspectives and with different analytic requirements. The diversity of perspectives on induction programs

mirrors the myriad programmatic responses to the problem of new teacher turnover, and

points also to how induction programs are oftentimes part of larger concerns about

teacher quality, student achievement or other educational reforms

      While some of the earliest studies of induction programs date from the 1960s (e.g.

,Johnson, 1969; Swanson, 1968), most research literature on induction programs dates

mainly from the 1980s and later, in part due to interests in induction as a lever for

management and accountability efforts characterizing that decade. It includes accounts of

the challenges that novice teachers face during their first teaching assignments, speaks

often to a policymaker audience about specific policy issues, and sometimes considers

induction in relation to relatively concrete aspects of teachers' working conditions (such

as class size or instructional feedback) yet does little to build to any generally agreed

upon, and empirically-based, propositions about induction processes. The literature lists

many elements that comprise induction programs but lacks a consensus about *how* certain

program characteristics promote the successful induction of novice teachers. I draw on

these various studies throughout this chapter because each type highlights the limitations

in our knowledge of how and under what circumstances induction programs promote the

retention of novice teachers.

      While the induction literature has limitations, when viewed broadly, it presents

the range of program forms used in practice and introduces a number of different analytic

lenses through which to examine programs. In selecting the literature to include in this

review, I chose studies, reports, and related documents that provided comprehensive

descriptions of programs, reflected current thinking about induction and the problems that

new teachers face in the workplace, and, quite often, had undergone peer review, or were

published by established organizations (e.g., published in a journal of the American Educational Research Association [AERA] or by an organization such as the AFT, the American Association of Colleges of Teacher Education [AACTE], or a state-level agency). Prior to critiquing this literature, however, I refer to a classic examination of the conditions of teaching known to challenge novice teachers to this day.

The Problem in Beginning Teaching Working Conditions

Novice teachers are typically isolated from colleagues who might otherwise help them develop knowledge and expertise during the beginning of their instructional careers. Preeminent among the studies of these isolating and unprofessional working conditions in schools is Lortie's *Schoolteacher* (1975). Lortie used multiple sources of data for his classic study of elementary and secondary schools located in New England and Florida, such as survey results, interviews and observations. He found teachers' socialization into professional norms and practices to be very weak, and he identified several aspects of teachers' work that enabled this weakness.

One, which he termed, "soft recruitment," permits prospective teachers to self-select a teaching career without facing strong professional entry standards. This relative openness contributes to insufficient cohesion among teachers and makes it more difficult for teachers to develop a unified professional identity. Second, Lortie identified "insufficient rewards" in teaching that include a lack of long-term extrinsic rewards, a scarcity of ancillary rewards and teachers' frequent reliance on "psychic" rewards. Psychic rewards are teachers' subjective valuations of what is rewarding in their work and are dependent on teachers' personal attitudes, purposes and goals; they frequently

relate to managing relationships with students, or protecting self-esteem, and seldom connect to professional standards of practice. Similarly, small salary increases and limited promotional structures increase the "tentativeness of future commitments" among teachers. The inadequate reward structure yields short-term thinking among teachers and contributes to increased attrition. Third, the "absence of collective efforts" leaves novice teachers generally isolated in their classrooms without a socially tight faculty to support them. The lack of teacher collectivity in schools – or in contemporary terms, the lack of professional community – limits new teacher cohesion, reduces commitment, and increases turnover. According to Lortie, these three defining elements of weak socialization among teachers—soft recruitment, insufficient rewards, and absence of collective efforts—strengthen teachers' reliance on personal beliefs and practices rather than any set of shared professional standards or collegial support that would help form a collegial community among teachers.

Simon Veenman (1984) supplemented Lortie's detailed analysis of teachers' early career socialization with an extensive catalogue of working conditions that beginning teachers perceive as problematic. In his review of dozens of studies, classroom discipline, student motivation, parent relationships, insufficient materials, the organization of class work and problem students were common issues that amassed into a "reality shock" for novice teachers during their transition from pre-service preparation to their first full-time positions. Veenman's description of early work experiences, which he developed from a meta-analysis of 83 studies (including 55 from the United States), paints a picture of novice teachers struggling with stressful working conditions that fail to meet novice teachers' psychological needs and limit positive social integrations with students and

colleagues. Veenman's characterization of the difficulties that novice teachers confront is consistent with other research on teachers' working conditions (Chapman & Hutcheson, 1982; Gold & Roth, 1993; Johnson, Kardos, Kauffman, Liu & Donaldson, 2004). Given the frequency and scope of problems encountered by novice teachers it is not surprising that one critic has viewed teaching as the "profession that eats its young" (Halford, 1998).

But while research documents the challenges encountered by novice teachers generally, those challenges may be especially acute in specific school settings. The stresses and strains of first teaching assignments are sometimes paired with ineffective school leadership (Berry, Noblit & Hare, 1985) and may be exacerbated in specific organizational contexts where school leaders and teachers face the greatest educational challenges. For example, research on teachers' working experiences in urban schools indicates higher crime rates, greater teacher and student absenteeism, lower student achievement and attainment, and fewer instructional resources than in rural and suburban schools, all of which create additional stresses and strains in the workplace (Lippman, Burns & McArthur, 1996). If the profession "eats its young" generally, its appetite is particularly voracious in these higher-stress, lower-support settings.

Contemporary expectations for novices to immediately perform at a competent level compound the negative impact of these challenging working conditions. While novice teachers struggle with basic classroom management and curricular issues, well-established patterns in the teaching profession provide little opportunity for the gradual assumption of teaching responsibilities (Feiman-Nemser, 2001; Lortie, 1975). The culture of expectations placed on novices by reformers and policymakers gives little attention to the more fundamental needs of novice teachers, such as mastering classroom

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management, overcoming doubts about self-adequacy, understanding criteria for novice teacher evaluations, and building appropriate and positive relationships with their pupils (Fuller, 1969). Added to this set of challenges is the erosion of teachers' authority and professional identity (Rice & Schneider, 1994; Short & Greer, 1997) that are concomitant with the rationalization and specialization of their work.

The weighty burden of demanding working conditions, immediate performance expectations, and hindered teacher autonomy creates significant stress on teachers, often leading to teacher attrition (Friesen, Prokop & Sarros, 1988; Gold, 1996). About one-fourth of all beginning teachers leave the profession in the first five years, and in high poverty areas the attrition rate has been reported to be as high as 50 percent (Bandiera de Mello & Broughman, 1996; Darling-Hammond & Sclan, 1996; Whitener, et al., 1997).

Although some attrition is evident in all occupations, it can be particularly destructive in school systems. For example, novice teacher turnover increases recruitment costs and yields a poor return on personnel investments (Texas Center for Educational Research, 2000). The accelerated loss of pedagogical expertise associated with attrition compounds these high monetary costs when large numbers of teachers leave the profession before they develop high levels of professional knowledge (Berliner, 1988) and contribute to school effectiveness. High rates of novice teacher turnover disable school systems from generating collective teacher knowledge (Kain & Singleton, 1996) and burden veteran teachers with the ongoing support they must offer to a steady arrival of inexperienced colleagues. Ultimately, high rates of teacher turnover make it harder and harder to allocate high quality teachers to classrooms for instructional purposes. In these

circumstances, the teaching field ultimately fails to build a set of "well-recruited" experts who can assist novices, in turn stymieing student achievement (Konanc, 1996).

Teacher Induction: A Policy Solution?

Growing awareness of the difficulties faced by beginning teachers has spurred researchers, policymakers, teacher advocates and some educational leaders to develop policy interventions intended to slow the revolving door of teacher exits and transfers from public schools. To understand the nature of these interventions – specifically teacher induction programs – I discuss the rationale for their creation, the different forms of induction programs, and the available evidence about the success of induction programs in reducing teacher attrition.

Rationale and Purposes of Teacher Induction Programs

Policymakers created some of the earliest induction programs in the late 1960s in response to the educational issues identified by James Conant (1961) and other problems beginning teachers encounter, such as insufficient instructional knowledge, dissatisfaction with working conditions and high rates of turnover (Durbin, 1991). Early program designers generally attributed teacher turnover to high levels of teacher stress and loss of commitment that resulted from difficult working conditions. The induction programs intended to prevent teacher burnout by attending to their psychological and professional needs. Induction programs also sought to improve novice teachers' transition from pre-service to in-service environments and to expand teachers' knowledge of effective teaching. In other words, early teacher induction programs recognized that

personal and professional supports were necessary to stem the flow of novice teacher turnover (Gold, 1996).

Odell (1989) offered a more expansive rationale for teacher induction programs that included seven goals:

1. Continuing assistance to ameliorate common problems beginning teachers experience;

2. Developing requisite knowledge and skills for successful teaching;

3. Integrating novices into school, district and community social systems;

4. Providing opportunities for novices to reflect on their work;

5. Building a foundation for continued growth;

6. Increasing positive attitudes about teaching among novices; and

7. Increasing novice retention.

More recently, Feiman-Nemser (2001) argued that induction is a central phase in a continuum of teacher learning. In her vision of teacher learning, teacher induction is a time when novices must learn *how to teach* whereas during pre-service training novices learned *about teaching*. Feiman-Nemser listed several key tasks of induction programs: developing knowledge about the communities in which teachers work, developing novice teachers' knowledge about curriculum and adaptations to fit curriculum with students' needs and interests, supporting novice teachers' pedagogical experiments, promoting teachers' professional identities, and promoting the classroom as a locus for inquiry about instructional practice (Feiman-Nemser, 2001).

Forms of Induction Programs

While there is general agreement about the purposes of induction programs, a range of induction program forms exists nationwide (American Federation of Teachers [AFT], 1998; Cohen, 2003; Furtwengler, 1995; Villani, 2002). Program forms vary according to their legislative and policy environments, particularly in the funding that they receive across different state, district, and school locations. Even among induction programs that germinate from state level policies sensitive to the need to support novices, individual program quality may vary considerably within states and reflects the different capacity, needs, and commitment of local schools and school systems. However, while induction programs have some variability in their structural design – that is, how they are funded and what types of discrete supports they offer to beginning teachers – programs can be categorized according to whether they include specific components or forms of support. In this section, I discuss several of the key components characteristic of induction programs, and then present portraits of several well-developed programs identified in the literature.

Induction Program Components

National summaries of the status of induction program policies (e.g., American Federation of Teachers (AFT), 1998; Mastain, 1991; Southeast Center for Teaching Quality, 2003; Wang, Tregidgo & Mifsud, 2002) provide some indication of either the frequency with which certain components are utilized or what components are held to be important in program designs. These components include:

1. Mentor teachers who are trained and who are provided release time during the day to work with beginning teachers to help them hone practice and become familiar with the culture and operations of the school;

2. A scheduled in-service program of professional development for beginning teachers, that includes group support meetings, orientations, seminars, and observations;

3. A process of formative and/or summative evaluation of beginning teachers' knowledge and performance; and

4. Scheduling that permits opportunities for novice teachers and their peers to collaborate, observe lessons, reflect on professional development, and otherwise plan, communicate and collaborate.

These four components are the most widely addressed elements in both induction program designs and in calls for the expansion or promotion of the programs (e.g. AFT, 1991; Gold, 1996; Southeast Center for Teaching Quality, 2003; Wisconsin Department of Public Instruction, 1998). Other elements of induction programs are discernable in program plans and descriptions, in addition to the four I just presented, however they do not provide direct support to teachers. For instance, the existence of leadership positions within the program (such as a program administrator), detailed frameworks for evaluation, funding levels, and relevant curricula (Achinstein, 2001; Burmaster, 2002) may be viewed as other program components that indirectly influence the experiences of beginning teachers. However, in the following pages, I focus on the four components described above because they are available more directly to novices themselves.

Mentors – The Predominant Component.

Mentors are the most common component in induction programs and their roles are a frequent focus in the induction literature, with several monographs and articles focusing on this component (e.g., Awaya, et al., 2003; Danielson, 1999; DeBolt, 1989; Feiman-Nemser, 1996; Ganser, 2002; Gratch, 1998; Kilbourn & Roberts, 1991; Kyle, Moore & Sanders, 1999; Lasley, 1996; National Foundation for the Improvement of Education, 1999; Odell & Ferraro, 1992; Odell & Huling, 2000; Scherer, 1999; Strong & Barron, 2004). The literature on mentoring is extensive. The prominence of mentors in induction programs has led researchers to claim that they are "essential" actors in the nexus of professional control in schools (Rowan, 1990). Buttery, Haberman and Houston (1990) claimed that the provision of first year mentoring is the most salient issue facing teacher education. These supporting views on mentoring are consistent with teachers' reports that novices are highly motivated to work with a mentor and with research that substantiates the linkage between mentoring and improved transitions into classrooms, including lower turnover rates for novice teachers (AFT, 1998; Koppich, Ashner & Kerchner, 2002).

The importance of mentoring, and its centrality in the minds of novice teachers, adds credence to the contention that consistent and high-quality mentoring is a mainstay in effective novice teacher induction (DeBolt, 1989; Gold, 1996; Villani, 2002). Because of their critically important role, advocates and experts argue that mentors need to receive substantial preparation – that they become informed about program goals and district teacher development policies, learn about the stages of teacher development and the

particular needs of novice teachers, are trained through the school year in clinical

supervision and classroom observation, and are taught about the importance of fostering

critical teacher reflection (Brewster & Railsback, 2001; Ganser, 2002; Villani, 2002).

These training goals have been translated into a range of mentor functions by

local educators and policymakers. For example, an induction program in Dubuque, Iowa,

requires mentors to:

1. Ensure that novices develop competency in several areas of teacher

   development defined by the State;

2. Meet and observe novices at least monthly;

3. Provide additional novice consultation during other non-instructional time;

4. Assist novices in curriculum implementation, provide feedback to building

   administrators about mentoring activities; and

5. Serve as a demonstration teacher in matters of instructional and classroom

   management (Green Valley Education Area, 2003).

6. As demonstrated by this induction program, as well as by induction

   programs elsewhere, mentoring is a central component in many program

   designs.

The Charles A. Dana Center's (2001) study is one of the relatively thorough

analyses of mentoring programs that can be found in the literature. It provides a synthesis

of induction program designs and a description of the policy context surrounding

programs, though the study's empirical evidence regarding program effects is limited to

novice teachers' ratings of the quality of support provided by mentors. Based on a subset

of about 500 beginning teachers in their second year of an induction program, and the

ratings these novices provided on mentor effectiveness, the Dana Center found that release time for mentors to interact with new teachers, and physical proximity of the mentor to the novice, have significant effects on novice ratings of mentor quality. However, novice-mentor subject area match did not have a significant relationship to mean ratings. Unfortunately, the lack of information on how each variable was constructed prevents a clear understanding of the size of these effects (Charles A. Dana Center, 2001).

Although the authors of the Dana Center report did not pursue the meaning of these results further, their data suggest that aspects of mentoring programs may interact in a way that relates to program effectiveness. The authors gave an indication of these relationships by explaining that the addition or removal of induction components from their effectiveness models altered the effect sizes of other components in those models. For example, it is conceivable that the role of subject match in a teacher's mentoring experience may depend on a mentor's proximity and release time. If mentors are not available for support (i.e., when their proximity is low or mentors have less release time) the importance of the mentor's subject knowledge for novices may be seriously constrained. More extensive and detailed analyses concerning the kinds of support provided by induction programs would clarify further the importance of specific aspects of the novice teacher-mentor match. The Dana Center's analyses of program design elements are less conclusive when their methodology, which uses no control group, direct measures of program effects, or estimates of possible interaction effects, is taken into consideration.

In-Service Events or Professional Development for Beginning Teachers.

Among the other induction program components, in-service or professional development activities designed specifically for novices are common and can take a variety of forms, such as observations, group or team meetings, seminars, orientation activities and conferences. Ideally, these events are regularly scheduled and form a continuum of instruction that is geared to the novice's early teaching experiences, in contrast to typical in-service events scheduled periodically for all teachers. The literature on in-service programs that are intended for novices alone is much less extensive than the literature on mentoring and must be pieced together from studies focused on induction generally; little empirical evidence is tied directly to efforts to understand novice-centered in-service events.

Ideally, in-service programs for novices should meet the best-practices criteria of professional development that all teachers receive generally, such as being a form of continuous collaboration among teachers who work toward school goals and being linked to solving real instructional and achievement problems (Hawley & Valli, 1999). For beginning teachers, in-service programs may be an important source of information about school reforms, student achievement or teacher evaluation standards, pedagogical theory or subject matter. Wisconsin's "Professional Development Plan," for instance, is intended to promote novices' self-directed growth, increase their collaboration in professional learning activities, address Wisconsin Standards for Teacher Development and Licensure, and encourage "risk taking" [sic] to improve student learning (Burnmaster, 2002).

Not surprisingly, beginning teachers prefer interactive in-service programs over non-interactive forms (Perez, Swain & Hartsbough, 1997). When these programs are

ongoing, school based, collaborative, teacher initiated and rooted in relevant knowledge bases about teaching and learning, they are thought to be most effective (Abdal-Haqq, 1995). A study of a North Carolina induction program provides an example of such a professional development intervention. This program required its participants to meet three hours each week in which novices hone classroom organization, management and instruction using feedback and student assessment data. Additionally, novices in this program meet in small groups to review observational data about their own teaching. The level of interaction among these novices, and their data-driven focus on instructional issues, suggests the program uses methods in concert with Hawley and Valli's (1999) professional development criteria. Unfortunately, the authors used only aggregate comparisons of program participants and a control group without focusing on how specific program components like those described above played a role on outcomes (Schaffer, Stringfield & Wolfe, 1992).

Overall, we know little about the effect on turnover of in-service programs intended for novices specifically. For instance, knowledge about how this component compares to the impact of mentoring or release time is unknown. The lack of information about this component may be due to that fact that it is indistinct from generalized professional development efforts, or to the predominant focus on mentoring in the induction literature. Moreover, high-quality, interactive professional development opportunities for novice teachers may be relatively rare. According to some observers, many induction programs ultimately yield interventions that do not grapple with important staff development processes, in particular the complex process of learning to teach (Feiman-Nemser, Schwille, Carver & Yusko, 1998).

Evaluation

Induction programs may offer both formative and summative evaluation of novices, with summative evaluations sometimes paired with statewide standards for teacher performance. Traditionally, mentors offer confidential instructional and emotional support to novices and do not participate in their formal evaluations (Villani, 2002). However, mentor participation in summative teacher evaluations is becoming more common as pressure for better teacher performance intensifies with the implementation of national and state accountability policies.

An example of a summative evaluation component in an induction program can be found in Connecticut's Beginning Educator Support and Training (BEST) program. BEST is a three year induction program that provides a range of supports to novices, as well as summative evaluation based on discipline-specific portfolios that novices develop through their time in the program. Mentors and novices structure their interactions, in part, according to Connecticut's curriculum framework and student achievement standards. Novices must successfully meet BEST performance standards to receive a permanent teaching license. The successful implementation and strength of BEST's evaluation procedures rest on the political climate in which the program was born, however – the entire program developed within a strong climate of accountability and systemic change within that state's educational system (Fisk, 1999).

Some experts raise concerns about the utility of mentors conducting summative evaluations because the process might undermine trust and collegiality, which are hallmarks of the mentor-novice relationship. For instance, Furtwengler (1995) observed

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that the high-stakes nature of summative evaluation was not, "congruent with the under girding philosophy of beginning teacher programs" (p. 8). Stanulis and Russell (2000) echo Furtwengler, explaining that trust between mentors and novices is essential, and that the relationship between these two teachers must be democratic if it is to function well. Stanulis and Russell state, "For it is only when mentoring becomes mutual and shared that equity can be achieved among all participants" (p. 79). Such views of mentoring are paralleled in studies that indicate that a mentor's most important qualities include the ability to share their time, thoughts and feelings, as well as be flexible, and have a sense of humor (Kyle, Moore & Sanders, 1999). While these behaviors and attitudes are not impossible to combine with the role of a summative evaluator, they do suggest the challenges that mentors may face when performing dual roles as evaluator and mentor.

Furtwengler's (1995) and Stanulis and Russell's (2000) analyses demarcate an important area of research that is unexplored in teacher induction studies. While these studies point out that novice evaluation, particularly summative evaluation, conflicts with the emotional and instructional support that induction programs intend to generate, neither of these authors, nor others who describe the role of evaluation in induction programs (e.g., Feiman-Nemser, Schwille, Carver & Yusko, 1999; Neal, 1992; Wilson, Darling-Hammond & Berry, 2001), make a clear empirical analysis of how evaluation relates to the retention of novices in induction programs, particularly vis-à-vis other program components. Some indication of this relationship might be inferred from studies of high stakes environments and their negative impact on teachers' professional development and turnover (Boardman & Woodruff, 2004; Wright, 2002). Nonetheless,

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the existing literature on induction programs provides few studies by which to verify such claims.

Schedule Adjustments

Programs that provide novices with schedules and other avenues for increased time to collaborate or plan, such as reduced teaching loads (either in the form of a smaller number of classes each day or a smaller number of class preparations required each day), are believed to give novice teachers the support they need to enhance their instruction, develop their discussions about teaching and learning with other school staff, facilitate their reflection about practice and open more avenues for professional growth. While such scheduling is frequently proposed as an important component of induction programs, it is rarely provided to novice teachers (Howey & Zimpher, 1999). Local mandates for reduced teaching loads are rare, and statutory language at the state level to support release time from teaching is seldom apparent (AFT, 1998). As a result, there is little direct evidence in the literature on teacher induction that clearly identifies the relationship between this component and a given outcome for beginning teachers. In this sense, it should come as no surprise that arguments for reduced teaching loads are based less on empirical evidence than on rational arguments and strong personal beliefs (e.g., Curran & Goldrick, 2002; Stansbury, 2001).

Justification for the provision of release time often relies on earlier research that ties opportunities to communicate professionally with a range of teacher benefits. For instance, opportunities for greater principal involvement and sustained administrative support of teachers, both necessary for effective staff development (Gordon & Nicely,

1998), increase when release time is available to teachers. Similarly, opportunities for collaboration increase when release time is available, and this collaboration enables teachers who share similar responsibilities (e.g., teachers in the same subject area) to grow in concert according to their shared professional needs (Little, 1999). Thus, local policies that offer teachers release time open multiple avenues to teacher success, but the research literature does not address the outcomes of these avenues in relation to induction programs.

Another support mechanism aimed to enhance novice teacher interaction is the allocation of common planning time. There are few studies focused on common planning time specifically, although one recent study examines it among other interventions intended to reduce turnover among science teachers (Fong, 2003) and another as part of a larger professional development model (Melnick & Witmer, 1999). Thus like other induction components, with the exception of mentoring, knowledge about common planning time must be assembled from studies that are only indirectly related to induction. Nonetheless, across the two studies just mentioned, it is clear the opportunities for teachers to meet and plan together is advantageous for at least two reasons. First, common planning time is associated with lower teacher attrition (Fong, 2003) and, second, it is viewed as more favorable by teachers than other team-oriented professional development (Melnick & Witmer, 1999).

Portraits of Programs

So far I have considered the individual components of induction programs but have not yet described how these components come together to form whole programs.

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Many program administrators and educational researchers have written about induction

program origins, design, and participants, and, to a lesser extent, program effects (e.g.,

Fideler & Haselkorn, 1999; Koppich, Ashner & Kerchner, 2002). These reports provide

examples of how programs assemble different components into different program forms.

Because the intention of these reports is to promulgate knowledge of "quality" programs

or to demonstrate the success of a policy, they tend to focus on successful programs.

Consequently, the picture they paint of induction programs is likely to be more reflective

of the more highly developed and supported programs across the country.

One such portrait emerges from California's efforts to create a network of support

programs for new teachers. Pearson and Honig (1992) explain that the challenges faced

by California's novice teachers were compounded by new educational reforms and

demographic changes that introduced both higher expectations for teacher performance

and a more diverse student population with different academic and instructional needs. In

response, policymakers and legislators created the California New Teacher Project

(CNTP) in 1988. It piloted 37 New Teacher Projects throughout the state, for 3,179

participating teachers, between 1988-89 and 1991-92. The individual projects developed

and implemented new methods of teacher support, including novice teacher orientation

and related university coursework. Projects varied slightly from district to district. Some

projects used computer networks to provide greater interaction among novices and

mentors. Other assistance included team meetings, stipends for mentors and time for

novice teachers to observe expert teachers. Reduced schedules were less common but in

some districts these were provided to facilitate novice support.

California's early concentration on, and state investments in, induction programs has helped to integrate the programs into larger networks of staff development providers across the state. Consequently, Beginning Teacher Support and Training (BTSA) programs in California are among the most developed and successful programs nationwide. Among them, the University of California at Santa Cruz (UCSC) New Teacher Center has developed the Santa Cruz New Teacher Project (SCNTP). SCNTP is a consortium of school districts and education-related organizations led by the University of California, Santa Cruz. The SCNTP seeks to create reflective practitioners who attend to social and cultural realities of their classrooms while focusing on improving classroom practice.

The model provides both support and formative assessment for new teachers. The support components include a mentor (the "New Teacher Advisor") who meets weekly with novices to coach them, provide emotional support, assist in short- and long-term planning, demonstrate lessons, and prepare novices for formal evaluations. Monthly seminars help groups of novice teachers understand and apply California teaching standards by facilitating their collaboration. The program also provides release time for novices to observe master teachers or participate in other professional development. The SCNTP has been highly successful; its graduates continue to work with new cohorts of mentors, sustaining important knowledge of the induction process over time (Gless & Moir, 2002). The SCNTP has served as a model to other induction programs around the country.

Although California provides a powerful example of statewide intervention and support to build a novice teacher induction program, other programs have successfully

emerged *without* statewide coordination and funding. For example, Koppich, Ashner and Kerchner (2002) explain the success of Rochester, New York's induction program, which lacks the kind of state involvement available in California.[1] These researchers use information from interviews and on-site observations, as well as summative data on teacher turnover rates, to illustrate the strengths of the Rochester Career in Teaching Plan (CTP). The report details how various components of the CTP are intended to function and provides interviews of novices and program staff to support their contention that the CTP is meeting its staff development and retention goals.

Specifically, the CTP provides novices with comprehensive mentoring support, sets forth criteria for mentor selection, undertakes mentor evaluation and support, and ensures that program goals are clear to all participants. A program administrator, who observes novice teachers and mentors alike throughout the Rochester school district, coordinates these program functions. While Koppich, Ashner, and Kerchner (2002) provide substantial amounts of descriptive information, they provide little information about how the larger population of CTP program participants faired over time – only aggregated univariate statistics on teacher retention are provided, though their reported results do suggest that CTP has a positive effect on retention (Koppich, Ashner & Kerchner, 2002). Their report is suggestive of the program's promise but falls short of a convincing program evaluation, in part because it lacks important methodological information necessary to assess the validity and reliability of the study.

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[1] New York pilot induction programs for first year teachers will not be implemented statewide until 2004-05.

As a whole, the literature describing exemplary programs provides insight into the *rationale* for and *potential promise* of induction programs. It describes several common program components, provides examples of how they fit together and often characterizes the policy environment from which programs emerged. The literature also suggests that high retention rates (while not reported with methodological rigor) are associated with participation in an induction program. While the descriptive statistics provided in these accounts are analytically and methodologically limited, they often provide at least a consistent impression that induction programs have various benefits. While these are promising results, their confirmation requires more rigorous investigations and a consideration of how programs function with different types of novice teachers working in various school settings.

Induction Programs and Teacher Turnover

Although empirical research on teacher induction programs dates from as early as the 1960s (e.g., Johnson, 1969), the field of research does not yet offer a strong set of conclusions about the effects of induction programs and the generalizability of effects across multiple populations of novice teachers and school sites. Few studies use a common methodological approach that might aid in comparing and compiling program effects. Moreover, with few exceptions, studies often refer to small individual programs and small samples of teachers that constrain the results of these studies to the conditions unique to the sites examined. The range of analytic methods and samples utilized in teacher induction research may stem from the absence of coordinated research agendas at

the national level.[2] Thus, it is difficult to find across these studies comparable results that might complement one another and build a larger and more integrated understanding about program effects.

Nonetheless, across these diverse studies there is growing evidence to suggest a positive relationship between participation in induction programs and lower rates of teacher turnover (e.g., Charles A. Dana Center, 2001; Fideler & Haselkorn, 1999; Henke, Chen & Geis, 2000; Huling, 1998; Ingersoll & Kralik, 2004; Kirby & LeBude, 2001; Odell & Ferraro, 1992). Although the evidence for these effects is far from conclusive, largely because so many studies suffer from methodological flaws, the pattern of results is sufficiently consistent to warrant additional, and more rigorous, investigations of induction programs and their effects on teacher turnover.

While I focus my critical review on studies of induction programs and teacher turnover, other studies of induction programs examine different outcomes, including student achievement and beginning teachers' attitudinal, affective, and instructional responses to program interventions (e.g., Blackburn, 1977; Brooks, 1986; Chester, 1992; Fletcher, Strong & Villar, 2004; Gratch, 1998; Gregson & Piper, 1993; Klug & Salzman, 1991; Schempp, Sparkes & Templin, 1993; Varah, Theuene & Parker, 1989). The studies included in my critical review represent a range of program forms and an array of author motivations and expertise that capture the existing literature on induction programs and teacher retention. Omitted from review are studies that emphasize descriptive accounts of

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[2] For instance, only in the past few years has a Research on Teacher Induction SIG been formed at the American Educational Research Association.

program design or studies that utilize weaker methodologies in examining program effects on turnover (e.g., Honigman, 1970; Huling, 1998), and studies that examine very specific sub-populations of teachers (e.g., Kirby & LeBude, 2001). I begin my review with a discussion of studies that focus on relatively small samples of teachers, usually limited to a local induction program; I then proceed to a discussion of studies that involve larger samples of teachers and multiple induction programs.

Studies of Induction Program Effects on Teacher Turnover

Spuhler and Zetler (1995) examined rates of turnover among 35 beginning Montana teachers who received one-on-one mentoring. Their study indicated that retention rates among mentored novices were about 20 percentage points higher than a control group of non-mentored novices, both one and two years after the study began. While these findings are promising, Spuhler and Zetler's study suffers from the same limitations that characterize most evaluations of local induction programs: the study's small sample severely limits the generalizability of findings. Furthermore, the study's control group was selected from schools different from those in which the mentored teachers worked, a problem that frequently occurs in small studies with limited options for constructing control groups. The process of control group selection used in this study raises the question of whether different organizational conditions bias the differences in retention between these two groups of novice teachers. The small sample size also prevents the study from systematically accounting for individual or organizational factors in estimating turnover rates.

Cheng and Brown (1992) studied two cohorts of beginning teachers in Toronto who participated in a one-on-one mentoring program. Although these investigators used a control group, they were not able to create a matching control group of novice teachers; rather, the control group included teachers with significantly more teaching experience than the group of novice teachers who received mentoring, making the results from the study inconclusive because of this potential bias. The authors reported, nonetheless, that teachers receiving some form of induction support were more likely to choose teaching as a career a second time, while teachers in the control group were more than twenty percent less likely to do so.

Odell and Ferraro (1992), whose research is widely cited in reviews of induction programs literature, made longitudinal measurements of two successive groups of elementary teachers who received one year of weekly, non-evaluative mentoring. Mentors who participated in the study each worked with several novices; they were released entirely from their teaching duties to provide support and received weekly training from a participating university. Odell and Ferraro found that 96 percent of new teacher program participants remained in their teaching positions four years after the beginning of the program, although this estimate does not reflect the 18 percent of participants who were unreachable at the end of the study. While the study is cited widely as supportive of the positive effects of induction programs, the study did not utilize a control group or take advantage of multivariate statistical methods to examine how teacher or organizational characteristics influence the program's effect. Moreover, Odell and Ferraro provided very little information about the program's setting, making it difficult to assess the study's external validity.

In a more recent study, Eberhard, Reinhardt-Mondragon and Stottlemeyer (2000) conducted a cross-sectional analysis of 228 teachers with three or fewer years of experience, half of whom had mentors. The authors discovered that the benefits of mentoring were greatest during the initial years of teaching. Mentored teachers were generally more likely to report an intention to return to teaching, although by their third year, mentored and un-mentored teachers reported nearly equal intentions to remain in teaching (Eberhard, Mondragon & Stottlemyer, 2000). The authors also discovered that teachers reporting more than one contact hour per week with their mentors were more likely to plan to remain in teaching than teachers with less than one contact hour, though the benefits of additional contact time were not apparent when teachers received more than three hours of weekly contact (Eberhard, Mondragon & Stottlemyer, 2000). These results suggest that benefits of contact time with mentors may have an upper limit.

While Eberhard, Reinhardt-Mondragon and Stottlemyer (2000) take their analysis of teachers in induction programs farther than many other program evaluations, their study is limited for several reasons. First, the authors present descriptive and bivariate statistics without reference to any statistical tests for group differences. While the sample and cell sizes utilized in this study seem large enough to assume that some statistically significant differences exist, the authors do not report the statistical significance of their findings. Second, the authors do not clarify how the sample chosen for this study compares to the larger population of beginning teachers, making it difficult to speculate about the generalizability of their findings. Third, the authors do not make clear what "mentoring" entails for teachers who received it, making it impossible to ascertain what aspects of program design might be beneficial to novices.

Similarly, many reports of retention rates for local induction programs are highly supportive of induction programs but provide little evidence of statistical rigor that would ensure the reliability of the results. For instance, Fideler and Haselkorn's (1999) summary of a Las Vegas, NV, program claims that, "the program has already proved effective in boosting novice teacher retention, which has reached 96%" (p. 201). They described retention in a Los Angeles program similarly, "retention from the five most recent cohorts averaged 87%" (p. 295). While by most standards these retention rates are impressive, the period of time these rates refer to, or for whom, is unknown. These statistics were used in conjunction with descriptions of program design and anecdotes from program participants to bolster the authors' claim about the positive effects of induction programs, but without additional methodological detail the report provided only circumstantial evidence that induction programs reduce teacher turnover.

Larger scale studies tend to provide more convincing evidence of program effects, though these studies may also suffer from methodological limitations. For example, in another study of Texas novice teachers, the Charles A. Dana Center for the Texas State Board of Educator Certification (2001) used data from over 2,500 teachers to examine turnover rates for teachers participating in the Texas Beginning Educator Support System (TxBESS). TxBESS provides two years of support to novices to reduce attrition and enhance professional expertise. These programs adhered to three TxBESS design guidelines: they used formative evaluation data that were tied to state performance standards; they provided novice teachers with a support team consisting of a mentor, an administrator, and a representative from an educator preparation program; and they provided training to mentors and other staff who evaluated and supported novice

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teachers. About 88 percent of teachers who participated in the 2000-2001 school year

TxBESS program remained in teaching, a rate about seven points higher than the overall

retention rate for beginning Texas teachers (Dana Center, 2001, p. 7).

The Dana Center's report, while one of the most thorough investigations of a

statewide induction program, has several methodological shortcomings. First, the

evaluation design does not include a control group and the analysis did not control for

teacher, school or district characteristics that might influence the effects of participation

in induction programs. For example, while the authors offer comparisons of the TxBESS

analytic sample and the general population of Texas teachers, some participants worked

in "exemplary districts" while others did not. Without controls for variations in district

quality, it is difficult to know whether the effects measured derive from district or

program quality. Second, the response rates in surveys of program participants were less

than fifty percent (a reasonable response rate for surveys of this type but one that likely

increases response bias). Third, while the Dana Center report presents extensive

descriptive information about TxBESS, the analysis does not provide a sense of how

program effects may have varied by teacher and school characteristics.

An examination of induction programs in California offers similar indications that

induction programs reduce teacher turnover. Pearson and Honig (1992) use a variety of

quantitative and qualitative data from 37 different induction programs in California to

report that retention among novices was, over a two year period, 87 percent overall and

as high as 91 percent in urban districts. Although these results suggest promising

outcomes of new teacher induction programs, the study design did not establish clear

links between induction experiences and the subsequent retention of teachers.

Broulliet (1987) found no significant differences in plans to remain in teaching between teachers who participated in a Washington State mentoring program and those who did not, but 74 percent of the participants also indicated that over the course of an entire year they were able to observe mentors teaching only two or fewer times. This may indicate that participants had modest or minimal opportunities to collaborate with their mentors. Unfortunately, the Broulliet study does not provide sufficient information about either the frequency or quality of interactions that novice teachers had with their mentors.

Finally, and in contrast to most other studies of new teacher induction, two studies use national survey data collected by the U.S. Department of Education to investigate relationships between induction program support and turnover. Henke, Chen and Geis (2000) examine a "teacher pipeline" that represents college graduates' careers in teaching. Their report, which uses data on participants in the 1993 Baccalaureate and Beyond Survey (BBS), indicates that about 15 percent of teachers participating in induction programs leave teaching, while teachers outside such programs leave at the rate of 27 percent. Moreover, teachers participating in induction programs are less likely than teachers not participating in induction programs to leave the profession because they are "not interested" in, or are dissatisfied with, teaching. While this study is characterized by more statistical rigor than other studies reviewed above, the study does not differentiate between different types of induction experiences among participating teachers.

Using the 1999-2000 Schools and Staffing Survey (SASS) data, Smith and Ingersoll (2004) improve the measurement of induction support by utilizing data that measure several components of induction programs available to teachers, and then relate these improved measures to teacher retention data. The authors examine the role that first

year supports had on retention: mentoring, "collective induction activities" such as common planning time, and the role of extra resources, such as extra classroom assistance. Their results showed that having a mentor working in the same field as the novice reduced the likelihood of attrition by about 30 percent and that common planning time reduced attrition by about 44 percent, but that administrative support was not associated with reduced attrition rates. Smith and Ingersoll also examined the impact of several areas of general professional development activities on new teacher retention (e.g., participating in a network of teachers) and found that they also reduced the likelihood of attrition. Finally, these authors used SASS data to create various "packages" of induction support – *a priori* combinations of elements of induction programs they assume to be productive forms of induction support. Using these packages as units of analysis, the authors found that new teachers who experience more components of support in combination are less likely to leave the profession. These authors' research on teacher induction stands as one of the most thorough empirical examinations of induction support to date because it uses a large representative dataset and measures of induction support that identify specific types of supports for novice teachers. Nonetheless, despite these advances, the study does not consider how program effects might vary with different contextual and teacher background characteristics.

Taken as a whole, studies of new teacher induction programs suggest that there is a pattern of higher retention rates among novices who participate in them. However, this pattern needs to be interpreted within the frame that methodological weakness hinders the results of most studies. Analyses of programs indicate that turnover rates among induction program participants are usually less than 20 percent over the course of one

year, while reported turnover rates among teachers not participating in programs range between 25 percent (Wisconsin Department of Public Instruction, 1998) and 88 percent (Dana Center, 2001). Most studies, however, rarely use control groups, many rely on relatively small samples of teachers, and few incorporate statistical controls to rule out the possibility of selection bias. Many studies of program effects also typically focus on individual induction programs without using standardized measures of induction programs, making comparisons across studies difficult. Finally, it is exceptionally rare to find studies that examine the potential moderating role that teachers' background or school context might have on the impact of induction programs. With the exception of recent research that utilizes national survey data (Smith & Ingersoll, 2004), the extant literature is largely circumstantial and void of systematic, rigorous investigations of induction program effects. To expand and improve research on induction programs, increased attention to the context of the programs, and the background of the novices who participate in them, would permit for more insightful and penetrating analyses of their effects.

The Importance of Teacher, Normative and Organizational Characteristics for Induction Programs

There is very little research that examines specifically how induction experiences may vary with organizational settings or teacher background, even though there is a substantial literature that suggests such factors influence the likelihood that beginning teachers will persist in the profession. A rich and multifaceted body of research (e.g. Rosenholtz, 1991; Hamilton & Richardson, 1995; McLaughlin & Talbert, 2001) has

demonstrated that teacher development efforts, of which induction programs are an integral part, are influenced by individual and organizational conditions. Some of these factors involve teachers' normative climate established in a school, such as the levels of collegiality or professional commitment; still other factors involve the characteristics of teachers and the organizational settings in which teachers work, such as whether teachers work infield or work in high poverty schools. Feiman-Nemser, describing teacher development between the pre-service and in-service phases of the teaching career, writes that, "Educators still have to figure out how to help novices connect the 'text' of their pre-service program to the 'contexts' of contemporary classrooms" (Feiman-Nemser, 2001, p. 1026). Such a view suggests that the effects of induction programs may be contingent upon personal and organizational factors that shape novice teacher's experiences in classrooms and schools.

Given the possibility of these interactions, it is possible to situate studies of induction programs into broader frameworks of research that consider the effects of various individual and contextual factors on teacher development. Moreover, even if these factors do not moderate the effects of teacher induction programs, it is important to consider which teacher and organizational characteristics to include as controls in estimating the effects of teacher induction programs on teacher retention. Therefore, in this section, I briefly examine research about three types of factors that may influence the education experiences of novice teachers and the effects of induction programs: the normative structure of schools, organizational characteristics of schools, and teachers' personal and professional backgrounds.

Researchers use different terms to describe the kinds of normative characteristics that facilitate teacher development, but they share an understanding that school-wide teacher relations are powerful factors in developing teacher knowledge, skills and professional relations. Feiman-Nemser (2001), addressing the need to develop a continuum of learning throughout teachers' careers, commented on the taxing social conditions that many new teachers encounter in public schools, such as low morale and restricted teacher interactions. She described the impact of these negative conditions as causing new teachers to lose their ideals or lower their expectations for student learning. Other researchers describe *professional communities* in schools (Bryk, Cambrun & Louis, 1999; McLaughlin & Talbert, 2001), professional *culture* (Kardos, 2002; Liu & Kardos, 2002), or communities *of practice* (McLaughlin, 2003; Palinscar, Magnusson, Marano, Ford & Brown, 1998) as normative structures of schools that profoundly shape teachers and teaching. Much of this research typically takes the perspective that certain normative aspects of schools may enhance or abate teachers' professional values and performance.

In exposing the importance of social interactions on teachers' development, these researchers indirectly validate one rationale of induction programs – assisting novice teachers' transition into local school communities. The body of research on teachers' normative climate also suggests potential factors to consider in understanding induction program effects, since induction programs often have as a goal helping new teachers adjust to the normative climate of school. Specifically, research focuses on three elements of normative climate that may impact the ability of new teachers to adjust to their new work environment: collaboration, commitment, and participation in decision-making. I

discuss research describing the impact of these elements of the normative climate of schools on staff development efforts below.

Collaboration

One normative construct related to teacher development is the degree of collaboration teachers feel in their work environment. Rosenholtz (1991) defined collaboration as a faculty's "requests for and offers of collegial advice and assistance" (p. 41). Collaboration can take many forms. For instance, collaboration may include direct feedback about instruction as well as subjective interpersonal exchanges between teachers and administrators, which in turn may promote a cooperative and more supportive working environment (Firestone & Wilson, 1985; Rosenholtz, 1991). When collaboration pervades the relations among teachers in a given school, new ideas, fresh perspectives and enhanced collective knowledge emerge (Rosenholtz, 1991). Teachers' cooperative decision-making and team teaching are other forms of collaboration, which may increase opportunities for teachers to contemplate the complexity of their work and discover ways to resolve instructional problems together. Based on these observations, scholars of teachers' professional communities argue that the degree of collaboration in a school is an important factor in the professional socialization of beginning teachers (Grossman, Wineburg & Woolworth, 2000; Hamilton & Richardson, 1995; Johnson, et al., 2001; McLaughlin & Talbert, 2001).

What is apparent across these studies is that when collaboration is frequent, staff development is generally promoted because teachers have more opportunities to interact in ways that are likely to help improve their instructional practice. When novice teachers

work in truly collaborative environments they may benefit from supportive working

conditions that undermine conventional norms and other organizational factors known to

be stressful and isolating for novice teachers. In this sense collaborative environments

can also play a role similar to induction programs. Nonetheless, the effect of

collaborative environments on induction programs is unknown. Such environments may

enhance and strengthen the effects of induction programs or they may make induction

programs less important in the beginning experiences of teachers.

Commitment

Teachers' commitment – defined generally as an individual teacher's "linkage"

(Reyes, 1990, p. 143) or attachment to teaching as a career – is also associated with the

success of staff development and teachers' work. Firestone and Pennell (1993) argue that

teacher commitment is a necessary component of sustaining professional practices in

schools. Higher teacher commitment bolsters teachers' dedication to learn and implement

new instructional techniques. When commitment is in *short* supply, teachers are less able

to move beyond self-concerns (e.g., managing unruly students) toward core instructional

tasks. They are, in Rosenholtz and Simpson's words, limited to the "boundaries of the

teaching role" (1990, p. 242-243), and consequently left to struggle with basic survival

skills.

While there is little direct research on how colleagues' levels of commitment

influence the transition of novice teachers into the workplace, the research just described

suggests that novices would benefit from working in environments with high levels of

commitment. Veteran teachers with high levels of commitment may display greater

confidence in their ability to teach students and be more engaged in all aspects their

schools. On the other hand, such high levels of commitment among experienced teachers

may signal, "reflexive conservatism" (Lortie, 1975) that leaves novices isolated and

practicing routine behaviors that sustain the very problems induction programs are

intended to address. Similarly, highly committed, and tightly knit veteran communities

may communicate expectations that novice teachers find intimidating, especially if they

have doubts about their own ability to perform at levels comparable to veteran teachers or

have teaching philosophies divergent from a nucleus of committed staff.

Decision-making

Along with schoolwide collaboration and commitment, teachers' participation in

school-wide decision-making relates to greater opportunities for engaging in the school

community and improving teaching practice. Little (1999) observes that supplying

teachers with more authority in school decisions enables them to "take charge" of their

own learning. When teachers engage in greater levels of decision-making activities they

open their daily work to their colleagues' expertise and to resources outside the school

that may encourage better staff development. Sawyer (2001) viewed teachers'

participation in decision-making as directly related to their staff development because

such participation constituted an authentic teacher-based solution to instructional issues

that stood in contrast to issues dictated by administrators when teachers are not involved

in decision-making. From this perspective, when teachers take on decision-making roles

they come to shared instructional goals more easily and develop a greater capacity for

personal growth.

In summary, certain aspects of teachers' normative climates are known to influence staff development and the nature of teachers' worklife; these factors may also influence the experiences of novice teachers and the effects of induction programs. Because high levels of collaboration, commitment, and teachers' participation in decision-making may be more likely to encourage teachers to remain in schools, it could be inferred that these elements of teachers' normative climate may also support positive outcomes of school induction programs. However, there is little direct research evidence to support or refute this claim.

Organizational Characteristics of Schools

Several organizational characteristics of schools also relate to the success or failure of teacher development efforts and influence the experiences of teachers in the workplace. For example, research (e.g. Bryk & Driscoll, 1988; Reyes, 1989; Lippman, Burns & McArthur, 1996; Terry, 1997) suggests that organizational characteristics such as school size, grade structure, class size, urbanicity, family income, and student discipline influence the experiences of teachers in general and may influence the induction of novice teachers in particular. The first three of these factors are associated with the organization of teachers' worklife; the latter three factors are organizational characteristics that often relate to the level of demand and stress placed upon teachers.

School Size, Grade Structure, and Class Size

In general, larger school sizes are associated with lower levels of teacher collaboration and commitment. For instance, Bryk and Driscoll (1988) discovered that

smaller schools have more cohesive professional cultures than larger schools. Similarly, higher levels of teachers' commitment have been associated with smaller district size (Reyes, 1989). Since Roseholtz (1989) makes clear that normative conditions like commitment are essential to quality workplaces, it follows that larger schools might have environments that counteract the positive impact of induction programs and make it more difficult to connect novice teachers positively to the workplace. In contrast, the likelihood for enhanced collaboration and commitment in smaller schools may reduce teacher isolation.

A related factor is the grade structure of the school in which teachers work – that is, whether novice teachers begin their teaching career in elementary or secondary schools. Secondary schools tend to be larger than elementary schools, making it more difficult for faculty to develop positive professional relationships that in turn might undermine induction program outcomes. Moreover, in secondary schools, important aspects of the teachers' worklife are more likely to be departmentalized, whereby teachers work in English or math departments, for instance. While there are organizational advantages to departmentalization, such structures are associated with bureaucratic controls (e.g. varying evaluation procedures and curriculum usage protocols) that undermine more communal forms of organization in schools (Lee, Bryk, & Smith, 1993). Although grade structure is one of the most common characteristics of the organization of schools and teachers' worklife, very few studies have sought to determine how grade structure influences the initial experiences of novice teachers, in particular their experiences in teacher induction programs.

Like the grade structure of schools, school size and enrollment issues receive great attention from policymakers and educational researchers. Schools with large enrollments create more complex administrative arrangements and procedures for students and teachers to follow, increase the likelihood for teacher isolation, and have higher-than-average rates of teachers without full certification (Lewis, et al., 1999). For example, Terry (1997) directly links staff development to school size. Terry finds that larger schools inhibit staff development, in particular teachers' ability to cope with the demands of classroom management, lesson planning and instruction. The range of effects that school enrollments seem to produce, particularly their effects on staff development and performance, suggests that school enrollments may be a key factor in understanding induction program outcomes.

Urbanicity, Poverty, and Student Discipline

Novice teachers who work in urban schools often face a unique and powerful confluence of challenging circumstances. For instance, urban schools generally have above average proportions of students receiving free or reduced lunch, students from single-parent families, and students who are English language learners. Urban schools also often have fewer instructional resources, larger bureaucracies, and higher rates of student and community violence than other schools on average (Lippman, Burns & McArthur, 1996). In one survey of California teachers, Harris (2002) found that teachers working in high-poverty, high-minority schools were more likely to contend with unacceptable working conditions such as inadequate facilities, low quality textbooks and

supplies, little administrative support, and larger class sizes. Teachers in this survey who perceived their working conditions as poor were more likely to leave their school earlier.

Compounding poverty's impact on teachers' commitment schools with high poverty rates also often have higher levels of schoolwide disciplinary problems (Haberman, 2004). Ingersoll (2001) found that teacher reports of discipline problems were associated with a 23 percent increase in teacher turnover, and that student discipline problems were cited almost twice as often as reasons for attrition in high-poverty urban schools than in schools overall. Novice teachers struggling to develop their instructional skills in low-income schools with stressful disciplinary climates may find induction programs to be more valuable, but they might also find that the programs do little to counterbalance the strong negative conditions common in these schools.

Overall, research suggests that organizational characteristics such as school size, grade structure and poverty levels have a considerable impact on staff development and teacher attrition. Because induction programs are established to help new teachers develop professionally and remain in the field of teaching, this body of research points to key organizational variables that may impact the outcomes of teacher induction programs. To date, however, no research has directly linked specific school organizational characteristics to induction program outcomes.

Teacher Background

A rich body of qualitative data describes how practicing teachers acquire professional knowledge (Wilson & Berne, 1999). These studies often refer to teachers' narratives or discourse about subject matter (e.g., Florio-Ruane, 1994; Roseberry &

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Warren, 1998), student learning (e.g., Carpenter, Fennema & Franke, 1996) and

instruction (e.g., Pennel & Firestone, 1996) to illustrate how teachers develop knowledge

needed to perform instructional tasks. Other studies examine teachers' beliefs and current

practices that are impacted by their own earlier school experiences. For example, research

conveys the importance of individual teachers' experiences and background and how

these characteristics affect their present decisions about instructional methods and their

understandings of teaching as a profession (e.g., Bullough, Knowles & Crow, 1991;

Cohen, 1991; Kagan, 1992). Although teacher background encompasses a wide range of

factors, I focus on two sets of factors: teachers' personal characteristics and teachers'

professional qualifications because they help to identify whether programs are

implemented equitably and if implementation is associated with teacher qualifications.

Under the first set of factors, I consider teachers' gender, minority status, and age; under

the second set of factors, I consider teachers' education and preparation for their current

teaching assignment.

Gender, Minority Status, and Age

Earlier research has not systematically related teachers' sex, minority status and

age to induction program effects. These variables are common correlates of teacher

turnover (Weiss, 1999), and of the grade structure and schoolwide poverty levels that

teachers are likely to work in (Henke, Choy, Geis & Broughman, 1996). Furthermore,

while these teacher characteristics are omnipresent in educational research, neither has

been utilized as a statistical control in quantitative studies of induction programs. One

might expect, for instance, that minority teachers are less likely to have access to

induction programs because they are more likely to teach in impoverished schools, or that female teachers' predominance in elementary schools relates to induction program effects for this group.

The research base on the role of teachers' age in staff development provides inconclusive results about the relationship between these two phenomena. For instance, Guyton, Fox and Sisk's (1991) investigation claims that older, non-traditional teacher candidates and candidates entering teaching through traditional paths differ little in terms of their acceptance of new instructional practices, although the older candidates in their study had higher retention rates. In contrast, research on induction programs shows that younger teachers are often more willing to experiment with new techniques while veterans are less likely to do so (Fideler & Haselkorn, 1999). While results are inconclusive across these studies it is apparent that teacher age should figure importantly in descriptions of program implementation and effects.

Education and Preparation for Current Assignment

Research has found that teacher education and certification status impact teachers' instructional outcomes, particularly in terms of student achievement. Although the research base on out-of-field teaching is generally limited to descriptions of its occurrence (Ringstaff & Sandholtz, 2002), there is some evidence that out-of-field teachers – those teachers whose teaching certificates do not match the subjects they teach – are more likely than other teachers to find it challenging to improve their teaching. Little (1999), clarified the great importance of matching new teachers to teaching assignments that promote their professional development; such assignments carefully

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consider a novice's knowledge and experience, such as their area of certification. In the same vein, Hawk, Coble and Swanson (1985) found that out-of-field teachers were more likely to have poorer instructional skills than infield teachers. In terms of their subject matter preparation, teachers who hold a master's degree in their teaching assignment are more able to select and structure the content and pedagogy of their lessons (Shulman, 1988). In short, the knowledge teachers acquire in certification programs, and through acquiring advanced degrees, prepares teachers to better gear their instruction to curriculum standards and improve student achievement. Based on this research that suggests a link between teacher education certification status and positive teacher outcomes, it seems possible that induction program goals may have some ties to the type of certification and content preparation that novices bring to their first teaching experiences.

Conclusion

Policymakers and researchers devised induction programs as a response to widespread calls for education reform and calls for greater accountability in teacher quality. On a different level, induction programs also grew out of concerns about beginning teacher turnover. Thus, the programs have been designed to serve a variety of purposes without systematic reviews of how they might fit into larger education policy frameworks.

Many different program forms resulted in response to the difficult working conditions novices experience, and many states have policies that encourage or require the local implementation of programs. The literature on induction programs suggests that

more developed and successful programs seem to make improvements in teacher

retention, although results in many studies are typically less reliable due to their designs,

making the induction literature inconclusive about which components or program forms

are most important. What is salient is that none of these studies compares program effects

across different groups of novice teachers or across different types of schools, nor do they

utilize more sophisticated research methodology (such as regression) to model group

differences or relationships contingent on normative, organizational or teacher

characteristics. Consequently, the results from these studies overall do not provide a

deeper understanding of program effects.

Two general shortcomings of the induction literature may explain why less is

known about the programs' effects – those that are programmatic and those that are

methodological. Programmatic shortcomings include mentor teachers who pay only lip

service to their role. For instance, critics of induction programs have pointed to feigned or

artificial relationships quite different from the true collaboration and support that

programs should foster (Hargreaves & Dawe, 1990). Program failure might also occur

due to the lack of teachers' commitment to new programs or reforms. Because the

individuals in administrative roles are often isolated from the schools and teachers for

which they create teacher programs and policies, their resulting interventions sometimes

receive chilly receptions from staff at the school level (Elmore & Sykes, 1992).

Methodological shortcomings of induction program research, such as the frequent use of

unrepresentative samples, invalid measures of all aspects of induction programs, and

proxy measures for turnover (e.g., intentions to stay), also prevent observations of

stronger program effects. Such limitations are evident in all but the most recent research on induction (e.g., Smith & Ingersoll, 2004).

Research on the normative, organizational and individual correlates of staff development points to important variables that might be useful in efforts to improve our understanding of induction program effects. The benefits of positive normative conditions like collegiality and organizational conditions, and positive organizational conditions like smaller enrollments, may alone promote teacher retention. These variables have not been used in quantitative analyses of induction program effects; their application in this study advances induction programs research.

In short, the literature on teacher induction programs circumscribes areas of knowledge that need to be developed. In an effort to develop these areas, this study will:

Develop a description of the distribution of standard induction components and their most frequent combinations;

Develop additional empirical evidence of the relationship between induction program effects and turnover; and

Examine how normative, organizational and individual variables interact with program effects.

In the following chapter I describe in detail how I use data from the 1999-2000 Schools and Staffing Survey to create various measures of teacher induction programs, teacher turnover, and normative, organizational and teacher characteristics. I also describe how I to use these measures in descriptive and inferential multivariate analyses of teacher induction programs and their effects on beginning teacher turnover.

CHAPTER III

METHODOLOGY

The purpose of this study is to describe the nature and distribution of

induction program components among public school teachers and schools,

examine the relationship program components have with teacher turnover, and

describe how certain teacher, normative and organizational factors moderate

induction program effects on turnover. The problems new teachers experience in

public schools, and the purposes of induction programs, frame this dissertation

as a policy study that seeks to improve knowledge of how induction program

components function for different demographic and professional groups of

teachers in various normative and organizational contexts. As a policy study, my

research design explores the possible effects of different components of induction

programs in policy-relevant contexts. Policymakers may find these results useful

in designing induction programs and in considering factors that influence

induction program effects on teacher turnover.

In this chapter I describe the steps I take to utilize a large, nationally

representative dataset for this study's purposes. Specifically, I use data from the

1999-2000 Schools and Staffing Survey (SASS), which includes measures of

several components of induction programs that have not been collected

nationally before. The methodology that I present in the following sections

addresses the following research questions:

(1)   What induction components are most prevalent and what are

their distributions among different demographic or professional

groups of teachers in different organizational contexts?

(2)   What is the relationship between induction program

components and teacher turnover?

(3)   How does the relationship between different components of

induction programs and teacher turnover vary for different

demographic or professional groups of teachers in different

school settings?

In the remainder of this chapter, I present a detailed description of the

dataset and the analytic sample that I use in this study. I then include a detailed

description of the analytic variables pertinent to this study and how I

operationalize them. My description of these variables is followed by an outline

of my analytic procedures, and a comment on this study's limitations.

Data and Subjects

I use data from the U.S. Department of Education's 1999-2000 Schools and

Staffing Survey (SASS) to answer my research questions. SASS data, which were

collected for the first time in 1987-88, constitute the largest and most

comprehensive set of survey data on teachers, and the characteristics of the

schools in which they work in the United States. They are an excellent resource

for examining teacher induction because they offer specific information on first-

year working conditions – collected nationally for the first time – that are

typically components of induction programs. SASS also collects data on teacher

background, teacher behaviors, and teacher beliefs, among other data.

SASS Data

The SASS utilized several instruments, notably a teacher and school

questionnaire. All SASS questionnaires undergo a lengthy and rigorous

development process, which includes expert review panels, focus groups,

cognitive interviewing and field tests. The teacher questionnaire is attached as

Appendix A. The teacher questionnaire collects most of the data used in this

study. Data related to my primary analytic focus, induction support, come from

a subset of questions (Items 22-26 on the teacher questionnaire in Appendix A)

asked of teachers whose first year of teaching began in 1994-95 or later. These

items, referred to as *induction variables*, include dichotomous variables measuring

whether or not a novice teacher participated in a formal induction program,

whether a novice received reduced preparations or class schedules, whether

novices received common planning time with colleagues in their subject area, and whether novices had seminars for beginning teachers, extra classroom assistance or supportive communication with administrators. The induction variables also measure whether a novice had a mentor, whether this mentor was in the same subject area as the respondent teacher, and a novice's rating of their mentor's helpfulness. SASS data also include information on whether teachers left their school (a "leaver") or remained there (a "stayer") between 1999-2000 and 2000-2001. In subsequent sections I explain in detail how I utilize these variables to create five primary independent variables and my dependent variable.

Full SASS Sample

SASS utilizes a complex, stratified sampling design, with public and private schools serving as a primary sampling unit. Once sampled, estimates based on these schools and a sub-sample of teachers within these schools are reliable estimates of school and teacher phenomena at the state and national levels. Each sampled school provided a list of teachers and their teaching assignments in the Fall of 1999. About 8 percent of public schools did not return teacher lists. From these lists, 51,811 public school teachers were selected as in-scope, and 42,086 of these teachers completed questionnaires during the 1999-

2000 school year. Completed questionnaires include the in-scope sample less

non-respondents, such as teachers who failed to return questionnaires or refused

to complete a telephone follow-up interview. The overall weighted teacher

response rate was 76.7 percent.

I adjusted the full teacher sample weight to reflect my analytic sample by

dividing the original full sample weight value by the mean value of the weight in

the analytic sample. The full sample teacher weight is created by computing the

inverse of the probability of selection of the sample unit. The basic weight is

adjusted for sampling procedures that alter a sampling unit's probability of

selection, such as the over sampling of small sub-populations. Other

adjustments are used to compensate for in-scope sampling units that did not

complete interviews. Finally, first-stage ratio adjustment factors and teacher

adjustment factors compare sample estimates to the original sampling frames,

and improve the consistency in estimates across SASS files (Seastrom, Gruber,

Henke, McGrath & Cohen, 2002).

Missing Data.

Nearly all SASS variables with missing values receive an imputed value

from when SASS data are processed by the US Bureau of the Census. I use the

imputed values in this study to maximize the data available for analysis. The

imputation procedures are rigorous and designed to impute values with a high

degree of assurance. Detailed information about imputation procedures are

available in *Quality Profile for SASS Rounds 1–3: 1987–1995* (US Department of

Education, 2000). In a small number of cases (noted below) I use the mean value

of variables ("mean plugs") to replace missing values where imputed values

were unavailable. These cases involve missing records of data for no more than

10 percent of the analytic file.

Analytic Sample

I draw my *analytic* sample from the 42,086 teachers who completed

questionnaires in the main SASS sample. My analytic sample derives from five

methodological and substantive criteria. First, I choose novice teachers, defined

as teachers with two or fewer years of experience. This classification corresponds

to empirical work demonstrating that teachers with two or fewer years of

experience often struggle to adjust to the demands of teaching. Unlike veterans

who are able to reflect in more sophisticated ways about their work (Berliner,

1986; Veenman, 1984), these new teachers often focus on their immediate needs

and rely on basic coping strategies. Since school context is an important variable

in this analysis, I select novices with two years of experience only if their first

year of teaching occurred in the school in which they were sampled for the SASS

survey in 1998 or later. These selection criteria identify 3,547 novices. Second, I

focus on full-time novice teachers (n=3,181) who third, have valid, non-missing values on the outcome measure, teacher turnover. The remaining analytic sample has 3,172 teachers. Table 3.1 shows each of these criteria and the resulting number of cases in the analytic file.

In utilizing these criteria, the present study examines novice teachers well-immersed in the induction experience of their first two years of teaching – the period of time that presents some of the greatest professional and personal challenges to novice teachers. These teachers are an ideal analytic group because the normative and organizational climate of their schools can be related to the effect of induction support on turnover, whereas teachers who migrate between the schools in which they had their first year support have unknown or variable school climates that are not possible to control in a quasi-experimental analysis.

Table 3.1

Analytic Sample Criteria and Resulting Sample Sizes

Criterion	Remaining Number of Cases
Full teacher sample	42,086
Criterion 1: Teachers with two or fewer years of experience and who began teaching in *sampled* school in 1998, and teachers with one year of experience who began teaching in the *sampled* school in 1999	3,547
Criterion 2: Full-time teachers	3,181
Criterion 3: Teachers who have no missing data on the outcome variable	3,172

Source: U.S. Department of Education. 1999-2000 Schools and Staffing Survey.

Comparability of Analytic Sample, Novice Sample and Full SASS Sample

Table 3.2 compares characteristics of the full sample of teachers having no missing values on the dependent variable (n=41,964) to a sample of novice teachers having two or fewer years of experience and no missing values on the dependent variable (n=4,531) to novice teachers in the analytic file (n=3,172). Statistics for each of these three samples of teachers are shown under the three rightmost column headings (Full SASS Sample, All Novice Teachers, Analytic Sample) in Table 3.2. Although several criteria are applied to the analytic file, the novice teachers in the analytic file are quite comparable to all novice teachers with two or fewer years of experience. Teachers in the full sample have an

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expected higher average age and a lower turnover rate because the full sample

includes many veteran teachers, while teachers in the analytic file are typically

younger. The analytic file also has a slightly larger percentage of minority

teachers and teachers working in schools with marginally higher enrollments

than the full sample.

Table 3.2

Comparison of Full SASS Sample, Novice Teacher Sample and Analytic Sample

(N=41,964; 4,531; 3,172 teachers respectively)

	Full SASS Sample (N=41,964)		All Novice Teachers (N=4,531)		Analytic Sample (N=3,172)	
	Mean	SD	Mean	SD	Mean	SD
Attrition	.15	.36	.24	.43	.23	.42
Had any mentor	.63	.48	.68	.46	.69	.46
Male	.25	.43	.25	.44	.26	.44
Age	42.28	10.62	30.01	8.36	29.33	7.80
Minority	.16	.36	.21	.4	.21	.41
Secondary	.35	.48	.35	.48	.35	.48
Urban	.27	.44	.29	.45	.30	.46
Enrollment	810.82	579.63	829.48	594.71	843.77	595.45

Source: U.S. Department of Education. 1999-2000 Schools and Staffing Survey.

Measures

This study uses one dependent variable (turnover) and several

independent variables. The primary area of analysis is teacher induction support,

which I represent with five measures of induction components. In this section I define and operationalize the variables for induction components, and the variables for several teacher, normative and organizational characteristics.

Table 3.3 presents descriptive information for the dependent variable, induction variables, teacher characteristics, normative characteristics, and organizational characteristics. The far left column of Table 3.3 shows categories of variables (such as induction support) and within each category individual variables (such as common planning). To the right of each variable label I present the total number of teacher records associated with statistics reported in the table. I also present for each variable minimum and maximum values, its mean and standard deviation and its skew. I do not report the standard deviation and skew for dichotomous variables.

Dependent Variable

Teacher turnover, the dependent variable, is a central concern to policymakers because high attrition rates affect teachers' professional development and exact high costs on school districts. The dependent variable in this study, novice teacher turnover, is defined as a teacher who moves from his or her school, or leaves teaching altogether, after teaching in 1999-2000. Both types of defection from a school are relevant to the purposes of many induction

programs, which commonly aim to reduce attrition from schools. I use a

principal's report of whether a teacher remained in their sampled school or left it

by 2000-2001. About 23 percent of teachers in the analytic file left their schools by

the 2000-2001 school year; among these teachers about 53 percent moved to

another school and 47 percent were not teaching in 2000-2001.

Table 3.3

Descriptive Statistics for Key Variables and Composites (N = 3,172)

	N	Min	Max	Mean	SD	Skew
Dependent Variable						
Turnover ("Leaver")	3172	.00	1.00	.23	-	-
Induction Support Analytic Composites						
High Quality Mentor	3172	.00	1.00	.35	-	-
Seminars or Classes for Beginning Teachers	3172	.00	1.00	.69	-	-
Workload Reduction	3172	.00	1.00	.11	-	-
Common Planning	3172	.00	1.00	.48	-	-
Supportive Communication	3172	.00	1.00	.79	-	-
Teacher Characteristics						
Male	3172	.00	1.00	.26	-	-
Younger	3172	.00	1.00	.71	-	-
Older	3172	.00	1.00	.03	-	-
Minority	3172	.00	1.00	.21	-	-
Advanced degree	3172	.00	1.00	.16	-	-
Infield Certification	3172	.00	1.00	.66	-	-

Table continues.

Table 3.3, continued.

Descriptive Statistics for Key Variables and Composites (N = 3,172)

	N	Min	Max	Mean	SD	Skew
Normative Climate Analytic Composites						
Collegiality	14825	-3.46	1.40	0.00	1.00	-.69
Faculty Influence	14825	-1.83	3.12	0.00	1.00	.32
Commitment	14825	-2.31	1.03	0.00	1.00	-.52
Organizational Characteristics						
Secondary	3172	.00	1.00	.35	-	-
Enrollment [a]	3172	5.00	5123.00	843.77	595.45	2.04
Big School	3172	.00	1.00	.14	-	-
Urban	3172	.00	1.00	.30	-	-
Rural	3172	.00	1.00	.12	-	-
Suburban	3172	.00	1.00	.41	-	-
High Free Lunch	3172	.00	1.00	.35	-	-
Student discipline	14825	-3.35	1.70	0.00	1.00	-.51

Source: U.S. Department of Education. 1999-2000 Schools and Staffing Survey.

[a] Ten percent or fewer cases plugged with mean value.

Induction Support

I use the illustrative and empirical literature on teacher induction to inform the creation of five induction program components. Generally, the literature shows that when programs are designed according to best practices they provide several key components of support to novices, specifically mentoring, seminars or classes for beginning teachers, workload reduction, common planning, and opportunities for supportive communication. The literature suggests that greater levels of these areas of support are beneficial to teachers and may reduce turnover rates. To model these program designs, I use the induction variables to represent each of these distinct components of support. While an additive composite equal to the sum of all program components is the simplest method of creating an induction support measure, such an approach does not permit for an analysis of whether certain designs or components have different effects on novices' turnover. To summarize my use of SASS data in creating induction components, I map SASS data into five separate induction components in Table 3.4. I also define each component, and several other variables reported in this Chapter, in Table 3.6.

Table 3.4: Four Components of Induction Support Measured by SASS

Component of Induction Support	SASS Question(s)	Item Content
Mentoring	25a, 25b, 26	Availability of mentoring, whether mentoring was in same subject area, and teachers' rating of mentor
Common Planning	23c	Availability of common planning time with teachers in novice's subject
Workload Reduction	23a, 23b	Availability of reduced schedules or preparations
Seminars or classes for beginning teachers	23d	Participation in seminars for beginning teachers
Supportive Communication	23f	Supportive communication with administrators; common planning time with teachers in same subject area

NOTE: A copy of the teacher questionnaire is attached in Appendix A.

Mentoring

SASS data on mentoring include two dichotomous indicators of whether a

mentor was available to a novice, whether the mentor was in the novice's subject

area, and interval data indicating a teachers' rating of mentor "helpfulness." I

considered alternative uses of these variables to create composite measures of

mentoring. For instance, I considered using an additive measure of mentoring

that had properties similar to an interval scale, however, the mathematical sum

of these three variables was "muddy" in the sense that it did not distinguish the

quality rating from whether the mentor's subject area matched a novice's subject

area. To avoid the ambiguity that resulted in such a summative measure, I finally

chose to use these variables to create a dichotomous measure of "high quality"

mentoring support that had a specific and easily interpretable definition of

mentor quality. Thus, teachers are designated as having high quality mentoring

if their mentor is in their subject area and receives a rating from the novice of

four or higher on the "helpfulness" scale ("1" coded as "Not at all" helpful and

"5" coded as "To a great extent" helpful). In this way, the composite variable is

directly linked to a known quality of mentoring. About 35 percent of novices in

the analytic sample have a mentor according to these criteria, compared to 69

percent who had *any* mentor.

Seminars or classes for beginning teachers

A variable indicating whether, "seminars or classes for beginning

teachers" were available to novices during the first year of teaching serves as

another key component of induction support. Roughly 69 percent of novices had

this form of support.

Workload Reduction

SASS includes two measures related to workload reduction. The first

measures whether a novice had reduced teaching schedules and the second

whether reduced class preparations were available. Teachers who have either of

these two forms of support are defined as having workload reduction.

Approximately 11 percent of novices have one of these forms.

Supportive Communication

This component of induction support concerns discrete instances of

communication and interaction that novices report with administrative staff

during the first year of teaching. Approximately 79 percent of novices received

this form of support during their first year of teaching.

Teacher Characteristics

Many of the teacher characteristics known to relate to early professional

experiences are subjective, often dealing with their personal history and

motivations to enter teaching. However, some common demographic

characteristics, such as teacher age and preparation, also impinge on teachers'

decisions to stay or leave their positions. I use dichotomous variables measuring

younger (coded "1" if teacher is less than or equal to 30 years of age) and older

teachers (coded "1" if teacher is greater than or equal to fifty years of age).

I also utilize a dichotomous measure termed "infield" that is equal to "1"

when a teacher's certification area matches the subject area of his or her main

teaching assignment, to control for the effect of "out-of-field" teaching on

induction program outcomes. For instance, teachers with certification in

mathematics education would be deemed out-of-field (infield = "0") if their main

teaching assignment was English.[1] This measure does not account, however, for

states that have made their certification definitions purposefully broad to

mitigate out-of-field indicators.

Finally, I create measures of teachers' sex and minority status to examine

any effects these have on induction program outcomes or the distribution of

induction support – both are coded "1" if teachers are male or minority. These

teacher characteristics are applied rarely to empirical studies of induction. Table

3.3 indicates that about 26 percent of novice teachers in the analytic file are male,

71 percent are younger, three percent are older, 21 percent are minority teachers,

16 percent hold an advanced degree, and 66 percent are infield.

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[1] An exhaustive list of main teaching assignments and corresponding certifications is available in Seastrom, Gruber, Henke, McGrath and Cohen (2002).

Teachers' Normative Characteristics

I create three variables related to teachers' normative climate to control induction component effects on teacher turnover, specifically schoolwide collegiality, commitment and faculty influence on decision-making. I create these measures of teachers' reports of their normative climate from a "donor" sample of teachers who worked in the same schools, for two or more years, as the teachers in the analytic sample. There are 14,825 teachers and 2,611 schools associated with these criteria.[2]

Collegiality

I use four variables measured on a 4-point scale that assess teachers' opinions about teacher collegiality in their schools: teachers' reports about principals' communication of expectations, the level of administrative support and encouragement, the extent to which colleagues share instructional values and the level of cooperative effort among staff. These four variables have an internal reliability of 0.72.

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[2] While 14,825 teachers represents a significant drop in the number of teachers from the full SASS teacher sample, the difference is explained in part by the fact that novices (as defined in this study) were sampled in only 31 percent of the entire sample of schools. Thus, teachers in roughly 70 percent of sampled schools were not eligible for the donor file.

I use principal components factor analysis to derive a single factor score from these four variables representing schoolwide collegiality. Factor analysis simplifies relationships among sets of related variables so that one or more factor scores may be used to measure an underlying, hypothetical variable. In this particular factor solution, the four variables related to collegiality explain about 54 percent of variance in a single factor solution,[3] and loaded to the single factor solution with correlations of .64 or greater.

Table 3.5 presents information for variables related to schoolwide collegiality in two primary columns. The left column in Table 3.5 lists each variable associated with collegiality and the right column reports the loading (or correlation) each related variable has with the factor score associated with collegiality. In short, Table 3.5 shows how each variable related to collegiality loaded on this single factor solution. Higher values on the factor score indicate greater amounts of schoolwide collegiality.

Commitment

Schoolwide teacher commitment can help to sustain professional practices in schools. For instance, higher schoolwide commitment enhances teacher

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[3] The variance that each factor explains is comprised of the variance among variables in the factor, plus measurement error and sampling error. The total of these sources of variance is equal to the number of variables entered into a factor analysis procedure.

dedication to improved instructional techniques and staff development

generally, while low commitment levels interfere with novices' progression from

self-concerns (e.g., managing unruly students) to core instructional tasks. I use

the product of values on a measure of teachers' plans to remain in teaching, and

a measure of whether they would decide to be a teacher again, for a composite

measure of commitment. Higher values indicate greater commitment. The

resulting standardized composite is near normally distributed. I do not report

reliability statistics for this composite variable because it is based on only two

source variables.

Faculty Influence on Instructional Decisions

Higher faculty influence on school decisions (e.g., decisions about hiring

teachers) could catalyze the beneficial effects of induction programs. SASS

includes measures of faculty influence for seven instructionally related decisions

at the school level. Teachers' rate these items on a five-point scale. I use these

data to represent the extent to which teachers have shared responsibilities for

decision-making outside their classrooms. These variables, used similarly by

Ingersoll (2001) to measure faculty influence, are: setting performance standards,

establishing curriculum, determining content of in-service programs, evaluating

teachers, hiring new teachers, setting discipline policy and deciding how school

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budget is spent. One item (setting discipline policy) was dropped because it was not well correlated with the other variables related to faculty influence. The six items used in the composite score have a reliability score of 0.77.

I use factor analysis to derive a single factor score representing schoolwide faculty influence. For this factor analysis, the six variables explain about 47 percent of variance in the sample, and loaded to the single factor solution with correlations of .65 or greater. Table 3.5 shows how each variable loaded on this single factor solution, with higher values indicating greater influence. Each of the variables have moderate to high relationships to the factor. The distribution of the resulting composite score is near normal.

Organizational Characteristics

I described in Chapter II several organizational characteristics of schools known to bear on the success or failure of teacher development and teachers' worklife experiences. To incorporate these characteristics into my analysis, I create measures of grade structure, school enrollment and urbanicity, and school poverty level, to examine how they relate to the distribution of induction support or serve as controls when estimating program effects.

I measure grade structure with a dichotomous variable where "1"

indicates a secondary school or a "combined" elementary or secondary school.[4] I

use two measures of enrollment. My first measure of school enrollment is a

dichotomous variable where "1" indicates schools with enrollments one standard

deviation above the mean enrollment among all schools in the sample. Second, I

use a continuous measure equal to the number of students in a given school.

Also, I create measures of urban and rural school location; each of these variables

is coded "1" for schools in these locations. I also create a dichotomous variable to

indicate whether a school had a high proportion of impoverished students;

schools with 50 percent or more of their students eligible for free or reduced-

price lunches were coded "1." Table 3.6 summarizes these procedures. Table 3.3

shows that the analytic sample is comprised of predominantly non-urban

elementary schools, of which about 35 percent have a majority of students

eligible for free or reduced-price lunches.

Student Discipline

Finally, to assess the role that schoolwide student discipline plays on the

effectiveness of induction support, I create a composite measure of schoolwide

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[4] About 9 percent of teachers in my analysis file work in schools with "combined" elementary and secondary grades, however, about 80 percent of these teachers work in schools that have secondary grades seven and above.

student discipline problems using principal components factor analysis. To

measure student discipline, I use six items in the factor solution: the extent to

which teachers view absenteeism, physical conflicts, theft, vandalism, weapons

use and disrespect for teachers as a problem in their school. The results shown in

Table 3.5 indicate that variables related to schoolwide disciplinary climate loaded

onto a single factor with correlations of .65 or greater, explaining 55 percent of

variance. The resulting composite score is near normal and the six items have a

reliability of .83.

Table 3.5

Factor Loadings for Three Composite Variables (N=14,825 teachers in schools with

novice teachers)

Factor Name (percentage variance explained)	Loading
Collegiality (54)	
Principal communicates expectations	.77
Administration behavior supportive and encouraging	.77
Colleagues share beliefs	.64
Staff cooperation	.76
Faculty Influence (47)	
Performance standards	.72
Curriculum	.71
Deciding content of professional development	.71
Teacher evaluation	.70
Teacher hiring	.65
School budget	.63
Student Discipline (55)	
Student absenteeism	.65
Physical conflicts	.77
Robbery or Theft	.79
Vandalism	.79
Weapons	.70
Disrespect for teachers	.73

Source: U.S. Department of Education. 1999-2000 Schools and Staffing Survey.

Interaction Terms

The research literature on teacher development, professional development

and induction programs suggests that induction program effects may be

contingent on teachers' background and the types of schools they work in.

Interaction terms are variables that help to measure whether the effect of a given

predictor on an outcome variable is contingent on another predictor. I create

interaction terms (which generally may be referred to as "higher-order" terms)

by multiplying two independent variables ("lower-order" terms). I test for

interactions between components of induction support and teacher, normative

and organizational characteristics related to novice teacher attrition.

Table 3.6

Definitions of Measures Used in the Analysis

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Dependent Variable

Teacher Turnover: a dichotomous variable where 1 = leaver, not teaching in the same school as last year; and 0 = stayer, teaching in the same school.

Induction Program Components

High quality mentoring: a dichotomous variable where 1 = novices with a mentor in their subject area and rated as 4 or higher on a "helpfulness" scale during the first year of teaching, and 0 = no high quality mentor available.
Seminars or classes for beginning teachers: a dichotomous variable where 1 = novices receiving classes for beginning teachers during their first year of teaching, and 0 = no seminars or classes for beginning teachers.
Workload reduction: a dichotomous variable where 1 = novices receiving either a reduced teaching schedule or reduced number of preparations during the first year of teaching, and 0 = no workload reduction.
Common Planning: a dichotomous variables where 1 = novices with common planning time with teachers in their subject; and 0 = novices without such time.
Supportive Communication: a dichotomous variable where 1 = novices receiving supportive communication from the administration during the first year of teaching; and 0 = no form of supportive communication.

Teacher Characteristics

Male: a dichotomous variable where 1 =male teacher; and 0 = female teacher.

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Table continues.

Table 3.6, continued

Definitions of Measures Used in the Analysis

Minority: a dichotomous variable where 1 = black, Asian/Pacific Islander, American Indian, or of Hispanic Origin; and 0 = white teacher.

Younger: a dichotomous variable where 1 = teacher is less than or equal to 30 years of age; and 0 = other teachers.

Older: a dichotomous variable where 1 = teacher is greater than or equal to 50 years of age; and 0 = other teachers.

Advanced Degree: a dichotomous variable where 1 = teacher holds a master's or doctoral degree; and 0 = all other teachers.

Infield: a dichotomous variable where 1 = teachers whose certification area (defined in SASS as, "Regular or standard state certificate or advanced professional certificate.") matches the field in which they teach the most classes, regardless of whether that teacher holds a major or minor in that field; and 0 = teachers who hold teaching certificates that are not matched to their main teaching assignment. Teachers without infield status have certification that is "out-of-field" because the subject area of their certification does not match their main teaching assignment. For instance, to be coded infield, an English teacher had to have regular certification in any of English or language arts, journalism or reading. Teachers whose main assignment was "general elementary" had to have any of "Kindergarten" or "General elementary" certification.

Teachers' Normative Characteristics

Collegiality: on a scale of 1 to 4, the schoolwide mean of teachers' reported levels of principal communication of performance expectations, supportive and encouraging administrative behavior, shared beliefs among faculty about school mission, and great deal of effort among school staff.

Table continues.

Table 3.6, continued

Commitment: a continuous measure created from the product of two items: teachers' plans to remain in teaching and teachers' reports of whether they would become a teacher again if they had the chance.

Faculty Influence: on a scale of 1 to 5, the school mean of faculty control and influence over six decision-making areas: setting performance standards for students, establishing curriculum, determining the content of professional development, evaluating teachers, hiring new full-time teachers, and deciding how the school budget is spent.

Organizational Characteristics

Big School: a dichotomous variable where 1 = schools with an enrollment one standard deviation above the mean enrollment (approximately 1,439 students); and 0 = schools without such enrollments.

Enrollment: a continuous variable indicating the number of students enrolled in school.

Secondary: a dichotomous variable where 1 = secondary or combined elementary and secondary; and 0 = elementary schools.

Urban: a dichotomous variable where 1 = urban school; and 0 = non-urban schools.

Rural: a dichotomous variable where 1 = rural school; and 0 = non-rural schools.

Student Discipline Problems: on a scale of 1 to 4, the school mean of reported levels of: student absenteeism, physical conflicts, theft and robbery, vandalism, use of weapons and disrespect of teachers.

Hi Lunch: a dichotomous indicator where 1 = school in which at least 50 percent of students are eligible for free or reduced-price lunches; and 0 = schools with less than 50 percent of such students.

Data Analysis Procedures

Missing Data

The SASS imputes replacement values for missing data on most variables. In cases where imputed data were unavailable for a given variable, I replace missing values with the mean value of that variable. Specifically, I used this procedure for school enrollment and the number of students eligible for free or reduced-price lunches. In both cases I replaced values for less than 10 percent of cases in analytic file.

Descriptive and Bivariate Analyses

The purpose of the descriptive and bivariate analyses supporting is to examine the distribution of different components of induction programs, and to describe how the programs forms vary with teacher and school characteristics. To accomplish these analyses, I use frequency distributions, cross-tabulations and X^2-tests. For instance, cross-tabulations of organizational characteristics and each induction component will indicate whether different forms of support are more common in various school settings. I also use descriptive and bivariate analyses to examine the relationship between induction program components

and teacher turnover. I use t-tests to examine differences in induction program experiences for stayers and leavers.

Multivariate Analysis

The multivariate analyses prompted by the second and third research questions examine the relationship between induction program components and teacher turnover using a quasi-experimental design. I use logistic regression to make predictions about the probability of turnover in terms of the induction components each novice receives. I begin the multivariate analysis with simple models that include only the primary independent variable, and then build this model to include teacher background, normative, organizational, and interactions variables. Variables that are found to be non-significant through the course of these analyses are removed from subsequent models. I conclude with a set of multivariate analyses in which I seek to determine whether the effects of specific induction components vary with the characteristics of schools and teacxhers,

Dependent variables

Logistic regression analysis is the most appropriate method to measure the likelihood that induction program components and other variables explain

differences in the probability of novice teacher turnover because the dependent

variable is a dichotomous variable. Logistic regression contrasts with ordinary

least squares (OLS) regression because, in part, it bounds probabilities to be

between 1 and 0, whereas predicted scores from OLS may be less than 0 or

greater than 1. Logistic regression also assumes an asymptotic, non-linear

relationship between the dependent and independent variables, and provides

more reliable estimates of error and test statistics for dichotomous outcomes than

are possible with OLS regression.

Independent variables

I use five groups (induction components, teacher characteristics,

normative characteristics, organizational characteristics and interaction terms) of

independent variables to develop nested logistic models and predict the

likelihood of teacher turnover. I enter the variable groups in turn, as blocks of

predictors, in logistic regression. First, I use the four components of induction

support introduced above. Second, I consider teacher characteristics and, third,

normative context in the regression models, to examine how they partial the

main effect of induction on turnover. Fourth, I enter organizational

characteristics into the analysis. At each stage, I eliminate non-significant effects

from the model. Fifth, I introduce interaction variables to examine the

contingent effects between the statistically significant induction components and the statistically significant teacher background, teacher normative, and organizational characteristics.

Limitations

There are at least five key limitations to this study. First, the limitations of this study in part stem from the fact that the SASS was not designed specifically to conduct extensive research on novice teachers, nor for research on induction programs. For instance, the novice teacher samples are small, particularly within-schools, and prevent employment of more advanced analysis of, and the creation of more reliable independent variables for, teacher induction. Second, while I assume that the normative measures represent *all* teachers in each sampled school, they are based on a non-representative sample of each school's teachers. Third, the data on teacher induction, while an improvement over earlier datasets, are limited in that the induction variables do not measure all possible components of induction programs, nor do they provide a sense of the quality of these components. Moreover, the presence or absence of components is ultimately perceptual and not based on any organizational record of actual programs or implemented policies. Fourth, more general aspects concerning SASS design limit my analyses. For example, to reduce respondent burden SASS

frequently utilizes dichotomous measures, however these simplified scales curtail the development of more fine-grained and reliable interval or ratio measures of induction components.

Finally, data for the dependent variable include teachers who both move from their sampled school to another school between 1999-2000 and 2000-2001, and teachers who do not return to teach at any school by 2000-2001. This study assumes that either type of departure from the sampled school is an important level of defection that is pertinent to teacher induction programs and an important policy issue concerning human resource losses. Although the purposes of induction programs fit with the logic of grouping movers and leavers, other research has confirmed that motivations differ between "moving" employees and those who permanently exit (Lankford, Loeb & Wyckoff, 2001).

While these limitations create obstacles to the study of induction using SASS, important analytic opportunities remain. For instance, not only are SASS data representative of teachers nationwide, they include several other measures of teachers' working conditions and normative and behavioral experiences. By synthesizing and conceptualizing them in terms of induction and socialization, SASS data are the first opportunity to test more complex hypotheses about induction without concerns that results are too closely tied to the idiosyncrasies of local settings.

CHAPTER IV

INDUCTION PROGRAM COMPONENTS:

DIFFUSE AND MODERATED INTERVENTIONS

This chapter presents results from an analysis of the distribution of

teacher induction programs and a description of the relationship these

components – high quality mentoring, seminars or classes for beginning teachers,

common planning, and supportive communication – have to teacher turnover.

The analyses focus on responses of 3,172 novice public school teachers, and

responses of teachers who worked in the same schools as these novices, to

questions concerning induction support, the normative and organizational

context of this support, and questions concerning novice teachers' professional

and demographic background. I present findings according to each of the three

research questions first introduced in Chapter I.

Research Question 1: Access Generally Even But Some Components More

Prevalent Than Others

In this section I report on the distribution of induction program

components: specifically, high quality mentoring, seminars or classes for

beginning teachers, workload reduction, common planning time and supportive

communication. The research literature describes each component as a

potentially important element in the design of quality programs. I begin by

examining the frequency of occurrence for each component. Next, I consider the

distribution of these components by teacher and organizational characteristics,

and I conclude with an investigation of the frequency of different combinations

of support components.

Supportive Communication the Most Prevalent Component

Figure 4.1 shows descriptive information for the five induction

components analyzed in this chapter. Each bar in the figure represents one of the

components. High quality mentoring is shown at the far left, with the darker,

bottom portion of the bar representing novices who receive this component; the

top, lighter portion of this bar represents novices who do *not* receive high quality

mentoring.

High quality mentoring, which consists of mentors who teach in the same

subject area as their novice, and whom novices give a high "helpfulness" rating,

is reported by 35 percent of novices. About 69 percent of novices receive

seminars or classes designed for beginning teachers during their *first year* of

teaching. Workload reduction components (preparations or class schedule

reductions) are rarer; about 11 percent of novices get some form of reduced

schedules or class preparations. Common planning time is available to about 48

percent of novices, while supportive communication with administrative staff is

available to about 79 percent. Overall, the comparisons show striking differences

among the program components in terms of prevalence, with the difference

between workload reduction and supportive communication being particularly
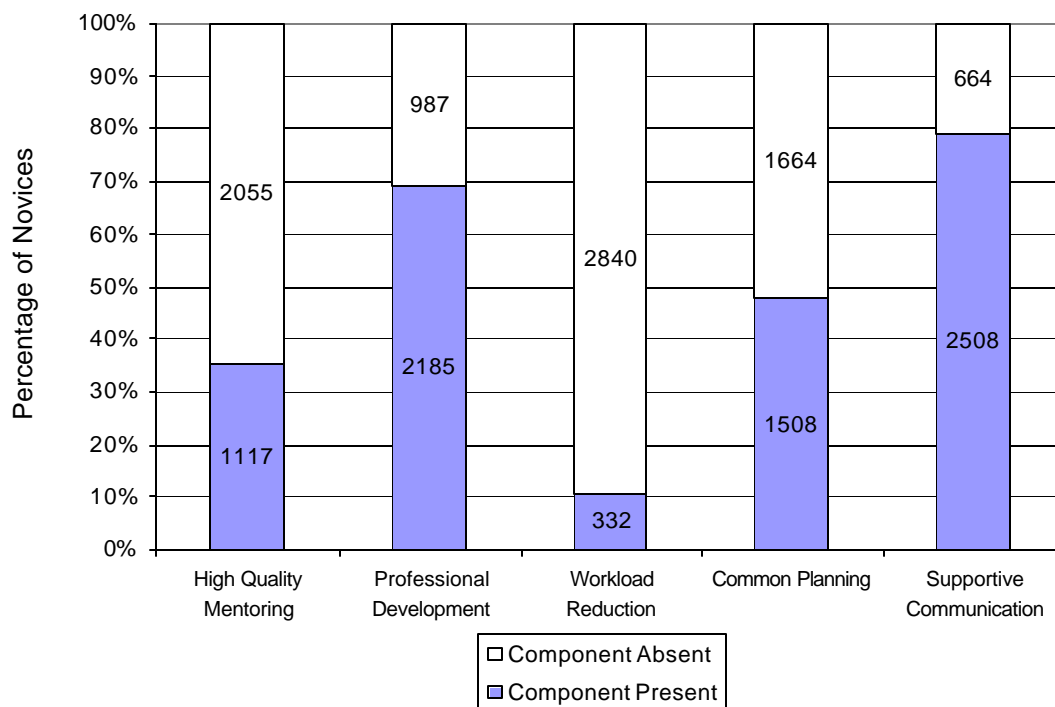
large.

Figure 4.1: Distribution of Four Induction Support Components

The univariate statistics just summarized only scratch at the surface of

how induction support is distributed among novice teachers, informing us about

the most common components without conveying whether different patterns of access to support occur for different teachers and schools. To deepen the analysis, I next use bivariate statistics to describe teachers' access to components of induction support.

Distribution of Components is Relatively Even Across Teacher and School Characteristics

Table 4.1a and Table 4.1b present the distribution of induction components for individual and organizational characteristics. The five rightmost columns of these tables present the five induction components and their distribution for various individual and organizational characteristics in each row. Each of these columns is divided into two additional columns that show the percentage of novice teachers not having these components and the percentage of novice teachers having them ("absent" and "present," columns respectively). The topmost row of numbers in each of Table 4.1a and Table 4.1b shows the mean frequency distribution for each component, which was also discussed above. Where cells are shaded, a statistically significant difference was evident over *all* cases for a given crosstabulation. An unweighted cell N and weighted percentage are shown for each cell.

Mentoring More Prevalent in Larger Schools

Table 4.1a indicates there are no significant or substantial differences in

the availability of mentoring in terms of teachers' sex, race, age or infield [1] status

(a status for novices whose teaching certification matches their main teaching

assignment). When the average distribution of mentoring (shown in the top-most

row of numbers in Table 4.1a) is compared to its distribution for each of the

teacher characteristics, there is little difference between the average statistic and

the cross-tabulated statistics. For instance, the average distribution of mentoring

is about 35 percent overall, and its distribution among young, male, minority

teachers and teachers with an advanced degree teaching infield is within one or

two percentage points of this average.

Similarly, the availability of mentoring is relatively constant across several

organizational characteristics shown in Table 4.1b, although teachers in big

schools (with enrollments over 1,439 students) were more likely to have high

quality mentors. Novices working in non-rural and suburban schools had

significantly more high quality mentoring than novices in rural and non-

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[1] The variable measuring teachers' infield status has ties both to individual
characteristics and organizational characteristics (e.g. the capacity of school to
attract teachers with certification in their main teaching assignment). In Table
4.1a, I include this variable in the individual characteristics sub-section because
this construct was more conceptually distinct from the organizational
characteristics included in Table 4.1b.

suburban schools. Overall, however, these differences across teacher and organizational characteristics do not indicate any substantial differences in the distribution of high quality mentoring (no differences in the likelihood of experiencing high quality mentoring exceeds 8 percentage points). The percentages instead show a relatively even distribution of mentoring, perhaps due to its being a keystone in many induction programs.

Seminars or Classes for Beginning Teachers More Available Among Minority Teachers and in Larger Schools

Seminars or classes for beginning teachers is relatively evenly distributed according to teacher sex, age and advanced degree status, however, it is well-differentiated by novices' minority status and less so their infield status (Table 4.1a). Minority teachers are more likely to have seminars or classes than non-minority teachers, by about 16 percentage points. Table 4.1b indicates that novices working in large, urban schools are 9 and 10 percent more likely, respectively, to have seminars or classes than novices in smaller, non-urban schools. An even greater difference exists for novices working in rural schools. Those novices are far less likely to have seminars or classes than their peers in non-rural schools by 27 percentage points. Teachers working in schools with a

majority of students eligible for free- or reduced-price lunches are about 5

percentage points more likely to receive seminars or classes components.

Workload Reduction More Available Among Minority Teachers and in Larger Schools

Although significant differences in the availability of workload reduction

are apparent for several teacher and organizational characteristics, this

component is infrequently available to novice teachers. Table 4.1a shows that

male teachers, minority teachers, young teachers, and teachers whose main

teaching assignment is out of their field of certification have greater access to

workload reduction than their counterparts. Table 4.1b indicates that novices in

large schools and secondary schools receive slightly more workload reduction

than teachers in small schools and non-secondary schools. Despite these

deviations from expected frequencies, nearly all teacher and organizational

characteristics track closely to the mean level of workload reduction shown in the

first row of each table (the greatest difference being between minority and non-

minority teachers at 8 percentage points).

Common Planning More Available Among Minority Teacher s and in Larger Schools

Teacher characteristics do not greatly distinguish the distribution of

common planning among novice teachers. None of the percentages shown in

Table 4.1a, for instance, deviate from the mean availability of this component by more than about 6 percentage points. By contrast, teachers in large schools are less likely to receive common planning time than teachers in smaller schools by a difference of about 11 percentage points. Even more pronounced are differences between teachers in secondary and non-secondary schools. About 54 percent of novices in secondary schools receive common planning time while only about 36 percent of novices in non-secondary schools do (a difference of 18 percentage points). Novices in rural schools also show a distinct deficit in receiving common planning, as their peers in non-rural schools are more likely to receive this component of support (36 percent versus 49 percent, respectively); novices in high poverty schools are also more likely than teachers in low-poverty schools to report common planning time, but the difference, about 7 percentage points, is relatively small.

Supportive Communication More Available Among Male Teachers and in High Poverty Schools

There are four teacher characteristics that show significant differences overall for the availability of supportive communication among novices. Among them, novices' sex is the most discriminating (Table 4.1a), with male teachers having more of this form of support than female teachers (86 percent versus 77

110

percent, respectively). Teachers' age, advanced degree status, and infield status also distinguish novices who have and do not have this form of support, with the largest advantage (8 percentage points) being for teachers who do not have an advanced degree.

Table 4.1b shows only one organizational characteristic that significantly discriminates between novices who have supportive communication and those who do not. Novices who work in schools with a high percentage of students (50 percent or more) eligible for free or reduced priced lunches are slightly more likely to have supportive communication than novices not in schools with less than 50 percent of students eligible for free or reduced lunch (a difference of roughly 3 percentage points).

Table 4.1a

Distribution of Five Induction Components Among Teacher Characteristics (N=3,172 teachers)

	High Quality Mentor		Seminars or Classes		Workload Reduction		Common Planning		Supportive Communication	
	Absent	Present	Absent	Present	Absent	Present	Absent	Present	Absent	Present
	N(%)	n(%)	n(%)	n(%)	N(%)	n(%)	n(%)	n(%)	n(%)	n(%)
Mean	2162(64.8)	1010(35.2)	1264(31.1)	1908(68.9)	2800(89.5)	372(10.5)	1898(52.5)	1274(47.6)	634(20.9)	2538(79.1)
Male	726(66.5)	323(33.5)	407(32.7)	642(67.3)	906(86)	143(14)	642(55.6)	407(44.4)	165(14.0)	884(86.0)
Female	1436(64.2)	687(35.8)	857(30.6)	1266(69.4)	1894(90.7)	229(9.3)	1256(51.3)	1867(48.7)	469(23.3)	1654(76.7)
Minority	411(63.1)	219(36.9)	187(18.6)	443(81.4)	531(83.5)	99(16.5)	334(46.2)	296(53.8)	113(18.4)	517(81.6)
Not Minority	1757(65.3)	791(34.7)	1077(34.6)	1465(65.4)	2269(91.2)	273(8.8)	1564(54.2)	978(45.8)	521(21.6)	2021(78.4)
Young	1486(64.2)	716(35.8)	882(30.3)	1320(69.7)	1924(88.2)	278(11.8)	1306(51.9)	896(48.1)	439(19.8)	1793(80.2)
Not Young	616(66.3)	294(33.7)	382(33.0)	588(67.0)	876(92.9)	94(7.1)	592(53.8)	378(46.2)	195(23.8)	775(76.2)
Adv Degree	357(67.0)	165(33.0)	197(27.1)	325(72.9)	458(88.6)	64(11.4)	320(57.0)	202(43.0)	119(27.6)	403(72.4)
Not AdvDeg	1805(64.4)	845(35.6)	1067(31.9)	1543(68.1)	2342(89.7)	308(10.3)	1578(51.6)	1072(48.4)	515(19.6)	2135(80.4)
Infield	1457(64.2)	670(35.8)	883(33.1)	1244(66.9)	1919(92.1)	208(7.9)	1264(51.5)	863(48.5)	461(22.2)	1666(77.8)
Not Infield	705(65.8)	340(34.2)	381(27.2)	664(72.8)	881(84.6)	164(15.4)	634(54.3)	411(45.7)	173(18.5)	872(81.5)

Source: U.S. Department of Education. 1999-2000 Schools and Staffing Survey.

Note: Shaded cells have a chi-square value that is significant at the p < .05 level or better.

Table 4.1b

Distribution of Five Induction Components Across Organizational and Normative Characteristics (N=3,172 teachers)

	High Quality Mentor		Seminars or Classes		Workload Reduction		Common Planning		Supportive Communication	
	Absent	Present	Absent	Present	Absent	Present	Absent	Present	Absent	Present
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Mean	2162(64.8)	1010(35.2)	1264(31.1)	1908(68.9)	2800(89.5)	372(10.5)	1898(52.5)	1274(47.6)	634(20.9)	2538(79.1)
Big School	324(59.1)	184(40.9)	132(23.8)	376(76.2)	410(84.0)	98 (16.0)	304(61.8)	204(38.2)	108(23.1)	400(76.9)
Not Big	1838(65.7)	826(34.3)	1132(32.3)	1532(67.7)	2390(90.5)	274 (9.5)	1594(50.9)	1070(49.1)	526(20.5)	2138(79.5)
Secondary	1415(66.2)	613(33.8)	848(35.6)	1180(64.4)	1742(84.8)	286(15.2)	1355(46.1)	673(53.9)	393(19.4)	1635(80.6)
Not Second'y	747(64.0)	397(36.0)	416(28.7)	728(71.3)	1058(92.1)	86(7.9)	543(64.2)	601(35.8)	241(21.8)	903(78.2)
Urban	515(65.7)	260(34.3)	217(24.1)	558(75.9)	687(90.1)	88(9.9)	441(52.8)	334(47.2)	176(23.0)	599(77.0)
Not urban	1647(64.4)	750(35.6)	1047(34.2)	1350(65.8)	2113(89.3)	284(10.7)	1457(52.3)	940(47.7)	458(20.0)	939(80.0)
Rural	506(71.6)	154(28.4)	413(54.5)	247(45.5)	588(86.7)	72(13.3)	465(64.2)	195(35.8)	136(17.6)	524(82.4)
Not Rural	1656(63.9)	856(36.1)	851(28.0)	1661(72.0)	2212(89.9)	300(10.1)	1433(50.9)	1079(49.1)	498(21.4)	2014(78.6)
Suburban	678(60.7)	373(39.3)	328(26.1)	723(73.9)	924(90.0)	127(10.0)	575(47.2)	475(52.8)	201(21.6)	850(78.4)
Not Suburb	1484(67.7)	637(32.3)	936(34.7)	1185(65.3)	1876(89.2)	245(10.8)	1323(56.2)	798(43.8)	433(20.5)	1688(79.5)
Hi Free Lunch	692(66.5)	307(34.5)	400(28.1)	499(71.9)	898(89.2)	101(10.8)	571(47.9)	428(52.1)	207(18.9)	792(81.1)
Not Hi Free	1470(63.9)	703(36.1)	864(32.7)	1309(67.3)	1902(89.7)	271(10.3)	1327(54.8)	846(45.2)	427(22.0)	1746(78.0)

Source: U.S. Department of Education. 1999-2000 Schools and Staffing Survey.

Note: Shaded cells have a chi-square value that is significant at the p < .05 level or better.

Summary

The results in Table 4.1a and Table 4.1b give some indication that the context of induction support relates more to organizational characteristics and less to teachers' background, with exceptions being reports of workload reduction and supportive communication (there are more significant teacher differences than organizational differences for these two forms of support). The magnitude of differences, however, is relatively small across both Tables 4.1a and 4.1b, with most significant group differences being near or under 10 percentage points.

Among the teacher characteristics, no single characteristic explains group differences for more than three components. The most prominent patterns that teacher characteristics show are for minority status and infield status. First-year minority teachers are consistently more likely to report seminars or classes for beginning teachers, workload reduction, and common planning time; teachers teaching out-of-field are consistently more likely to report receiving seminars or classes, workload reduction, and supportive communication during their first year of teaching. The increased likelihood that novice teachers working out-of-field receive induction supports may reflect recognition by local administrators that out-of-field assignments place additional stress on new teachers.

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Organizational characteristics might be expected to have the strongest

association with the provision of components because policymakers often use the

characteristics of schools and the students that attend them to distribute

resources. Nonetheless, there is no dominant pattern apparent in Table 4.1b.

While school size is associated with the provision of four of five components, the

relationship is positive for high quality mentoring, seminars or classes, and

workload reduction but negative for common planning time. More consistent

patterns are displayed for suburban and rural schools. Suburban schools are

more likely to provide novice teachers with high quality mentoring, seminars or

classes, and common planning time, while rural schools are less likely to provide

these same supports to novice teachers.

Combinations of Induction Components Exhibit an Array of Forms

Finally, before describing the relationship the induction components have

to the likelihood of teacher turnover, I examine their inter-relationship in Figure

4.2. In many cases a correlation matrix is an acceptable means to measure the

inter-relationship between a set of variables, however, the dichotomous scale

used for each induction component weakens this approach. Instead, I analyzed

the frequency of every possible *combination* of the five components – high quality

mentoring (abbreviated as "M"), seminars or classes ("PD"), workload reduction

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("WR"), common planning time ("CP") and supportive communication ("SC").

Including the possibility of no support, I found 30 different combinations of

components in the analytic file.

Figure 4.2 shows from left to right the least common to the most common

combinations of five induction components. Below the horizontal axis are

abbreviated labels for each of the components found in these combinations.

Thus, at the far left, the combination of high quality mentoring, workload

reduction and common planning (M, WR, CP) is the least common induction

design for support, accounting for less than 1 percent of all cases in the analytic

file. At the far right, seminars or classes and supportive communication (PD, SC)

is the most common combination, available to slightly more than 14 percent of all

novices in the analytic file. In presenting these frequencies of combinations, we

gain a greater sense of the wide range of induction experiences reported by

novice teachers.

One pattern evident in Figure 4.2 is the frequency with which supportive

communication is associated with more common combinations, a finding that

might be anticipated by the frequencies reported in Figure 4.1. For instance,

supportive communication is available to novices in 11 of the 15 most common

combinations of support among novices, while only among five of the 15 least

common combinations. Supportive communication by itself is found among

nearly 10 percent of novices. Another pattern is the scattering of common planning across the entire range of combinations. In this case, common planning appears among eight of the 15 least common combinations, as well as among eight of the 15 most common combinations. Also, as might be expected, workload reduction is associated with the least common combinations since it is rarely available to novices overall. Workload reduction is grouped only with combinations that are available to less than three percent or more novices.

Some novices also receive four of the five components together. For instance, about 14 percent of novices receive mentoring, seminars or classes, common planning and supportive communication in combination – the second most common combination observed in these data. Thus, for a small group of novices a seemingly comprehensive support framework is available. In contrast, Figure 4.2 shows that about 19 percent of novices receive only one of the five components alone, with those receiving supportive communication alone (9.3 percent) being the largest group in this circumstance. This finding underscores that novices are more likely *not* to have a comprehensive induction program available to them, on average.

Conclusion: A Generally Even Distribution of Induction Support

The analysis of the distribution of induction support suggests that some induction components are rather common among novice teachers and others quite rare. The distribution of these components varies frequently among different teacher groups but not in substantial or consistent ways. The components are distributed with slightly more variance across organizational characteristics, and only school size has some regular pattern that discriminates the distribution of support. Finally, the descriptive analysis clarifies that novice teachers receive many different forms of induction support, with some novices having many components at once while others receive one component alone.
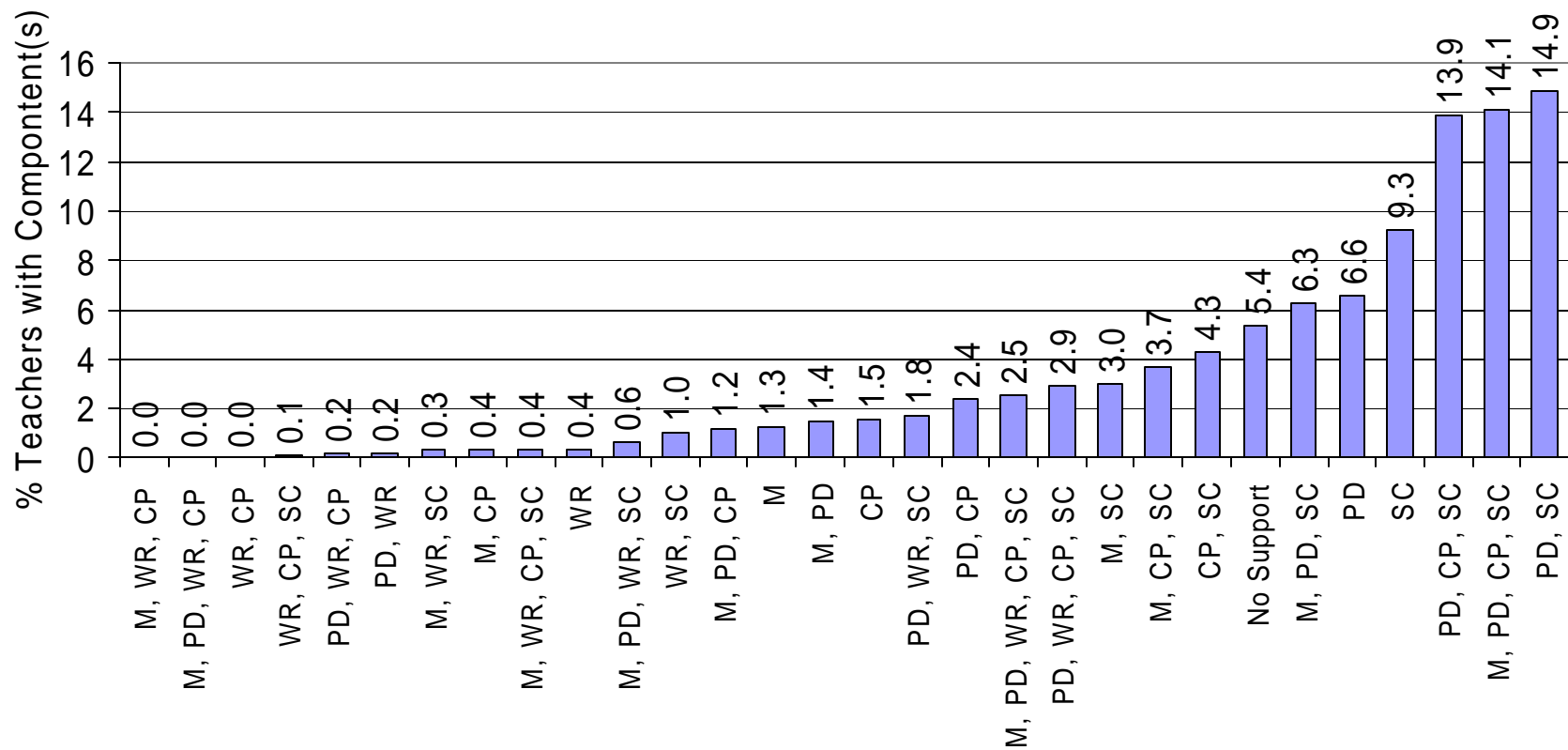
Figure 4.2. Distribution of Combinations of Induction Support Components (N=3,172 teachers). In the figure depicted,

"M" = High quality mentoring; "PD" = Seminars or classes; "WR" = Workload Reduction; "CP" = Common Planning;

"SC" = Supportive Communication.

Research Question 2: Key Components of Induction Support Abate Novice

Turnover

My second research question examines the relationship between the

induction support components and teacher turnover. These questions shift the

analysis from descriptive accounts of the distribution of induction support to its

role as a factor in reducing the likelihood of turnover. The extant literature on

induction programs provides some evidence of a negative relationship between

these constructs – that is, higher levels of support relate to lower levels of

turnover – but knowledge is often limited to idiosyncratic studies whose results

cannot be generalized to larger populations of teachers. In contrast, this study

offers multiple ways to examine and model this relationship in a manner that is

representative of teachers nationally and which permits for group comparisons

using a standardized measure of induction support.

Three Components Associated with Lower Turnover Rates

The negative relationship between increased induction support and

reduced teacher turnover is evident in differences in the mean level of induction

support between stayers and leavers. Figure 4.3 presents the mean level of

support for stayers (dark vertical bar) and leavers (white vertical bar) for each of

the five components of support. The results indicate that teachers leaving school report less mentoring (29 percent; t=4.2), common planning (40 percent; t=4.9), and supportive communication (74 percent; t=4.0).

Surprisingly, higher workload reduction levels do not relate significantly to turnover (t=.87), although the paucity of this type of support among novices may undermine the reliability of this estimate. The prevalence of seminars or classes among stayers (70 percent) is only slightly higher than among leavers (66 percent; t=1.96), however, differences in the availability of seminars or classes between minority and non-minority novices, or novices working in rural (versus non-rural) schools (Table 4.1a and Table 4.1b) might be a source of greater effects than is observable in a simple bivariate analysis. These results at first glance suggest that workload reduction and seminars or classes are unlikely to be important variables in multivariate inferential analyses, although I will examine their role later to consider whether different teacher, normative and organizational controls might relate to these components having more prominent effects.

Associations with Teacher and Organizational Factors Weak

I examine in Table 4.2 the bivariate distributions that teacher and organizational characteristics have with the dependent variable. An unweighted

cell N and weighted percentage are shown for each cell for each of the control variables used in this study; shaded cells indicate a significant difference between groups. The results indicate that only a small number of these characteristics discriminate between mean levels of turnover. For instance, the rate of turnover for teachers in schools with a high percentage (50 percent or more of students) of free or reduced price eligible students was only about four percentage points different from other schools. Turnover rates also vary slightly with novices working in rural and suburban schools, by about four or five percentage points. More striking than each of the control variables, however, is that nearly all of the percentages shown in this table for stayers have values very close to 77 percent; there is very little variability in turnover according to the control variables. While statistically reliable, these differences suggest that teacher and organizational characteristics are not likely to be major players in predicting turnover. I turn to the role that induction components have in reducing turnover, controlling for these characteristics, in logistic regression models that I describe next.

Figure 4.3. Percentage of Novice Teachers Receiving Components of Induction Support According to Turnover Status (N=3,172 teachers)

Table 4.2

Novice Teacher Turnover Status by Teacher and Organizational Characteristics

(N=3,172 teachers)

	Stayer N(%)	Leaver N(%)
Mean	2413 (77.3)	759 (22.7)
Teacher Characteristics		
Male	503 (76.3)	256 (23.7)
Female	1620 (77.7)	503 (22.3)
Minority	495 (78.0)	135 (22.0)
Not Minority	1918 (77.1)	624 (22.9)
Young	1656 (77.3)	546 (22.7)
Not Young	757 (77.5)	213 (22.5)
Adv Degree	399 (75.7)	123 (24.3)
Not Adv Deg	2014 (77.6)	636 (22.4)
Infield	1656 (79.3)	471 (20.7)
Not Infield	757 (73.5)	288 (26.5)
Organizational Characteristics		
Big School	405 (79.8)	103 (20.2)
Not Big	2008 (77.0)	656 (23.0)
Secondary	878 (77.1)	266 (22.9)
Not Secondary	1535 (77.4)	493 (22.6)
Urban	604 (76.6)	171 (23.4)
Not urban	1809 (77.6)	588 (22.4)
Rural	470 (72.6)	190 (27.4)
Not Rural	1943 (77.9)	569 (22.1)
Suburban	824 (79.5)	227 (20.5)
Not Suburb	1589 (75.8)	432 (24.2)
Hi Free Lunch	748 (74.7)	251 (25.3)
Not Hi Free	1665 (78.7)	508 (21.3)

Source: U.S. Department of Education. 1999-2000 Schools and Staffing Survey.

A Multivariate Test of Induction Component Effects

I continue my analysis for the second research question with several

logistic regression models to estimate the effects of induction components on

teacher turnover, controlling for teacher, normative and organizational variables.

These models offer *multivariate* results that complement the *bivariate* analyses

between induction components and turnover, or between components and

control variables. I use a set of regression models labeled A1 though A5 to test

the main effects between each component and teacher turnover. Model A1

examines the relationship between each of the four induction components and

teacher turnover. Model A2 introduces teacher characteristics to the models.

Model A3 adds normative controls and then Model A4 introduces organizational

variables. Finally, Model A5 uses all terms found to be significant in Models A1

through A4. Variables significant at the $p = 0.1$ level are included in subsequent

regression analyses.

Three Components of Induction Support Reduce the Likelihood of Turnover

Table 4.3 presents logistic regression coefficients as log-odds (columns

labeled "LO"), and their associated odds-ratios (labeled "OR"), that explain

variance in the probability of novice teacher turnover for Models A1 through A5.

Log-odds are simply odds-ratios (the probability of an event occurring divided

by the probability of it *not* occurring) that are transformed using the natural logarithmic function – hence, they are termed a "log-odds." If we use as the dependent variable the log-odds that the dependent variable equals 1, then predicted values of *probability* are constrained between zero and one (Menard, 1995). Log-odds coefficients represent each independent variable's main effect on the likelihood of turnover; I discuss the effects in terms of odds-ratios because these statistics have a more intuitive interpretation.

In Model A1, the five induction components are entered simultaneously without controlling for teacher, normative or organizational characteristics. Although the mean level of turnover (represented by the Constant) is associated with the largest reduction in the likelihood of teacher turnover, high quality mentoring, common planning and supportive communication still account for important reductions in turnover. High quality mentoring accounts for a 24 percent reduction in the odds of turnover (the ratio of the probability of turnover to the probability of *no turnover*), common planning for a 27 percent reduction, and supportive communication a 24 percent reduction in the odds of turnover. [2]

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[2] Each regression model presented in this study includes two diagnostic statistics: Hosmer and Lemeshow's chi-square statistic, and the Nagelkerke pseudo-R^2. There is considerable debate about the meaning and validity of these diagnostic measures in logistic regression; they are included here for informational purposes only.

Alternately, I ran this model using a dichotomous variable for mentoring, whereby teachers with *any* mentor, regardless of quality, were compared to teachers who had no mentor. This alternative measure of mentoring did not make any statistically significant contribution to the model, likely because the *quality* of mentors captured by the "high quality mentoring" variable, and the field match between novice and mentor, are important constructs in assessing the role of induction support on turnover. For the purpose of simplicity, I do not present these modes in the table.

When teacher characteristics are added to the model as a group (Model A2), only infield status has a significant relationship to the likelihood of turnover; it is associated with a 31 percent reduction in the odds of turnover. Despite the fact that infield status explains more of the variance in the log-odds of turnover than any induction component, mentoring, common planning and supportive communication continue to be important factors at the same magnitude as Model A1. These results suggest that the quality of programs is independent of the characteristics of novices who participate in them because teacher background variables do not alter the strength or direction of relationships that induction support has with turnover. In subsequent sections I explore this independence further using interaction terms.

In Model A3, I examine the role of three normative composite variables. Collegiality, commitment and faculty influence each have been associated with improving the ability of teachers to communicate on various issues central to teachers' work, in turn abating turnover. When the three normative variables are entered simultaneously, it is evident that faculty influence has no bearing on the likelihood of novice teacher turnover, although collegiality and teacher commitment do. Schoolwide collegiality is associated with a 16 percent reduction in the odds of novice turnover, and commitment is associated with a 37 percent reduction. Despite the effects that these normative constructs have on turnover, they seem independent of the role that mentoring and interactive communication has on turnover – each induction component maintains roughly the same effect as in Model A2. However, the effect of supportive communications is diminished.

I add several organizational controls in Model A4; faculty influence is removed from this model because it made no significant contribution in Model A3. Among the six organizational controls (enrollment and its quadratic form are counted as one control), only school enrollment and school poverty level have a significant but opposite relationship to turnover, the latter accounting for a 21 percent increase in the odds of turnover. Furthermore, the coefficient for

enrollment squared was a statistically significant predictor, indicating that the

relationship between enrollment and turnover is curvilinear.[3]

Model A4 also indicates that a teacher's urban location is unrelated to

turnover. This result stands in contrast to previous research on induction

programs that has documented the particularly challenging issues facing novices

in urban schools, which in turn heighten their turnover rates (Fideler &

Haselkorn, 1999). The data used in this study do not show such a relationship.

One explanation may be that the dichotomous measure of a school's urban status

does not capture the complex milieu of ineffective leadership, school violence,

poor facilities and other conditions not measured by SASS that characterize the

most difficult urban school settings and place novices in circumstances where

they are likely to leave. Model A4 also indicates that rural school status is not a

significant predictor of turnover.

Finally, Model A5 presents all teacher, normative and organizational

characteristics found to be significant in Models A1 through A4. Model A5

makes apparent the independence of the induction components from the effects

of normative and organizational controls, and by comparison to Models A1

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[3] This result indicates that higher rates of turnover are associated with very small and very large schools, although for the largest schools the relationship between enrollment and turnover is positive because schools with more than approximately 2,500 students have higher turnover rates as school size increases. Such a u-shaped distribution of turnover rates is evident in the latest national summary reports on teacher turnover (Luekens, Lyter, Fox & Chandler, 2004; Table 3).

through A4, suggests that novices are somewhat isolated from the larger school context in which they work. Overall, the multivariate analysis of the effects of induction components on turnover support the results found in the bivariate analyses – that high quality mentoring, common planning and supportive communication each reduce the likelihood of turnover among novices. In the next set of models I explore further the independence of the induction components from teacher and school characteristics by testing whether any effects between induction components are *contingent* on teacher, normative and organizational controls.

Research Question 3: Teacher, Normative and Organizational Characteristics Play Important Roles in Reducing Novice Teacher Turnover

In the preceding section I presented several regression models, as well as bivariate t-tests, that examined the main effects that induction support components have on turnover. In this section I present how several interaction terms actually *adjust* the main effects – that is, moderate the main effects for any contingent relationships to turnover that the induction components have with control variables such as teacher preparation or school size. These analyses are presented in Table 4.4, and focus on the variables ascertained in Model A5 to be

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statistically significant. Models B1 through B3 examine interactions associated with teacher, normative and organizational controls, respectively. Model B4 examines only interaction effects found to be significant in Models B1 through B3. All regression models in Model Set B represent interaction effects for novice, infield teachers in average sized (n~840 students), high-poverty schools with normative climates having average levels of schoolwide collegiality and commitment. Variables significant at the p = 0.1 level are included in subsequent analysis.

In Model B1, I focus on the interaction effects between teacher characteristics and the three significant induction components: high quality mentoring, common planning and supportive communication. I calculate the moderated effect of high quality mentoring by adding two coefficients; the lower-order coefficient for high quality mentoring (*LO* = .06) and the higher-order coefficient for the interaction of high quality mentoring and infield status (*LO* = -.41). While the lower-order term for high quality mentoring is not statistically significant, Aiken and West (1991) explain that lower-order terms should be considered significant predictors of an effect when their higher-order counterparts are significant. Thus, the moderated effect of high quality mentoring shown in Model B1 demonstrates that high quality mentoring is associated with 29 percent reduction in the odds of turnover. The result

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substantiates the importance for novices to work in a subject area for which they are certified, since high quality mentoring has a greater effect in reducing the likelihood of turnover for infield teachers than out-of-field teachers. What may be even more salient, however, is that Model B1 suggests that unless high quality mentoring is offered to novices who have assignments *in* their field of certification, the intervention is not beneficial. The importance of being an infield novice in a mentoring relationship might stem from greater opportunities for professional exchanges about curricula and content-specific pedagogy between novice and mentor when the novice brings professionally mandated qualifications to the job.

Model B2 examines the moderating effects of schoolwide normative characteristics on induction support. The interrelationships between the induction components and a school's normative climate in this model are complex. First, mentoring interacts significantly with collegiality. Second, common planning interacts with commitment, and third, supportive communication interacts with commitment. Together, the *overall* effect of these three induction components and their respective interaction terms is a 66 percent reduction in the odds of turnover. Such a reduction is not surprising since these are among the largest interaction coefficients found across the regression models in this study. Furthermore, these large coefficients are consistent with research

that highlights the importance of normative climate (Rosenholtz, 1991);

documenting its widespread and powerful role in teachers' daily work lives.

Taken individually, the effects shown in Model B2 do not always have a

straightforward interpretation. Such is the case with the interaction between

supportive communication and schoolwide commitment. The interaction

between supportive communication and commitment is also significant but

amounts to a 77 percent *increase* in the odds of turnover. The positive coefficient

for the higher order interaction term indicates that the benefits of supportive

communication disappear when high levels of schoolwide commitment

characterize a school. While the negative role of high schoolwide commitment

seems at first inconsistent with research that expounds on the benefits of this

construct, other research indicates that veteran teachers (a group likely to have

strong attachment to their careers in teaching) sometimes adhere to isolating

conventions and attitudes that place barriers between themselves and novices

seeking assistance (Lortie, 1975; McLaughlin & Talbert, 2001). The variable used

to measure commitment in this study reflects general commitment to the

teaching career, making such a hypothesis viable for further research.

The two remaining normative moderating variables in Model B2 have a

more straightforward interpretation. The interaction between schoolwide

collegiality and high quality mentoring is a powerful moderating influence on

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induction support. The interaction between these two variables is associated with

a 56 percent reduction in the odds of turnover when combined with the

beneficial effect for mentoring. The interaction between common planning and

commitment is a similarly powerful moderating effect.

Model B3 examines the moderating effects of organizational

characteristics on mentoring, specifically how the effect of induction components

on turnover is contingent on the level of school enrollment. When enrollment is

high (i.e. one SD above the mean enrollment), the relationship between

mentoring and turnover is positive because the sum of the mentoring and

interaction coefficients is positive. In schools with smaller enrollments (i.e. one

SD below the mean enrollment), mentoring remains negatively related to

turnover. Model B3 specifies the mentoring-enrollment relationship more

carefully than Model A4 and Model A5. Those models, which did not examine

how mentoring effects are moderated by enrollment effects, seem to overestimate

the effect of mentoring. Model B3 also demonstrates that common planning and

supportive communication effects are not moderated by enrollment, and that a

school's poverty status is independent of induction component effects.

Model B4 includes all significant predictors from Model A5 and all

significant interaction terms from Models B1 through B3. When all the variables

in this model are considered together, it represents novices who receive high

quality mentoring, common planning and supportive communication in combination – a circumstance that Figure 4.2 indicates was available to about 3.7 percent of novices. The model also makes clear the importance of teachers' background and school context as moderating factors in the role of induction programs. For instance, teachers' infield status plays a strong role on turnover overall, as well as on the effect of high quality mentoring. Normative and organizational characteristics play a moderating role on high quality mentoring effect as well. Common planning and supportive communication are both moderated by commitment while mentoring is moderated by enrollment.

Conclusion: Induction Component Effects are Contingent on Teacher Background and School Context

Key components of teacher induction programs are distributed rather evenly among novice teachers nationwide. While some teacher and school characteristics, such as teachers' minority status and school size, account for some discrimination in how the components are available to novice teachers, the group differences noted in this study often account for fewer than 10 percentage points.

The even distribution of components does not imply that novices always receive the same type of induction support. This study found thirty different

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combinations of induction support components as reported by novices. The large number of different combinations suggests that, while teachers' background and organizational characteristics rarely distinguish the distribution of *each component*, a wide array of *support forms* are available nationwide.

Finally, this study concludes that the problem of novice teacher turnover may be abated by induction programs, yet the programs' promise is impacted by the complex milieu of organizational characteristics, normative climate and the professional backgrounds of novice teachers. Schoolwide normative characteristics account for the largest moderating effects, while one organizational characteristic (enrollment) had the smallest moderating effect. While in some cases teacher, normative and organizational controls reduce the benefits of induction support, in many circumstances the components of induction programs remain important interventions in reducing the likelihood of novice teacher turnover.

Table 4.3

Logistic Regression Analysis of the Likelihood of Novice Teacher Turnover (N = 3,172 teachers)

	A1			A2			A3			A4			A5		
	LO	OR	Sig	LO	OR	Sig	LO	OR	Sig	LO	OR	Sig	LO	OR	Sig
Induction components															
High Quality Mentor	-0.27	0.76	.004	-0.27	0.76	.005	-0.22	0.80	.022	-0.19	0.83	.049	-0.20	0.82	.046
Seminars or Classes	-0.07	0.93	.458							.					
Workload Reduction	0.22	1.25	.117[a]												
Common Planning	-0.31	0.73	.001	-0.30	0.74	.001	-0.26	0.77	.005	-0.26	0.77	.006	-0.27	0.76	.003
Supp Commun.	-0.28	0.76	.008	-0.29	0.75	.005	-0.17	0.84	.107	-0.21	0.81	.052	-0.20	0.82	.060
Teacher Controls															
Male				0.07	1.07	.501									
Minority				-0.09	0.91	.393									
Younger				-0.06	0.94	.564									
Older				-0.38	0.68	.199									
Adv. Degree				0.11	1.12	.349									
Infield				-0.37	0.69	.000	-0.30	0.74	.001	-0.33	0.73	.000	-0.33	0.72	.000
Normative Controls															
Collegiality							-0.17	0.84	.028	-0.23	0.80	.003	-0.22	0.80	.002
Commitment							-0.47	0.63	.000	-0.51	0.60	.000	-0.50	0.61	.000
Faculty Influence							-0.11	0.90	.155						

Source: U.S. Department of Education. 1999-2000 Schools and Staffing Survey.

Note: "LO" = log-odds "OR" = odds ratio.

a. The statistical significance of Workload Reduction, while close to a p=.10 level, was not included in subsequent analyses because it was not a significant predictor of turnover in the bivariate analyses and because of the very small number of novices who reported receiving this component.

Table continues.

Table 4.3, continued.

Logistic Regression Analysis of the Likelihood of Novice Teacher Turnover (N = 3,172 teachers)

	____A1____			____A2____			____A3____			____A4____			____A5____		
	LO	OR	Sig	LO	OR	Sig	LO	OR	Sig	LO	OR	Sig	LO	OR	Sig
Org. Controls															
Enrollment (z-score)										-0.25	0.78	.001	-0.27	0.76	.000
Enrollment * Enrollment										0.04	1.04	.094	0.05	1.05	.054
Urban										-0.01	0.99	.950			
Rural										0.10	1.11	.460			
Hi Lunch										0.19	1.21	.063	0.17	1.19	.067
Secondary										0.04	1.04	.703			
Student disc problems										0.02	1.02	.793			
Constant	-0.76	0.47	.000	-0.59	0.55	.000	-0.73	0.48	.000	-0.82	0.44	.000	-0.72	0.49	.000
Nagelkerke R²		.021			.028			.052			.062			.060	
Hosmer-Lemeshow ?²		12.66			18.59			4.15			22.52			11.33	

Source: U.S. Department of Education. 1999-2000 Schools and Staffing Survey.
Note: "LO" = log-odds "OR" = odds ratio. Shaded cells are significant a p = .10.

Table 4.4

Interactions Associated with Induction Program Effects on Turnover (N=3,172 teachers)

	B1			B2			B3			B4		
	LO	OR	Sig	LO	OR	Sig	LO	OR	Sig	LO	OR	Sig
Induction components												
High Quality Mentor	0.06	1.06	.710	-0.24	0.79	.013	-0.27	0.76	.042	-0.00	1.00	.998
Common Planning	-0.11	0.89	.455	-0.27	0.76	.005	-0.20	0.82	.005	-0.26	0.77	.004
Supportive Commun.	-0.16	0.85	.379	-0.13	0.88	.331	-0.22	0.80	.056	-0.13	0.88	.232
Teacher Controls												
Infield	-0.05	0.95	.819	-0.34	0.71	.000	-0.33	0.72	.000	-0.21	0.81	.053
Normative Controls												
Collegiality	-0.21	0.81	.004	-0.13	0.88	.344	-0.23	0.80	.001	-0.09	0.91	.307
Commitment	-0.52	0.60	.000	-0.76	0.47	.000	-0.51	0.60	.000	-0.84	0.43	.000
Organizational Controls												
Enrollment (z-score)	-0.28	0.76	.000	-0.28	0.76	.000	-0.22	0.80	.035	-0.35	0.71	.000
Enrollment * Enrollment	0.05	1.05	.041	0.04	1.04	.054	0.03	1.03	.183	0.04	1.04	.112
Hi Lunch	0.17	1.19	.060	0.18	1.20	.058	0.16	1.17	.426	0.17	1.19	.059

Source: U.S. Department of Education. 1999-2000 Schools and Staffing Survey.

Note: "LO" = log-odds "OR" = odds ratio

Table continues.

Table 4.4, continued.

Interactions Associated with Induction Program Effects on Turnover (N=3,172 teachers)

	B1			B2			B3			B4		
	LO	OR	Sig	LO	OR	Sig	LO	OR	Sig	LO	OR	Sig
Interactions												
Mentor*Infield	-0.41	0.66	.037							-0.40	0.67	.043
ComnPlan*Infield	-0.25	0.78	.178									
SuppComm*Infield	-0.06	0.94	.769									
Mentor*Collegiality				-0.58	0.56	.001				-0.47	0.63	.004
ComnPlan*Collegiality				0.25	1.28	.104						
SuppComm*Collegiality				-0.05	0.95	.810						
Mentor*Commitment				-0.09	0.91	.625						
ComnPlan*Commitment				-0.55	0.58	.001				-0.51	0.60	.001
SuppComm*Commitment				0.70	2.01	.000				0.72	2.05	.000
Mentor*Enrollment							0.34	1.41	.002	0.21	1.23	.043
ComnPlan* Enrollment							-0.13	0.88	.233			
SuppComm*Enrollment							-0.16	0.85	.181			
Mentor*HiLunch							0.21	1.23	.291			
ComnPlan*HiLunch							-0.18	0.84	.339			
SuppComm*HiLunch							0.02	1.02	.925			
Constant	-0.97	0.38	.000	-0.82	0.44	.000	-0.78	0.46	.000	-0.91	0.40	.000
Nagelkerke R²			.064			.077			.065			.079
Hosmner-Lemeshow ?²			14.12			21.47			11.17			11.82

Source: U.S. Department of Education. 1999-2000 Schools and Staffing Survey.

Note: "LO" = log-odds "OR" = odds ratio. Shaded cells are significant at the p =.10 level.

CHAPTER V

A USEFUL BUT NECESSARILY

INTRICATE INTERVENTION

Introduction

This dissertation examines in detail the distribution of five teacher

induction program components: high quality mentoring, seminars or classes for

beginning teachers, workload reduction, common planning and supportive

communication. It also examines how these components are related to different

levels of novice teacher turnover. In particular, it examines the relationship

between induction support and turnover in varying normative and

organizational contexts for different demographic and professional groups of

teachers, and describes how these contexts moderate the effects of induction

program components. In view of earlier research, this study extends the

empirical research literature on teacher induction by utilizing a survey data set

that permits for a representative, quasi-experimental analysis of induction

program components and their relationship to teacher turnover in different

school settings – an analytic approach not conducted in earlier studies.

Specifically, I use data from the 1999-2000 Schools and Staffing Survey (SASS)

because they measure several components of induction programs available to novice teachers and turnover among novice teachers.

This study presents new information that helps to fill gaps in the current induction program research literature in at least three ways. First, although many studies describe the form and design of specific induction programs in various communities and states (e.g., Southeast Center for Teaching Quality, 2003; Pan & Mutchler, 2000), this study uses standardized measures of program components that permit a consistent summary of program forms and their distribution across teacher populations and organizational settings nationwide. Second, previous research on induction program effects uses a variety of different outcome measures that complicates the synthesis of results across studies and fragments knowledge about induction programs. This study focuses on one outcome – novice teacher turnover – utilizing a relatively standard and accepted set of measures that focuses on key variables known to relate to teachers' decisions to leave or remain in the profession. Third, this study advances our understanding of how different forms of induction programs function for various teacher groups in different organizational settings. SASS data are well-suited to this purpose because they include nationally representative measures of many organizational and individual variables for each teacher who submitted information about the nature of their first year induction experience. In using

these data, this dissertation stands in contrast to existing studies because its analyses and conclusions focus on school context and teacher background, which prove to be important moderators of program effects.

I use descriptive and inferential statistics to examine the SASS data. Three research questions guide my analyses:

Question 1

What induction components are most prevalent and what are their distributions among different demographic or professional groups of teachers in different organizational contexts?

Question 2

What is the relationship between induction program components and teacher turnover?

Question 3

How does the relationship between different components of induction programs and teacher turnover vary for different demographic or professional groups of teachers in different school settings?

To answer these questions, I use a sample of 3,172 novice public school teachers from the SASS. The sample consists of novices who had two or fewer years of experience in order to capture information about a salient phase in the teaching profession – a phase known for particularly arduous working conditions that are commonly associated with high turnover rates. From this group of novice teachers, I exclude teachers who worked in more than one public school in order to ensure that the school effects I model are linked to the novices' first year of teaching.

This examination of induction programs has potential policy implications because it ascribes clear effect sizes to discrete induction program components currently in use nationwide and demonstrates how professional and organizational characteristics moderate the impact of induction program components. Since only the very latest research (Smith & Ingersoll, 2004) utilizes large scale survey data and standardized measures of induction program components, policymakers have been limited to making broad-brushed claims about the programs based on local program evaluations and narrowly constructed research designs. This study, however, produces generalizable findings about the possible effects of specific components in different professional and organizational contexts for those who build policies and programs intended to support effective teacher induction.

In the following sections of this chapter, I summarize the research findings, discuss them in light of current research and policy issues on teacher induction programs, note limitations of this study, and suggest avenues for further research.

Overview: Evenly Distributed and Effective Interventions

This study indicates that several components of induction support are relatively common and evenly distributed, yet their effect on turnover is contingent on certain teacher, normative and organizational factors. I review the findings in order of the research questions.

Distribution of Induction Support is Generally Even

Many components of induction support, particularly seminars or classes for beginning teachers, and supportive communication, are common among novices – these two components are available to 70 and 80 percent of novices, respectively. Other components are less common, available to roughly half of novices, while workload reduction is least common, available to only 10 percent of novices. The distribution of induction support is relatively even among teachers and schools according to several characteristics, although teachers' minority status, infield status, suburban status and school enrollment account for

distributional differences more than other characteristics. While the distribution

is even (most differences between groups account for 10 percentage points or

less), the largest relative differences in support occur for minority teachers and

their receipt of seminars or classes, the provision of supportive communication

among male teachers and the provision of seminars or classes among rural

schools. The relatively even distribution of induction components is congruent

with earlier surveys of state level induction policies that show an increasingly

uniform promotion of plans for induction programs in states' school districts

(Skinner & Staresina, 2004). While each component is relatively evenly

distributed across teacher and organizational characteristics, there is no evidence

in the SASS data that certain combinations of these components (i.e. program

designs) are very common. I examine the frequency of every combination of

induction components reported by novice teachers in this sample. The most

common combination of components is seminars or classes and supportive

communication, which are available together to about 15 percent of novices.

Induction Support Reduces the Likelihood of Novice Teacher Turnover

I use t-tests to measure the significance of mean differences between

stayers and leavers for each induction component. Overall, about 23 percent of

novice teachers in this sample left their teaching positions between 1999-2000

and 2000-2001. My analysis indicates that higher levels of induction support are associated with lower levels of teacher turnover for four of five induction components: high quality mentoring, seminars or classes, common planning and supportive communication. These components on average are associated with a 6-point difference between the percentage of stayers and leavers; common planning accounts for the largest difference. Workload reduction is not associated with teacher turnover, although the estimates of this component's effect may be influenced by the rarity of its occurrence. While advocates bemoan the dearth of programs employing this component (AFT, 1998), the cost of reducing teachers' schedules and class preparations may be a barrier to its widespread implementation.

The results from the multivariate logistic regression analyses complement the bivariate analyses of induction effects. In Chapter IV, Table 4.3 indicated that high quality mentoring, common planning and supportive communication reduced the odds of turnover, on average, by about 25 percent. These relationships remained relatively similar after controlling for teacher characteristics (i.e., infield status), teachers' normative climate (i.e. schoolwide collegiality and commitment), and organizational characteristics (i.e. school enrollment and high poverty status).

Induction Support Effects Are Moderated by Teacher, Normative, and Organizational

Characteristics

While several of the induction components show promise in reducing

turnover in and of themselves, their direct effects must be adjusted by their

interaction with teachers' background, teachers' normative climate and/or

organizational characteristics. The multivariate analyses of program effects that I

presented in Table 4.4 show that the components have important roles in

reducing turnover rates, but that each component's effect varies according to

teachers' infield status, schoolwide collegiality and commitment, and school

enrollment. Below, I illustrate these interactions in Figures 5.5a through 5.5e,

each of which draws on results from Model B4 (Chapter 4, Table 4.4). Each figure

shows the probability of turnover for each induction component as moderated

by one teacher, normative, or organizational factor. The vertical axis indicates the

probability of turnover for novice teachers, and each bar in these figures

represents a "high," "average", or "low" value of a moderating variable, with the

exception of infield status, which has only "high" or "average" values that

correspond to its values of zero and one.

High Quality Mentoring Effects Are Contingent on Enrollment, Collegiality and Infield

Status

Figures 5.1a, 5.1b and 5.1e show that mentoring interacts with teacher

(infield status), normative (collegiality) and organizational (enrollment) factors.

The most straightforward and easily interpretable interaction is with infield

status. When mentored teachers work out-of-field, mentoring has no effect on

teacher turnover (i.e., the probability of leaving school is 50 percent); it is only

when novices work infield that mentoring reduces the likelihood of attrition by

more than just a "fifty-fifty" chance (Figure 5.1a).

The interactions with school size and collegiality are more complex.

Smaller-sized schools and schools with high-levels of collegiality magnify the

benefits of high quality mentoring, while larger-sized schools and schools with

low-levels of collegiality diminish these benefits (Figure 5.1b; Figure 5.1e). More

surprisingly, though, the relationship between mentoring and turnover is

actually positive in larger-sized schools and schools with low-levels of

collegiality – that is, having a high-quality mentor in these organizational

settings is actually associated with a higher probability of teacher turnover.

While this does not necessarily mean that mentoring causes teacher attrition in

these settings, it does suggest that the effects of mentoring on teacher turnover

may be more complex than we realize.

Common Planning Time Effects Are Contingent on Commitment

While the interactions between mentoring and enrollment may require more complex interpretations, the relationship between common planning time and schoolwide commitment is relatively uncomplicated. The results demonstrate that schoolwide commitment levels interact beneficially with common planning time (Figure 5.1c). When implemented in schools with higher schoolwide commitment levels, novice teachers receiving common planning time tend to remain in their teaching positions more than novices who receive common planning time in climates with lower commitment levels. In fact, when schoolwide commitment is high, common planning time is associated with a probability of turnover equal to 0.32. Conversely, teachers who receive common planning time in schools with low schoolwide commitment benefit much less from this component; the effect suggests that the provision of common planning time in low-commitment environments is positively associated with turnover.

Supportive Communication Effects Are Contingent on Commitment

Like the interactions between mentoring and school size, the interaction between supportive communications and commitment is somewhat surprising. On average, supportive communication has a relatively weak relationship to

teacher turnover. In schools with low levels of commitment, however, supportive

communication from administrators decreases the probability of turnover,

perhaps because such supports are more valuable to novice teachers in these

settings (Figure 5.1d). The converse is less expected – namely, that supportive

communication in schools with high levels of commitment is associated with a

higher probability of teacher turnover. Again, while such a finding does not

mean that supportive communication causes turnover, it does suggest that the

effects of induction programs on attrition are less straightforward than

policymakers have described.
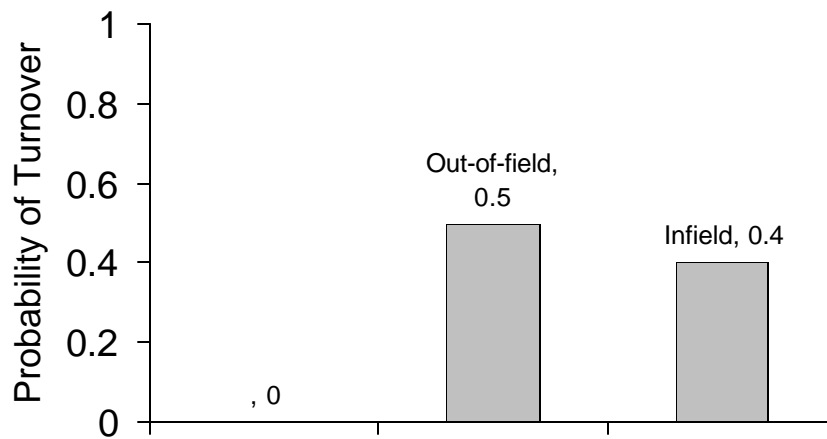
Figure 5.1a: High Quality Mentoring is More Effective in Reducing Turnover for
Infield Novices
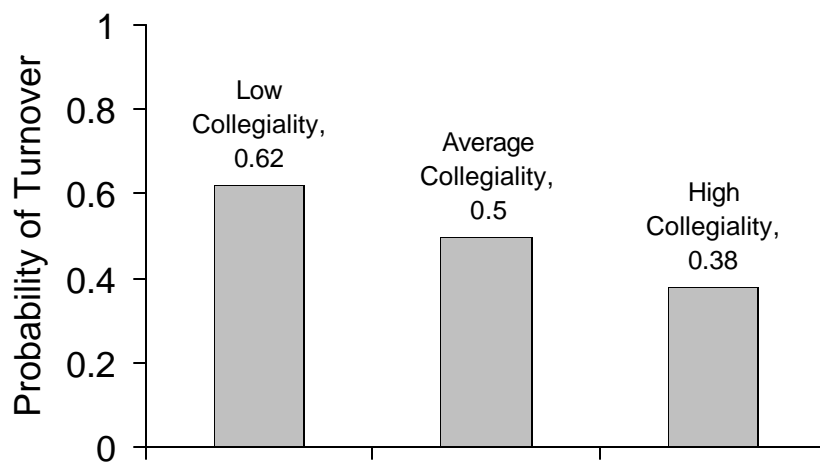
Figure 5.1b: High Quality Mentoring is More Effective in Reducing Turnover in High Collegiality Schools
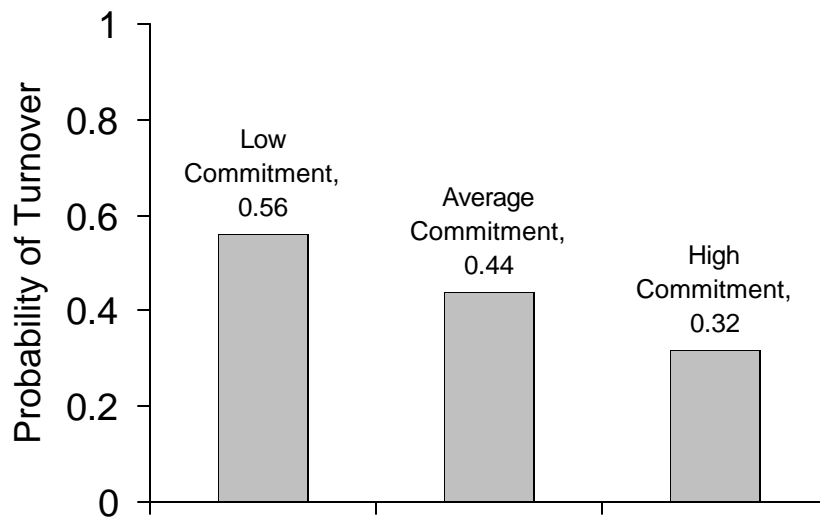
Figure 5.1c: Common Planning is More Effective in Reducing Turnover in High Commitment Schools
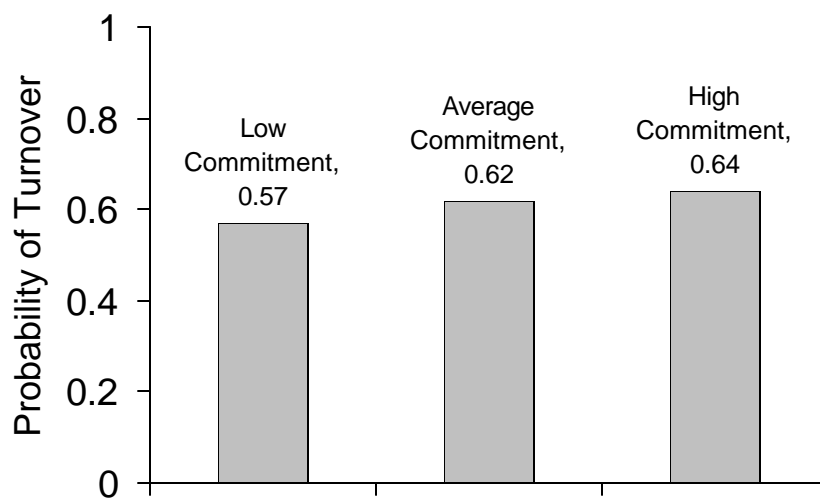
Figure 5.1d: Supportive Communication is Less Effective in Reducing Turnover in High Commitment Schools
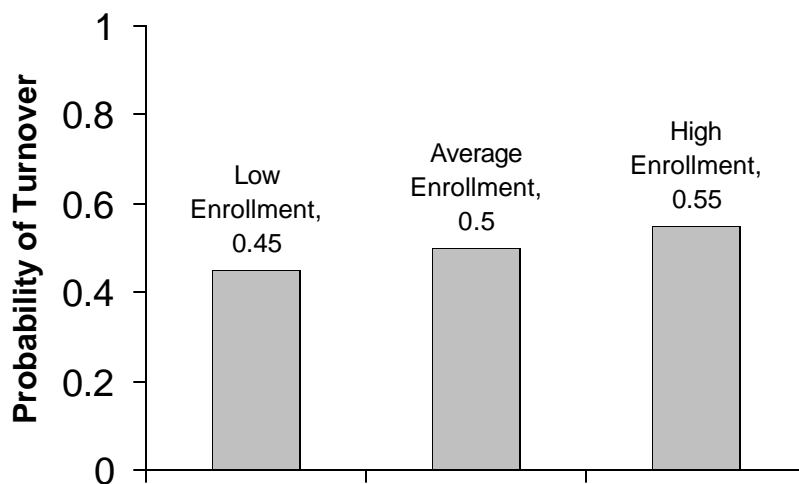
Figure 5.1e: High Quality Mentoring is Less Effective In Reducing Turnover in High Enrollment Schools

Assembling a New View of Induction Programs

This study deconstructed what might be termed the "aggregate view" of

induction programs that has typically dominated the empirical research base – it

described how pieces of induction programs have different and sometimes

conflicting roles, especially when employed in certain school contexts, whereas

earlier research typically analyzed programs as a black box; that is, the inter-

workings of program components and their context were not analyzed. By

examining the *components* of induction programs this study -- while confirming

the optimism of earlier induction effects literature -- directs future induction

programs research and implementation to take account of the complex ways in

which different components of teacher induction can interact with context and

teacher background to affect program outcomes. The results, which show that

specific induction program components remain important factors in reducing

novice teacher turnover, validate the basic rationale for induction programs

because they substantiate more reliably the likelihood that specific types of

supports decrease new teacher turnover. Yet these results also suggest that in

practice induction programs may look very different across sites and respond to

school contexts in ways that have not been observed in earlier research. The new

view of induction programs has more substantial empirical evidence to support

program implementation, but also reasons for more complex explanations of program effects and program implementation. Below, I comment on how this study informs theories about induction programs after describing several policy implications from this study.

Implications for Policy Implementation

The present study conducts descriptive and inferential analyses of induction components and their effects. These two types of analysis map to two different but related implications. First, this study implies that induction components should not be viewed as "one size fits all" policy interventions that can be introduced to any novice or school with an expectation that they will reduce teacher turnover. This study suggests that at least four variables -- school size, teachers' infield certification status, and the levels of commitment and collegiality in schools -- all relate to the effectiveness of specific induction program components. Consequently, policymakers may want to consider these factors in designing specific induction programs (in ways that I specify below), because generically designed policies may lead to disappointing or even unintended consequences in terms of new teacher turnover.

Policymakers who intend to reduce new teacher turnover may develop new teacher induction programs that take account of existing contextual

variables that I described above, but the most effective policies may be those that also promote school contexts that enhance the benefits of induction programs for new teachers. Darling-Hammond, Berry, Haselkorn and Fideler (1999) described networks of schools and universities, and the concomitant work of teachers and university faculty in those networks, that formed professional development schools (PDSs) in Cincinnati – their work an example of larger reform contexts that harbored and enhanced Cincinnati's induction program. The authors explained that the close ties between university and public schools facilitated in-school seminars and close supervision for novices in the induction program. Thus, induction programs operating in larger teacher development systems like a PDS seem to have advantages over programs that operate outside such environments. Connecting induction programs to a broader framework of teacher development develops interdependent teacher support mechanisms known to be effective in other national studies of new teacher support (Johnson, et al., 2004).

Education decision-makers can pursue teacher development policies and programs less complex than PDSs to enhance induction programs as well. For instance, policies may encourage districts to configure schools of specific sizes, and ensure that teachers are recruited and distributed across schools in ways that minimize out-of-field teaching. Policymakers can also support programs that

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build collegial communities in schools, although defining and assessing such

communities may be less straightforward than instituting enrollment policies. By

adjusting policies related to the outcomes of teacher induction programs, rather

than the programs themselves, policymakers can help induction programs

reduce novice teacher turnover. In light of the importance of context, this study

points to several program implementation scenarios:

- Induction programs that utilize common planning, and which are
  put into practice in schools known to have low faculty collegiality,
  should be expected to have smaller effects than when common
  planning is implemented in schools with higher levels of teacher
  collegiality. Thus, prior to utilizing this program component,
  policymakers may require program designs to be minimally
  based, to the extent possible, on the assessment end enhancement
  of faculty collegiality.

- When teachers work out-of-field in high enrollment schools
  characterized by low faculty collegiality, policymakers should
  also expect to substantial detriments to the benefits of high quality
  mentoring. Specifically, as policymakers employ high quality
  mentoring in designs of teacher induction programs, they must
  ensure that program designs first require a match between mentor

and novice because mentors who were not matched to the same

field as the novice had no significant effect on the novice's

turnover. Second, program designs must insure that novices bring

infield certification to their main teaching assignments when

working with these mentors. Third, high quality mentoring must

be considered in light of the teachers' normative climate,

particularly schoolwide collegiality, which when lacking hinders

the full benefits of high quality mentoring. The complex

interaction between mentoring and these variables suggests that

policy makers consider the extensive structures of professional

development schools and how they might better germinate the

fruits of high quality mentoring.

- Policies that promote supportive communication from

administrators must consider the quality of teachers' schoolwide

commitment. The implementation of supportive communication

is complicated because it functions well in contexts that may

compromise other program components, particularly if high

levels of schoolwide collegiality occur in tandem with high levels

of schoolwide commitment (likely a common occurrence). In this

light, supportive communication seems a less prudent choice of

components because unlike high quality mentoring and common planning, it functions less well in positive normative climates. [1]

These different scenarios imply that *generic* induction component implementation is unwarranted, since teacher background and school context is related in important ways to the components' effect on turnover. Overall, this study implies that no induction program should be designed without keen attention to school context and teacher background. Policymakers should pay particular attention to high school enrollments, insufficient teacher preparation, and low faculty morale (i.e. low collegiality) before utilizing induction program components.

A second implication of this study concerns the wide array of support types available to novices, which I demonstrate by an examination of the frequency of component combinations (Chapter IV, Figure 4.2). The array of induction program forms makes clear that there is not one type, or even a small number of types, of induction program being implemented among public school novices. Moreover, the perceptual nature of certain induction components -- what one teacher perceives to be a helpful mentor may be quite different from one novice to another – may even contribute to an *under*estimation of the true incidence of different program forms. Such matters of perception suggest that a

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[1] The coding of the dependent variable, which includes both teacher transfers and teacher exits, may help explain some of these surprising results.

greater number of program forms may be present than were indicated in Figure

4.2, because for each report of a component a larger variety of component

manifestations may exist. The role of perceptions also suggests that designing a

system of support must be closely tied to how novices define their needs.

Another explanation for the diffusion of program forms links to theories

that characterize policy implementation as part of a loosely-coupled

administrative structure (Weick, 1976), whereby policy intentions degrade

among multiple actors with different motivations at various levels of the

education system. Under the "loosely coupled" banner two explanations of

program diffusion are plausible. First, the large number of support types may

result from the absence of clearly implemented and adequately funded induction

policies at the state level, which if more widely available might tighten the

operation of programs at the district level. In fact, the most recent reports of

statewide induction program funding make clear that mandates for induction

programs frequently lack funding (Skinner & Staresina, 2004). Second, the range

of program types evident in the SASS data may simply be due to independent

program designs that germinate at the district level, or from local universities

that aid these districts in program design. Such local actors may not necessarily

pursue induction with an eye to tailoring the programs to their needs; as I

speculated above. Whatever the reasons for the loose arrangement of induction

components among novices, this study underscores the need to consider

tightening program implementation in an effort to design the most effective

programs.

Implications for Theory of Induction Programs

This study suggests at least four implications for the theory of new teacher

induction. Three of these implications center on the complex interactions

between aspects of the programs, normative climates in which they are

embedded, and the professional background of participating teachers. Some of

these interactions are relatively straightforward and easy to understand; others

are more complex and require more extensive investigations. The fourth and

final implication concerns how these interactions might guide theories about

how novice teachers are socialized. I discuss each of these implications in turn.

Mentoring

Infield certification status, collegiality, and school size impact the benefits

of high quality mentoring. This study found that mentoring has beneficial effects

only when novices are certified in the content area that they teach; when novices

are teaching out-of-field there are no positive effects for mentoring. The

detrimental effect of out-of-field teaching on high quality mentoring may be due

to the subject match between novice and mentor. The subject match may create

tension for mentors who view their novices as arriving in their first teaching

positions with less than the minimum qualification to progress to higher levels of

teaching performance. Lortie (1975) suggests that it is critical to enter teaching

with a level of professional knowledge and skill that allows teachers to engage in

a professional, collaborative school culture; this link appears to be important also

if mentors are to provide novices with beneficial forms of support. Theories

about teacher induction should take account of the importance of new teacher

preparation in building professional knowledge and in matching mentors with

novices.

Collegiality and school size also influence the effects of mentoring. The

positive effects of mentoring appear to get a "boost" if novice teachers work in

highly collegial environments or smaller school settings. Other research has

suggested that positive effects of collegiality are enhanced in smaller school

environments (Cotton, 2001; Wasley, 1997). Some of this research has also

suggested that normative climate may be impacted by teachers who perform

mentoring roles such as those found in most induction programs; Rosenholtz

found that "teacher leaders" can serve as catalysts to greater schoolwide

collaboration, which is an important element of teachers' normative climate

(Rosenholtz, 1989).

More surprising, though, are the moderating effects of low-collegial schools and large schools. In these environments, novice teachers with high-quality mentors were more likely to leave the school or leave teaching. One possibility may be that high-quality mentoring serves a different function in some settings than others – that is, under some circumstances, high-quality mentors may encourage some novice teachers to transfer to better schools or even leave the profession if teachers find teaching too stressful. Such a set of events echoes Hargreave's and Dawe's (1990) observation of "contrived collegiality" in mentor-novice relationships – when mentoring programs occur in low collegial environments induction program goals may seem forced among so many isolated teachers in larger schools. While the data presented here cannot confirm such an interpretation, theories of induction and mentoring should consider those circumstances when high-quality mentoring might require encouraging teacher turnover.

Common Planning

This study also finds that there is a complex relationship between common planning with teachers in the novice's subject area and schoolwide comm.itment to teaching. As schoolwide commitment increases, so do the benefits of common planning on teacher turnover; as schoolwide commitment

declines, the effects of common planning time actually reverses. While this

finding suggests that common planning time, at least under some circumstances,

may promote teacher turnover, such an interpretation may be warranted.

Requiring novice teachers to spend time "planning" within an environment of

less committed peers (perhaps a group of cynical veteran teachers) may be more

harmful than allowing novices to be isolated in their classroom. Theories of

induction should consider not only this relationship but other possibilities for

where programs may have unintended, detrimental consequences.

Supportive Communication

A more perplexing interaction was observed between commitment and

supportive communication. While supportive communication with

administrators is especially beneficial in schools with low levels of commitment,

it appears to be "harmful" in schools with high levels of commitment. This is

especially surprising given that high levels of commitment increase the benefits

of common planning. One possibility may be that high levels of commitment

represent a different type of environment for novices when coupled with

supportive interactions with teachers (i.e., common planning) than when

coupled with supportive interactions with administrators. Under the latter

circumstances, novice teachers may be relatively isolated from a tightly-knit and

committed veteran staff, with administrators left to take primary responsibility for support. Such a situation may make it more difficult for new teachers to integrate themselves into the social networks that prevail in schools, especially if the networks are exclusive. This explanation would correspond with earlier research that highlights how some veteran school cultures isolate novices (McLaughlin & Talbert, 2001). While the exact meaning of these findings are beyond the scope of these data, they do suggest that theories of teacher induction programs should consider the nature of the school environments in which teachers work.

Socializing Novice Professionals

Finally, this study suggests a theoretical relationship between new teacher induction programs and teacher professional socialization theory. For instance, this study finds that schoolwide collegiality reduces teacher turnover by increasing the effect of teacher induction. This result reflects Lortie's (1975) observation that as members enter an occupation, the extent to which they work together to solve problems and prepare to perform their work solidifies their collegiality and strengthens their commitment to the occupation. That is, Lortie suggests that as novice teachers receive support from their colleagues, they benefit from an increase in collegial relationships (Lortie, 1975).

One such benefit may be the decline in teachers' reliance on psychic rewards, which are based on teachers' relationships with students and their personal ideas about teaching practice, as they attach to professional standards and exchanges that are inherent in mentoring and other aspects of induction programs. Second, what Lortie termed the "tentativeness of future commitments" – whereby the absence of promotional avenues weakened teachers' commitments -- might also lessen when the structure of induction programs offer new professional opportunities for novices and their mentors. Individuals working to build theories of new teacher induction should consider the complex relationship between the outcomes and structure of teacher induction programs and the ways in which teachers are generally socialized into the profession of teaching.

Limitations

The primary limitation of this study stems from the use of a generic data set. The SASS is a federal survey that is designed to serve multiple purposes. Consequently, SASS can be used to assess a wide range of education issues but no single issue can be investigated in great detail. This is certainly true in the area of teacher induction, where data are not intended, nor able to provide, for a comprehensive analysis of teacher induction programs. In short, many of the

limitations of this study are a consequence of the nature of secondary data analysis and the use of a general purpose survey to investigate induction program effects. The research design and SASS induction data limit the findings of this study in at least three key ways, each of which I describe below.

Sample

SASS was not designed to support research on novice teachers specifically, nor on novice attrition or novice induction. Because this study sought to describe how first year induction support among novices was related to their subsequent attrition, many cases from the main SASS sample were dropped. A larger novice teacher sample might increase the reliability of some analyses, in particular for analyses of less common induction components, such as workload reduction, or estimates of schoolwide context, such as collegiality. Since recent research has heightened attention on novice teachers, and explained how important their early experiences are to their future success as teachers (e.g. Darling-Hammond, 2003; Johnson, et al, 2004), future SASS administrations should greatly increase the sample of novice teachers; both within and across schools.

Independent variables

This dissertation improves upon earlier research by introducing more standardized measures of induction components. SASS measures the availability of several program components among novice teachers and, in turn, permits for reliable group comparisons unavailable in earlier studies. Nonetheless, the measures of induction components utilized in this study are limited. For instance, while this study documents that new teachers rarely receive a reduced workload during their first years of teaching, the rarity of this component within the sample also complicates its analysis.

The measure of seminars or classes as a component of new teacher induction is also limited – SASS contains one variable to represent this component of induction. Other studies of teacher induction programs demonstrate that many different types of seminars or classes are offered to novices, and it would be beneficial to analyze which types are more effective in varying contexts. Similarly, information concerning the quality of different types of induction components, including seminars or classes, is also unavailable in the SASS data.

In a related vein, the SASS survey does not ask teachers about the duration of their induction program. In this study, I operationalize induction support as a one-year intervention. While many programs are intended to last

one year, some programs last less than one year and others are designed to provide support over multiple years. It is possible that program effects vary according to the length of the induction program. However this study cannot make conclusions about the relationship between program duration and program outcomes because of limitations of the SASS data.

Finally, this study does not control for the role of other teacher-focused interventions, such as the presence of professional development programs, the work of professional development schools, curricular reforms, and other policy contexts that may well promote the aims of induction programs. Controls for these "macro-level" policies variables would certainly improve our understanding of how induction programs might benefit from district or even state-level program interventions.

Dependent Variable

I assigned novices who moved from one school to another to the same group of novices who exited teaching because either type of departure from a school is a concern of many induction programs. That is, induction programs are typically concerned with reduce attrition generally, regardless of whether the attrition results from a move or a permanent exit. Second, by lumping "movers" and "leavers" together, this study was able to utilize interaction terms in a

logistic regression analysis, whereas using a three-category outcome measure (i.e., "stayers" "movers" and "leavers") would require multinomial logistic regression, thereby complicating the study of moderating effects. While this rationale is both tied to the purposes of induction programs and dedicated to a practical methodology, it stands apart from literature that differentiates the motivations of "movers" and "leavers" (e.g. Lankford, Loeb & Wyckoff, 2001).

Teachers' Normative Climate

This study finds that indicators of teachers' normative climate, specifically schoolwide collegiality and commitment, are important factors in making sense of induction program outcomes. However, this finding is based upon potentially unrepresentative measures of normative climate in cases when the number of sampled teachers in each school is low. Furthermore, I needed to make the assumption that normative climate was homogeneous within schools, whereas earlier research (McLaughlin & Talbert, 2001) suggests that it may vary across academic departments within the same school. These analyses may under estimate the direct and moderating effects of normative climate on teacher turnover.

Longitudinal Data

Induction program effects and schoolwide normative climate may have a symbiotic relationship – that is, induction effects may influence the normative climate in a school just as the normative climate in a school influences induction effects. Unfortunately, I could not investigate this possibility because SASS data provide longitudinal information only for novice teacher turnover, thereby prohibiting an analysis of whether induction support "causes" different levels of normative climate or vice-versa. Such relationships are plausible and warrant the analysis of more complex causal patterns between induction support and schoolwide normative climates.

Future Research

This study uses a generic data set to uncover evidence that the specific components included in induction programs and the contexts in which they are implemented impact new teacher attrition, but the conclusions of this study are limited by the generic nature of the data. Future research on teacher induction programs should rely on more developed, complex datasets that employ more detailed and comprehensive measures of induction programs in at least three ways. First, data should be collected and analyzed that examine the quality of

specific program components.[2] Second, data that measure a larger number of

induction program components should be collected and analyzed, such as

mentor background, mentor training, program and program participant

evaluations, the quality of novice-focused seminars or classes, program

leadership, program funding and other resources, and the exact nature of novice

workloads. Third, larger samples of novice teachers are necessary to understand

with greater reliability the relationship between components of support and

various outcomes. A larger novice sample would help not only to measure

induction support, but also to estimate schoolwide contexts among novices and

their veteran colleagues. For instance, novices were sampled in only about 30

percent of schools in the main SASS sample, and the total number of teachers

sampled in these schools was unrepresentative of the school's entire teaching

faculty.

With more comprehensive measures of induction components available,

future studies could answer questions that were uncovered during the course of

this study. For instance, what types of mentoring would work in large schools, or

for uncertified teachers? Should mentoring be more intensive for uncertified

teachers, or not offered at all? Are more frequent meetings between novice and

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[2] SASS includes several measures of teachers' professional development opportunities, however, these variables were not utilized because they do not refer specifically to first year teaching experiences. In this sense they are viewed as more generic measures of working conditions, and are beyond the scope of this study.

mentor a means to improve the effects of mentoring for new teachers in large

schools? What types of mentoring relationships are most effective in larger

school climates? Do mentors who conduct summative evaluations of novices

have different effects on novice turnover than mentors who conduct formative

evaluations?

With enhanced data, future research might also delve further into the

nature of interactions between teacher, normative and organizational

characteristics and induction components. Above, I hypothesized that the

benefits of supportive communication weaken in high schoolwide commitment

environments because in working with administrators novices become isolated

from highly committed yet exclusive teacher networks within a school. Future

studies that collect more information about the individuals who supply

supportive communication, the quality of supportive communication itself, and

more robust measures of teachers' schoolwide commitment, would permit more

precise descriptions of these interaction effects. For instance, my hypotheses

about tightly-knit teacher groups in high commitment environments being

exclusive of novices might be tested with data about the extent to which

experienced teachers are committed to mentoring itself, or with measures of their

general attitudes about sharing expertise. I also commented on the benefits of

small schools and high collegiality for mentoring. Future research might explore

this topic by examining interactions between collegiality and school size prior to interpreting their interaction with mentoring.

Future research should also explore the relationships between induction programs and the quality of normative climates in which they operate. This line of inquiry must investigate fully the different organizational and normative conditions that both promote and demote the benefits of induction support on turnover. Subsequent studies might focus on schools known to have high schoolwide commitment levels which can serve as "critical cases" (Yin, 1994) that might better illuminate how mentoring functions in this type of environment. Similar case study methods might be used in large schools, or among a larger group of out-of-field teachers, to further uncover patterns of behavior regarding mentoring and novices' decisions to leave the teaching profession. Finally, a larger number of normative constructs may be developed and measured longitudinally to explore hypotheses concerning how induction programs and normative climates impact one another. Such lines of research may exploit more sophisticated analytic methods, such as structural equation models, and ultimately lend insight into the induction *process.*

The induction process, then, remains a realm of investigation replete with bigger questions but which are not approachable with SASS data. For instance, are induction programs more likely to enhance normative climates, or do

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normative climates tend to enhance program effects more? Do certain reciprocal

patterns have a greater likelihood in larger schools, or among infield novices?

Studies of the induction process might even utilize more detailed information

about novices' biographies, particularly since the importance of teachers'

biographical history remains unaccounted for in any study of teacher induction

programs. Studies that draw longitudinal relationships between "quantified"

measures of teachers' biographies and the outcomes of new teacher induction

programs could generate new avenues of study that combine individual

psychology and policy outcomes in novel ways. In doing so, such studies would

compare multiple phases of teachers' socialization and permit for a description

of how induction programs and specific aspects of programs influence the larger

process of becoming a teacher.

APPENDIX A

1999-2000 SCHOOLS AND STAFFING SURVEY

TEACHER QUESTIONNAIRE

The complete 1999-2000 Schools and Staffing Survey, Public School Teacher

Questionnaire, was distributed to over 40,000 public school teachers during the 1999-

2000 school year. The questionnaire, nearly 50 pages long, follows in its original form, as

produced by the U.S. Census Bureau. This questionnaire is also available for download at

http://nces.ed.gov/surveys/sass.

U.S. DEPARTMENT OF EDUCATION
NATIONAL CENTER FOR EDUCATION STATISTICS

Conducted by:
U.S. DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. CENSUS BUREAU

PUBLIC SCHOOL TEACHER QUESTIONNAIRE
SCHOOLS AND STAFFING SURVEY
1999–2000 SCHOOL YEAR

(Please correct any errors in name, address, and ZIP Code.)

THIS SURVEY HAS BEEN ENDORSED BY:

American Association of
School Administrators

American Counseling Association

American Federation of Teachers

Council of Chief State School
Officers

Council of Great City Schools

Department of Middle Level
Services, National Association of
Secondary School Principals

National Association of Elementary
School Principals

National Association of Secondary
School Principals

National Center for Improving
Science Education

National Council of Teachers of
Mathematics

National Education Association

National Middle School Association

NOTICE

FORM SASS-4A
(11-2-99)

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DEAR TEACHER:

WHO IS CONDUCTING THIS SURVEY?

The National Center for Education Statistics (NCES) of the U.S. Department of Education requests your participation in this survey. The U.S. Census Bureau is conducting this survey by the authority of Section 405(b) of the National Education Statistics Act of 1994, as amended (20 USC 9003).

WHY IS NCES SPONSORING THIS SURVEY?

The purpose of this survey is to obtain information about teachers, such as teaching field, teaching workload, and teaching experience. We will report your data only in statistical summaries so that individuals cannot be identified.

WHY SHOULD YOU PARTICIPATE IN THIS SURVEY?

We are conducting this survey with only a sample of teachers. Therefore, the value of your individual contribution is greatly increased because it represents many other teachers. We encourage you to participate in this voluntary survey.

WHERE SHOULD YOU MAIL YOUR COMPLETED QUESTIONNAIRE?

Please return your completed questionnaire in the enclosed envelope. If you do not have the return envelope, please call 1-800-221-1204, or mail your questionnaire to:

U.S. Census Bureau
ATTN: CPB
1201 E. 10th Street
Jeffersonville, IN 47132-0001

THANK YOU FOR YOUR COOPERATION IN THIS IMPORTANT EFFORT.

SINCERELY,

**GARY W. PHILLIPS
ACTING COMMISSIONER OF EDUCATION STATISTICS**

FORM SASS-4A (11-2-99)

INSTRUCTIONS

a.

b.

The person named on the label -

0050   1 ☐ Has transferred to another school

2 ☐

3 ☐

4 ☐ Has retired

5 ☐ Is deceased

> **Please STOP now and return this questionnaire to the U.S. Census Bureau. Thank you for your time.**

c.

We suggest using a pencil or a ballpoint pen to answer this questionnaire.

If you have any questions, call the Census Bureau at 1-800-221-1204. Someone will be available to take your call Monday through Friday, between 8:30 a.m. and 5:00 p.m. (Eastern time).

Please keep count of the time you spend completing this questionnaire. At the end of the survey, you are asked to record the amount of time needed to complete it. Please record the time you begin.

☐ : ☐ Time started

YOUR COMMENTS

I

GENERAL INFORMATION: Items 1-7
This section asks for general information about your teaching and other experiences, and whether or not your current school is a public charter school.

1a. **How do you classify your main assignment at THIS school, that is, the activity at which you spend most of your time during this school year?**

☞ *Mark (X) only one box.*

0051
1. ☐ Regular full-time teacher
2. ☐ Regular part-time teacher
3. ☐ Itinerant teacher (i.e., your assignment requires you to provide instruction at more than one school)
4. ☐ Long-term substitute (i.e., your assignment requires that you fill the role of a regular teacher on a long-term basis, but you are still considered a substitute)
5. ☐ Short-term substitute
6. ☐ Student teacher
7. ☐ Teacher aide
8. ☐ Administrator (e.g., principal, assistant principal, director, school head)
9. ☐ Library media specialist or librarian
10. ☐ Other professional staff (e.g., counselor, curriculum coordinator, social worker)
11. ☐ Support staff (e.g., secretary)

b. **Which box did you mark in item 1a above?**

0052
1. ☐ Box 1 → (*GO to item 3 on page 6.*)
2. ☐ Box 2, 3 or 4 → (*GO to item 2 on page 6.*)
3. ☐ Box 5, 6 or 7 → **Please STOP now and return this questionnaire to the Census Bureau. Thank you for your time.**
4. ☐ Box 8, 9, 10 or 11

c. **Do you TEACH any regularly-scheduled class(es) at this school?**

☞ *If you work as a library media specialist or librarian at this school, do not include classes in which you teach students how to use the library (e.g., library skills or library research).*

0053
1. ☐ Yes → (*GO to item 2 on page 6.*)
2. ☐ No → **Please STOP now and return this questionnaire to the Census Bureau. Thank you for your time.**

2. How much time do you work as a TEACHER at THIS school?

✦ *Mark (X) only one box.*

0054   1 ☐ Full time

2 ☐ 3/4 time or more, but less than full time

3 ☐ 1/2 time or more, but less than 3/4 time

4 ☐ 1/4 time or more, but less than 1/2 time

5 ☐ Less than 1/4 time

3a. Is this school a public charter school?

(A public charter school is a public school that, in accordance with an enabling state statute, has been granted a charter exempting it from selected state or local rules and regulations. A charter school may previously have been a public or private school.)

0055   1 ☐ Yes

2 ☐ No → (GO to item 4a on page 7.)

b. Is this public charter school a newly created school or was it originally all or part of a pre-existing public or private school?

✦ *Mark (X) only one box.*

0056   1 ☐ A newly created school → (GO to item 4a on page 7.)

2 ☐ All or part of a pre-existing public or private school

3 ☐ Don't know → (GO to item 4a on page 7.)

c. Were you teaching at this school before it became a charter school?

0057   1 ☐ Yes

2 ☐ No → (GO to item 4a on page 7.)

d. Did you support this school's conversion to a charter school?

0058   1 ☐ Yes

2 ☐ No

YOUR COMMENTS

4a. What was your MAIN activity LAST school year?

♦ Mark (X) only one box.

0059

1 ☐ Teaching in this school

2 ☐ Teaching in another elementary or secondary school IN THIS SCHOOL SYSTEM

3 ☐ Teaching in a public elementary or secondary school IN A DIFFERENT SCHOOL SYSTEM IN THIS STATE

4 ☐ Teaching in a public elementary or secondary school in ANOTHER STATE

5 ☐ Teaching in a PRIVATE elementary or secondary school

6 ☐ Student at a college or university

7 ☐ Teaching in a preschool

8 ☐ Teaching at a college or university

9 ☐ Working in a position in the field of education, but not as a teacher

10 ☐ Working in an occupation outside the field of education

11 ☐ Caring for family members

12 ☐ Military service

13 ☐ Unemployed and seeking work

14 ☐ Retired from another job

15 ☐ Other - *Please specify* ⬊

5059 _____

b. Did you mark box 10 (Working in an occupation outside the field of education) in item 4a?

0060

1 ☐ Yes

2 ☐ No → (GO to item 5 on page 8.)

c. What kind of work were you doing?

♦ Please record your job title; for example, electrical engineer, cashier, typist, farmer, loan officer.

5061 _____ Job title

0061 ☐☐☐ **Office use only**

FORM SASS-4A (11-2-99)

4d. **What were your most important activities or duties at that job?**

✱ *For example, data entry, selling cars, driving delivery truck, caring for livestock.*

9061

e. **In addition to this main activity, were you also teaching in one or more of grades K-12 last school year?**

0062
1 ☐ Yes
2 ☐ No → (GO to item 5 below.)

f. **How would you classify that teaching position?**

✱ *Mark (X) only one box.*

0063
1 ☐ Regular full-time teacher
2 ☐ Regular part-time teacher
3 ☐ Substitute teacher
4 ☐ Itinerant teacher
5 ☐ Other - *Please specify* ↙

5063

5. **In what year did you begin teaching in THIS school?**

✱ *If your assignment at this school has included a break in service of one year or more, please report the year that you returned to this school from your most recent break in service.*

✱ *Do not include time spent as a student teacher.*

0064 | 1 | 9 | | | Year

YOUR COMMENTS

6a. How many years have you worked as a FULL-TIME elementary or secondary teacher in PUBLIC schools?

🖊 *Include the current school year if you are a full-time teacher this year. Record whole years, not fractions or months.*

0065 ⬚⬚ Year(s)

₀ ☐ None

b. How many years have you worked as a PART-TIME elementary or secondary teacher in PUBLIC schools?

🖊 *Include the current school year if you are a part-time teacher this year. Record whole years, not fractions or months.*

0066 ⬚⬚ Year(s)

₀ ☐ None

7a. Have you ever worked as an elementary or secondary teacher in a PRIVATE SCHOOL?

0067 ₁ ☐ Yes

₂ ☐ No → GO to item 8a on page 11.

b. How many years did you teach FULL-TIME in private schools?

🖊 *Record whole years, not fractions or months.*

0068 ⬚⬚ Year(s)

₀ ☐ None

c. How many years did you teach PART-TIME in private schools?

🖊 *Record whole years, not fractions or months.*

0069 ⬚⬚ Year(s)

₀ ☐ None

TABLE 1. MAJOR AND MINOR FIELD OF STUDY CODES
For questions 8, 10, and 11

EDUCATION FIELDS	GENERAL FIELDS

EDUCATION FIELDS

General Education

01 Early childhood education or pre-elementary education
02 Prekindergarten
03 Kindergarten
04 Elementary education
05 Secondary education

Education - Subject Areas

06 Agricultural education
07 Art education
08 Bilingual education
09 Business education
10 Cross-cultural education
11 English as a Second Language education
12 English/language arts education
13 Family and consumer science education
14 Foreign languages education
15 Health education
16 Indian education (Native American)
17 Mathematics education
18 Music education
19 Physical education
20 Reading education
21 Religious education
22 Science education
23 Social studies/social science education
24 Trades and industry/industrial arts education

Special Education

25 Special education, general
26 Autism
27 Deaf and hard-of-hearing
28 Developmentally delayed
29 Early childhood special education
30 Emotionally disturbed or behavior disorders
31 Learning disabilities
32 Mentally retarded
33 Mildly or moderately disabled
34 Orthopedically impaired
35 Severely or profoundly disabled
36 Speech or language impaired
37 Traumatically brain injured
38 Visually impaired
39 Other special education

Other Education

40 Counseling and guidance
41 Curriculum and instruction
42 Educational administration
43 Educational psychology
44 Other education

GENERAL FIELDS

Arts

45 Art, fine and applied
46 Drama or theater
47 Music
48 Other visual/performing arts

English

49 English literature or composition
50 Communications or journalism

Foreign Languages

51 French
52 German
53 Latin
54 Russian
55 Spanish
56 Other languages

Mathematics

57 Mathematics
58 Statistics

Natural Sciences

59 Biology/Life science
60 Chemistry
61 Geology/Earth science
62 Physics
63 Other natural sciences

Other Areas

64 Agriculture and natural resources
65 American Indian/Native American studies
66 Architecture, environmental design
67 Business and management
68 Computer science
69 Engineering
70 Family and consumer science (home economics)
71 General studies
72 Health professions and occupations
73 Humanities
74 Law
75 Library and information science
76 Military science
77 Multi- or interdisciplinary studies
78 Philosophy
79 Public administration or service
80 Religion or theology
81 Other area or ethnic studies

Social Sciences

82 Economics
83 History
84 Political science and government
85 Psychology
86 Sociology
87 Other social sciences

88 **All Other Areas**

CERTIFICATION AND TRAINING INFORMATION: Items 8-26

II This section asks for information on your certification, academic degrees, preparation programs and other formal training.

8a. Do you have a bachelor's degree?

0070   1 ☐ Yes

  2 ☐ No → GO to item 11a on page 13.

b. In what year did you receive your bachelor's degree?

0071 ☐☐☐☐ Year

c. What was your major field of study?
➧ *Record the field of study code and the field name from Table 1 on page 10.*

0072   Code ☐☐   5072 Major field _____

d. Did you have a second major field of study?

0073   1 ☐ Yes

  2 ☐ No → GO to item 8f below.

e. What was your second major field of study?
➧ *Record the field of study code and the field name from Table 1 on page 10.*

0074   Code ☐☐   5074 Second major field _____

f. Did you have a minor field of study?

0075   1 ☐ Yes

  2 ☐ No → GO to item 9a below.

g. What was your minor field of study?
➧ *Record the field of study code and the field name from Table 1 on page 10.*

0076   Code ☐☐   5076 Minor field _____

9a. What is the name of the college or university where you earned your bachelor's degree?

5077   Name of college or university _____

0077 ☐☐☐☐☐☐☐ **Office use only**

b. In what city and state is it located?

5078   City _____ State _____

0079   0 ☐ Located outside United States

0078 ☐☐ **Office use only**

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10a. Do you have a master's degree?

0080 ┌─ 1 ☐ Yes

└─► 2 ☐ No ➔ [GO to item 11a on page 13.]

b. What was your major field of study?

✎ Record the field of study code and the field name from Table 1 on page 10.

0081 Code ☐☐   Major field ⁵⁰⁸¹ _____

c. In what year did you receive your master's degree?

0082 ☐☐☐☐ Year

YOUR COMMENTS

11a. **Have you earned any other degrees?**

0083   1 ☐ Yes

    2 ☐ No → (GO to item 12 on page 15.)

b. What other degree(s) have you earned? ☛ Mark (X) all that apply below.	**c.** What was your major field of study for each degree? ☛ Record the field of study code and the field name from Table 1 on page 10.	**d.** In what year did you receive each degree?
0084 1 ☐ Associate degree	0085 Code ☐☐ 5085 Major field _____	0086 ☐☐☐☐ Year
0087 1 ☐ SECOND bachelor's degree	0088 Code ☐☐ 5088 Major field _____	0089 ☐☐☐☐ Year
0090 1 ☐ SECOND master's degree	0091 Code ☐☐ 5091 Major field _____	0092 ☐☐☐☐ Year
0093 1 ☐ Educational specialist or professional diploma (at least one year beyond master's level)	0094 Code ☐☐ 5094 Major field _____	0095 ☐☐☐☐ Year
0096 1 ☐ Certificate of Advanced Graduate Studies	0097 Code ☐☐ 5097 Major field _____	0098 ☐☐☐☐ Year
0099 1 ☐ Doctorate or first professional degree (Ph.D., Ed.D., M.D., L.L.B., J.D., D.D.S.)	0100 Code ☐☐ 5100 Major field _____	0101 ☐☐☐☐ Year

TABLE 2. TEACHING ASSIGNMENT FIELD CODES
For questions 12, 15b, 17b, and 18

General

01 Prekindergarten
02 Kindergarten
03 Elementary

Special Areas

04 American Indian/Native American studies
05 Architecture or environmental design
06 Art
07 Basic skills or remedial education
08 Bilingual education
09 Computer science
10 Dance
11 Drama/Theater
12 English as a Second Language
13 Family and consumer science (home economics)
14 Gifted
15 Health education
16 Mathematics
17 Military science
18 Music
19 Philosophy
20 Physical education
21 Religion
22 Social studies or social science (including history)

English or Language Arts

23 English or language arts
24 Journalism
25 Reading

Foreign Languages

26 French
27 German
28 Latin
29 Russian
30 Spanish
31 Other foreign languages

Science

32 Biology or life science
33 Chemistry
34 Earth/space science/geology
35 General science
36 Physical science
37 Physics
38 Other natural sciences

Vocational-Technical Education

39 Accounting
40 Agricultural or natural resources
41 Business/office
42 Career education
43 Communications technologies
44 Cosmetology
45 Food services
46 Health occupations
47 Trades and industry (e.g., CADD, electronics repair, mechanics, precision production)
48 Other vocational/technical education

Special Education

49 Special education, general
50 Autism
51 Deaf and hard-of-hearing
52 Developmentally delayed
53 Early childhood special education
54 Emotionally disturbed or behavior disorders
55 Learning disabilities
56 Mentally retarded
57 Mildly/moderately disabled
58 Orthopedically impaired
59 Severely/profoundly disabled
60 Speech/language impaired
61 Traumatically brain-injured
62 Visually impaired
63 Other special education

64 **All Others**

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12. THIS school year, what is your MAIN teaching assignment field at this school, that is, the field in which you teach the most classes?

♦ *Record the assignment field code and the assignment field name from Table 2 on page 14.*

♦ *If you teach two fields EQUALLY, report one field here and the other in item 15 on page 16.*

0102 ☐☐ Code

5102 ☐☐☐☐☐☐☐☐ Main assignment field

13a. Do you have a teaching certificate in this state in your MAIN teaching assignment field?

0103 ☐₁ Yes

☐₂ No → GO TO item 14a on page 16.

b. What type of certificate do you hold in this field?

♦ *Mark (X) only one box.*

0104 ₁ ☐ Regular or standard state certificate or advanced professional certificate

₂ ☐ Probationary certificate (the initial certificate issued after satisfying all requirements except the completion of a probationary period)

₃ ☐ Provisional or other type given to persons who are still participating in what the state calls an "alternative certification program"

₄ ☐ Temporary certificate (requires some additional college coursework and/or student teaching before regular certification can be obtained)

₅ ☐ Emergency certificate or waiver (issued to persons with insufficient teacher preparation who must complete a regular certification program in order to continue teaching)

c. Did you mark box 1 in item *13b* above?

0105 ₁ ☐ Yes → Continue with item 13d on next page.

₂ ☐ No → GO TO item 14a on next page.

13d. How did you earn your regular or standard state certificate or advanced professional certificate in your MAIN teaching assignment field?

☛ *Mark (X) only one box.*

0106

GO to ITEM 15a.

1 ☐ As part of a bachelor's degree program

2 ☐ As part of a "5th year" program

3 ☐ As part of a master's degree program

4 ☐ After I began teaching, as part of an alternative program

5 ☐ Before I began teaching, as part of an alternative program

6 ☐ Through continuing professional development

7 ☐ Other - *Please specify* ✐

5106 _____

14a. Are you currently in a program to obtain state certification in your MAIN teaching assignment field?

0107

1 ☐ Yes

2 ☐ No → ⟮GO to item 15a below.⟯

b. Which of the following best describes this program?

☛ *Mark (X) only one box.*

0108

1 ☐ University or college program

2 ☐ Program offered by your school or school district

3 ☐ Other - *Please specify* ✐

5108 _____

15a. This school year, are you assigned to teach classes in OTHER fields at this school, in addition to your MAIN teaching assignment field?

0109

1 ☐ Yes

2 ☐ No → ⟮GO to item 17a on page 17.⟯

b. In what OTHER teaching assignment field do you teach the most classes?

☛ *Please record the assignment field code and the assignment field name from Table 2 on page 14.*

0110 ☐☐ Code   Assignment field   5110 _____

16a. Do you have a teaching certificate in this state in your OTHER teaching assignment field at this school?

0111   1 ☐ Yes

       2 ☐ No ➔ ⬭ GO to item 17a below. ⬭

b. What type of teaching certificate do you hold in this field?

   ♠ Mark (X) only one.

0112   1 ☐ Regular or standard state certificate or advanced professional certificate

       2 ☐ Probationary certificate (the initial certificate issued after satisfying all requirements except the completion of a probationary period)

       3 ☐ Provisional or other type given to persons who are still participating in what the state calls an "alternative certification program"

       4 ☐ Temporary certificate (requires some additional college coursework and/or student teaching before regular certification can be obtained)

       5 ☐ Emergency certificate or waiver (issued to persons with insufficient teacher preparation who must complete a regular certification program in order to continue teaching)

17a. Do you currently hold ANY ADDITIONAL regular or standard state certificate or advanced professional teaching certificate in this state or any other state?

0113   1 ☐ Yes

       2 ☐ No ➔ ⬭ GO to item 18 below. ⬭

b. In what teaching assignment fields are these certificates?

   ♠ Please record the code(s), as appropriate, from Table 2 on page 14.

0114 Code ☐☐	0115 Code ☐☐	0116 Code ☐☐
0117 Code ☐☐	0118 Code ☐☐	0119 Code ☐☐

18. What was your main teaching assignment field LAST school year?

0120   1 ☐ Same as this year

       2 ☐ Different from this year ➤

         ♠ Please record the assignment field code and the assignment field name from Table 2 on page 14.

         0121 Code ☐☐   Assignment field   5121 _____

0120   3 ☐ I did not teach last school year

19a. In what year did you begin your first teaching position, either full-time or part-time, at the elementary or secondary level?

Do not count practice teaching.

0122   **1 9 | |** Year

b. Was your first year of teaching, reported in item 19a above, BEFORE the 1995-1996 school year?

0123   1 ☐ Yes → GO to Section III on page 21.

2 ☐ No

c. Did your preparation for teaching include -

(1) Coursework in how to select and adapt instructional materials?

0124   1 ☐ Yes

2 ☐ No

(2) Coursework in learning theory or psychology appropriate to the age of students you teach?

0125   1 ☐ Yes

2 ☐ No

(3) Your observation of other classroom teaching?

0126   1 ☐ Yes

2 ☐ No

(4) Feedback on your teaching?

0127   1 ☐ Yes

2 ☐ No

20. How long did your practice teaching last?

Mark (X) only one box.

0128   1 ☐ I had no practice teaching

2 ☐ 4 weeks or less

3 ☐ 5-9 weeks

4 ☐ 10 weeks or more

YOUR COMMENTS

21. In your first year of teaching, how well prepared were you to -

		Not at all prepared	Somewhat prepared	Well prepared	Very well prepared
a.	Handle a range of classroom management or discipline situations? 0129	1 ☐	2 ☐	3 ☐	4 ☐
b.	Use a variety of instructional methods? 0130	1 ☐	2 ☐	3 ☐	4 ☐
c.	Teach your subject matter? 0131	1 ☐	2 ☐	3 ☐	4 ☐
d.	Use computers in classroom instruction? 0132	1 ☐	2 ☐	3 ☐	4 ☐
e.	Plan lessons effectively? 0133	1 ☐	2 ☐	3 ☐	4 ☐
f.	Assess students? 0134	1 ☐	2 ☐	3 ☐	4 ☐
g.	Select and adapt curriculum and instructional materials? 0135	1 ☐	2 ☐	3 ☐	4 ☐

22. In your first year of teaching, did you participate in a teacher induction program?
If you are in your first year of teaching, please answer for THIS school year.

0136 1 ☐ Yes
2 ☐ No

23. Did you receive the following kinds of support during your first year of teaching?
If you are in your first year of teaching, please answer for THIS school year.

a. Reduced teaching schedule

0137 1 ☐ Yes
2 ☐ No

b. Reduced number of preparations

0138 1 ☐ Yes
2 ☐ No

c. Common planning time with teachers in your subject

0139 1 ☐ Yes
2 ☐ No

d. Seminars or classes for beginning teachers

0140 1 ☐ Yes
2 ☐ No

e. Extra classroom assistance (e.g., teacher aides)

0141 1 ☐ Yes
2 ☐ No

f. Regular supportive communication with your principal, other administrators, or department chair

0142 1 ☐ Yes
2 ☐ No

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24. Were the following duties part of your first-year teaching assignment?

♦If you are in your first year of teaching, please answer for THIS school year.

a. Extracurricular assignments

0143 1 ☐ Yes

2 ☐ No

b. Travel to more than one school to teach

0144 1 ☐ Yes

2 ☐ No

c. Administrative duties (including lunchroom, hall, and recess duties)

0145 1 ☐ Yes

2 ☐ No

d. Classes with discipline problems

0146 1 ☐ Yes

2 ☐ No

25a. In your first year of teaching, did you work closely with a master or mentor teacher?

♦If you are in your first year of teaching, please answer for THIS school year.

0147 1 ☐ Yes

2 ☐ No → (GO to Section III on page 21.)

b. Was this teacher's subject area the same as yours?

0148 1 ☐ Yes

2 ☐ No

26. In your first year of teaching, to what extent did your master or mentor teacher help you?

♦If you are in your first year of teaching, please answer for THIS school year.

Not ⟵————————⟶ To a great
at all   extent

0149 1 ☐   2 ☐   3 ☐   4 ☐   5 ☐

YOUR COMMENTS

III

PROFESSIONAL DEVELOPMENT: Items 27-32
This section asks about various professional development activities and their impact.

27. In the past 12 months, have you participated in the following activities **RELATED TO TEACHING?**

a. University course(s) taken for recertification or advanced certification in your MAIN teaching assignment field or other teaching field, as reported in item 12 on page 15 and item 15b on page 16

Exclude courses taken for your initial certification in your main teaching assignment field or other teaching field(s).

0150   1 ☐ Yes

     2 ☐ No

b. University course(s) in your MAIN teaching assignment field

Exclude courses taken for recertification or advanced certification.

0151   1 ☐ Yes

     2 ☐ No

c. Observational visits to other schools

0152   1 ☐ Yes

     2 ☐ No

d. Individual or collaborative research on a topic of interest to you professionally

0153   1 ☐ Yes

     2 ☐ No

e. Regularly-scheduled collaboration with other teachers on issues of instruction

Exclude administrative meetings.

0154   1 ☐ Yes

     2 ☐ No

f. Mentoring and/or peer observation and coaching, as part of a formal arrangement that is recognized or supported by the school or district

0155   1 ☐ Yes

     2 ☐ No

g. Participating in a network of teachers (e.g., one organized by an outside agency or over the Internet)

0156   1 ☐ Yes

     2 ☐ No

h. Attending workshops, conferences or training

0157   1 ☐ Yes

     2 ☐ No

i. Workshops, conferences or training in which you were the presenter

0158   1 ☐ Yes

     2 ☐ No

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28a. In the past 12 months, have you participated in any professional development activities that focused on in-depth study of the content in your MAIN teaching assignment field?

☛ NOTE: Your main teaching assignment is the field in which you teach the most classes, as reported in item 12 on page 15.

0159
   1 ☐ Yes

   2 ☐ No → ⟮GO to item 28b below.⟯

(1) In the past 12 months, how many hours did you spend on the activities?

☛ Mark (X) only one box.

0160
   1 ☐ 8 hours or less

   2 ☐ 9-16 hours

   3 ☐ 17-32 hours

   4 ☐ 33 hours or more

(2) Overall, how useful were these activities to you?

Not useful ←————————→ Very
at all   useful

0161
   1 ☐   2 ☐   3 ☐   4 ☐   5 ☐

28b. In the past 12 months, have you participated in any professional development activities that focused on content and performance standards in your MAIN teaching assignment field?

0162
   1 ☐ Yes

   2 ☐ No → ⟮GO to item 28c on page 23.⟯

(1) In the past 12 months, how many hours did you spend on the activities?

☛ Mark (X) only one box.

0163
   1 ☐ 8 hours or less

   2 ☐ 9-16 hours

   3 ☐ 17-32 hours

   4 ☐ 33 hours or more

(2) Overall, how useful were these activities to you?

Not useful ←————————→ Very
at all   useful

0164
   1 ☐   2 ☐   3 ☐   4 ☐   5 ☐

28c. In the past 12 months, have you participated in any professional development activities that focused on methods of teaching?

0165

　1 ☐ Yes

　2 ☐ No → (GO to item 28d below.)

(1) In the past 12 months, how many hours did you spend on the activities?

♦ Mark (X) only one box.

0166

　1 ☐ 8 hours or less

　2 ☐ 9-16 hours

　3 ☐ 17-32 hours

　4 ☐ 33 hours or more

(2) Overall, how useful were these activities to you?

Not useful ←   → Very
at all   useful

0167

　1 ☐   2 ☐   3 ☐   4 ☐   5 ☐

28d. In the past 12 months, have you participated in any professional development activities that focused on uses of computers for instruction?

0168

　1 ☐ Yes

　2 ☐ No → (GO to item 28e on page 24.)

(1) In the past 12 months, how many hours did you spend on the activities?

♦ Mark (X) only one box.

0169

　1 ☐ 8 hours or less

　2 ☐ 9-16 hours

　3 ☐ 17-32 hours

　4 ☐ 33 hours or more

(2) Overall, how useful were these activities to you?

Not useful ←   → Very
at all   useful

0170

　1 ☐   2 ☐   3 ☐   4 ☐   5 ☐

28e. In the past 12 months, have you participated in any professional development activities that focused on student assessment, such as methods of testing, evaluation, performance assessment, etc?

0171
- 1 ☐ Yes
- 2 ☐ No → GO to item 28f below.

(1) In the past 12 months, how many hours did you spend on the activities?
Mark (X) only one box.

0172
- 1 ☐ 8 hours or less
- 2 ☐ 9-16 hours
- 3 ☐ 17-32 hours
- 4 ☐ 33 hours or more

(2) Overall, how useful were these activities to you?

Not useful at all ←————————→ Very useful

0173
1 ☐   2 ☐   3 ☐   4 ☐   5 ☐

28f. In the past 12 months, have you participated in any professional development activities that focused on student discipline and management in the classroom?

0174
- 1 ☐ Yes
- 2 ☐ No → GO to item 28g below.

(1) In the past 12 months, how many hours did you spend on the activities?
Mark (X) only one box.

0175
- 1 ☐ 8 hours or less
- 2 ☐ 9-16 hours
- 3 ☐ 17-32 hours
- 4 ☐ 33 hours or more

(2) Overall, how useful were these activities to you?

Not useful at all ←————————→ Very useful

0176
1 ☐   2 ☐   3 ☐   4 ☐   5 ☐

28g. In the past 12 months, have you participated in any professional development activities that focused on other topics not included in 28a-28f above?

0177
- 1 ☐ Yes → *Please specify the topic.*

5177 _____

- 2 ☐ No

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29. Thinking about ALL of the professional development you have participated in over the past 12 months, how useful was it?

Not useful at all ←——————→ Very useful

0178　　1 ☐　　2 ☐　　3 ☐　　4 ☐　　5 ☐

---

30. For the professional development in which you participated in the last 12 months, did you receive the following types of support?

a. Release time from teaching (i.e., your regular teaching responsibilities were temporarily assigned to someone else)

0179　　1 ☐ Yes

　　　　2 ☐ No

---

b. Scheduled time in the contract year for professional development

0180　　1 ☐ Yes

　　　　2 ☐ No

---

c. Stipend for professional development activities that took place outside regular work hours

0181　　1 ☐ Yes

　　　　2 ☐ No

---

d. Full or partial reimbursement of college tuition

0182　　1 ☐ Yes

　　　　2 ☐ No

---

e. Reimbursement for conference or workshop fees

0183　　1 ☐ Yes

　　　　2 ☐ No

---

f. Reimbursement for travel and/or daily expenses

0184　　1 ☐ Yes

　　　　2 ☐ No

YOUR COMMENTS

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31. As a result of completing these professional development activities, did you receive the following rewards?

   a. Credits towards re-certification or advanced certification in your main teaching assignment field or other teaching field(s)

0185   1 ☐ Yes

         2 ☐ No

   b. Increase in salary or other pay increases as a result of participating in professional development activities

0186   1 ☐ Yes

         2 ☐ No

   c. Recognition or higher ratings on an annual teacher evaluation

0187   1 ☐ Yes

         2 ☐ No

32. From the list of topics below, select the three that are your top priorities for YOUR OWN additional professional development.

1 - Student discipline and behavior problems
2 - Teaching students with special needs (e.g., limited-English proficient, special education)
3 - Use of technology in instruction
4 - My main subject field
5 - Content and performance standards in my subject area
6 - Methods of teaching
7 - Student assessment

☛ *Enter the appropriate code (1-7) for each priority.*

0188   ☐ First priority

0189   ☐ Second priority

0190   ☐ Third priority

YOUR COMMENTS

IV CLASS ORGANIZATION: Items 33-38
This section asks about your meetings with other teachers and the organization of classes in your school.

33. **In which grades are the students in the classes you currently teach at THIS school?**

☀ *If you teach at more than one school, report only for the classes you teach at THIS SCHOOL.*

☀ *Mark (X) all that apply.*

0191 1 ☐ Ungraded   0195 1 ☐ 2nd   0199 1 ☐ 6th   0203 1 ☐ 10th

0192 1 ☐ Prekindergarten   0196 1 ☐ 3rd   0200 1 ☐ 7th   0204 1 ☐ 11th

0193 1 ☐ Kindergarten   0197 1 ☐ 4th   0201 1 ☐ 8th   0205 1 ☐ 12th

0194 1 ☐ 1st   0198 1 ☐ 5th   0202 1 ☐ 9th

34a. **Which category best describes the way YOUR classes at this school are organized?**

☀ *Mark (X) only one box.*

0206 1 ☐ **Departmentalized Instruction -** You teach subject matter courses (e.g., biology, history, keyboarding) to several classes of different students all or most of the day.

2 ☐ **Elementary Enrichment Class -** You teach **only one** subject (e.g., art, music, physical education, computer skills) in an **elementary** school.

3 ☐ **Self-Contained Class -** You teach multiple subjects to the same class of students all or most of the day.

4 ☐ **Team Teaching -** You collaborate with one or more teachers in teaching multiple subjects to the same class of students.

5 ☐ **"Pull-Out" Class -** You provide instruction (e.g., special education, reading) to certain students who are released from their regular classes.

b. **Which box did you mark in item 34a above?**

0207 1 ☐ Box 1 or 2 ➔ ⬭ GO to item 37 on page 29. ⬭

2 ☐ Box 3, 4, or 5 ➔ ⬭ Continue with item 35 below. ⬭

35. **At THIS school, what is the total number of students enrolled in the class you taught during your most recent FULL WEEK of teaching?**

☀ *If you teach two or more classes per day, please enter the average number of students in a class or section.*

0208 ☐☐ Students

YOUR COMMENTS

36. During your most recent FULL WEEK of teaching, approximately how many hours did you spend teaching each of these subjects at THIS school?

⬧ *If you taught two or more subjects at the same time, apportion the time to each subject as best you can. Report hours to the nearest whole hour; do not record fractions or minutes. If you did not teach a particular subject during the week, mark (X) the "None" box.*

a. English/Reading /Language arts

0209 ☐☐ Hours per week

₀ ☐ None

b. Arithmetic/Mathematics

0210 ☐☐ Hours per week

₀ ☐ None

c. Social studies/History

0211 ☐☐ Hours per week

₀ ☐ None

d. Science

0212 ☐☐ Hours per week

₀ ☐ None

YOUR COMMENTS

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37. **During your MOST RECENT FULL WEEK of teaching, how many separate classes (or sections) did you teach AT THIS SCHOOL?**

 Do not include: • Homeroom periods
   • Study halls
   • Classes (or sections) taught at any other school

 If you teach two or more classes (or sections) of the same subject (e.g., algebra I) to different groups of students at this school, count them as separate classes (or sections).

EXAMPLE:

(1) If you teach chemistry to two classes (or sections) of students and physics to two classes (or sections) of students, you would report 4 classes (or sections).

(2) If you teach English III to four classes (or sections) of students and journalism to one class (or section), you would report 5 classes (or sections).

(3) If you teach drama to one class (or section) of students at THIS school and English IV to two classes (or sections) of students at ANOTHER school, you would report 1 class (or section).

0213   ☐☐   Number of classes (or sections)

YOUR COMMENTS

TABLE 3. SUBJECT MATTER CODES FOR QUESTION 38

Vocational Education

01 Accounting
02 Agriculture or natural resources
03 Business/office
04 Career education
05 Child care
06 Communications technologies
07 Cosmetology
08 Food services
09 Health occupations
10 Keyboarding
11 Trades and industry (e.g., CADD, electronics repair, mechanics, precision production)
12 Vocational family and consumer science
13 Other vocational-technical education

English or Language Arts

14 Literature
15 Composition/journalism/creative writing
16 English as a Second Language
17 Reading
18 Other English/language arts courses

Foreign Languages

19 French
20 German
21 Latin
22 Russian
23 Spanish
24 Other foreign languages

Mathematics

25 Algebra, elementary
26 Algebra, intermediate
27 Algebra, advanced
28 Analytic geometry
29 Basic and general mathematics
30 Business and applied math
31 Calculus
32 Geometry
33 Integrated math
34 Pre-algebra
35 Pre-calculus
36 Statistics and probability
37 Trigonometry
38 Other math

Computer Science

39 Computer awareness/applications
40 Computer programming
41 Other computer science

Natural Science

42 Biology or life science
43 Chemistry
44 Integrated science
45 Geology/earth science/space science
46 Physics
47 Other physical science
48 Other natural science

Social Science

49 Social studies
50 Civics
51 Economics
52 Geography
53 History
54 Political science/government
55 Psychology
56 Sociology/social organization
57 World civilization
58 Other social science

Visual and Performing Arts

59 Arts and crafts
60 Filmmaking and photography
61 Chorus
62 Band
63 Drama/theater/dance
64 Music
65 Other visual/performing arts

Other Areas

66 Driver education
67 Health education
68 Nonvocational family and consumer science (home economics)
69 Philosophy
70 Physical education
71 Religion
72 Other courses not elsewhere classified

38. **For each class (or section) that you taught during your MOST RECENT FULL WEEK of teaching at this school -**

☀ *Please complete a line of the table below for each class (or section) that you taught. The number of lines filled should equal the number of classes (or sections) reported in item 37.*

a. What subject did you teach?

☀ *Record the appropriate subject matter code and the name of the subject from Table 3 on page 30.*

b. How many students were enrolled in the class (or section)?

Students

Example: Code 2 5   Subject *algebra, elementary*   3 3

				Students
0214 (1) Code		5214 Subject		0215
0216 (2) Code		5216 Subject		0217
0218 (3) Code		5218 Subject		0219
0220 (4) Code		5220 Subject		0221
0222 (5) Code		5222 Subject		0223
0224 (6) Code		5224 Subject		0225
0226 (7) Code		5226 Subject		0227
0228 (8) Code		5228 Subject		0229
0230 (9) Code		5230 Subject		0231
0232 (10) Code		5232 Subject		0233

38. Continued -

For each class (or section) that you taught during your MOST RECENT FULL WEEK of teaching at this school -

a. What subject did you teach?

✦ *Record the appropriate subject matter code and the name of the subject from Table 3 on page 30.*

b. How many students were enrolled in the class (or section)?

		Students
(11) Code 0234 ☐☐	5234 Subject _____	0235 ☐☐☐
(12) Code 0236 ☐☐	5236 Subject _____	0237 ☐☐☐
(13) Code 0238 ☐☐	5238 Subject _____	0239 ☐☐☐
(14) Code 0240 ☐☐	5240 Subject _____	0241 ☐☐☐
(15) Code 0242 ☐☐	5242 Subject _____	0243 ☐☐☐

YOUR COMMENTS

V | RESOURCES AND ASSESSMENT OF STUDENTS: Items 39-50
This set of questions asks about different types of students, the resources provided for teaching them, and your use of student assessment scores.

39a. Of all the students you teach at this school, how many have disabilities or are special education students, that is, how many have an Individual Education Plan (IEP)?

0244 ☐☐☐ Students with an IEP

    0 ☐ None → *(GO TO item 41 below.)*

b. Do you or these students receive the following types of support in your classroom?

(1) Special aide or personal assistant

0245   1 ☐ Yes

      2 ☐ No

(2) Consulting/itinerant teacher

0246   1 ☐ Yes

      2 ☐ No

(3) Accommodations such as more time on tests or behavioral management plan

0247   1 ☐ Yes

      2 ☐ No

40. In the last 3 years, have you had 8 hours or more of training or professional development on how to teach special education students?

0248   1 ☐ Yes

      2 ☐ No

41. Of all the students you teach at this school, how many are of limited-English proficiency?

(Students of limited-English proficiency are those whose native or dominant language is other than English, and who have sufficient difficulty speaking, reading, writing, or understanding the English language as to deny them the opportunity to learn successfully in an English-speaking-only classroom.)

0249 ☐☐☐ Students

    0 ☐ None → *(GO TO item 43 on page 34.)*

42. In the last 3 years, have you had 8 hours or more of training or professional development on how to teach limited-English proficient students?

0250   1 ☐ Yes

      2 ☐ No

43. Are you a Title I teacher, that is, are you paid in full or in part by federal funds under the Elementary and Secondary Education Act?

0251   1 ☐ Yes

     2 ☐ No

44. Using the scale 1-5 where 1 is "Not at all" and 5 is "To a great extent," to what extent do you use state or district standards to guide your instructional practice in your main teaching assignment field?

Not at all ⟵————————⟶ To a great extent

0252   1 ☐   2 ☐   3 ☐   4 ☐   5 ☐

45. Do you use different groupings of students in your classroom to teach students who learn at different rates?

0253   1 ☐ Yes

     2 ☐ No

46. Are students assigned to your classes on the basis of achievement or ability level?

0254   1 ☐ Yes

     2 ☐ No

47a. Do you receive your students' scores on state or local achievement tests?

0255   1 ☐ Yes

     2 ☐ No → (GO TO item 48 below.)

b. Using the scale 1-5, where 1 is "Not at all" and 5 is "To a great extent," to what extent do you use the information from your students' test scores -	Mark (X) one box on each line.				
	Not at all ⟵——— ⟶ To a great extent				
(1) To group students into different instructional groups by achievement or ability? 0256	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
(2) To assess areas where you need to strengthen your content knowledge or teaching practice? 0257	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
(3) To adjust your curriculum in areas where your students encountered problems? 0258	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

48. Do students in any of your classes use computers during class time?

0259   1 ☐ Yes→ (Continue with item 49 on next page.)

     2 ☐ No → (GO to Section VI on page 37.)

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49. In your MAIN teaching assignment field (*reported in item 12 on page 15*), do students in your classes use computers during class time?

0260   1 ☐ Yes

     2 ☐ No → (GO to Section VI on page 37.)

---

50. In answering items 50a-e below, first designate one of your classes in your MAIN teaching assignment field that uses computers during class time. Items 50a-e refer to this designated class.

> **How to designate a class:**
> * If you are responsible for a **single class** or group of students all day, such as an elementary school teacher may be, make this **the designated class.**
> * If you are responsible for **multiple classes** or groups of students, such as a content area or special education teacher may be, make a **typical class or group you teach in your main teaching assignment field** the designated class.

a. How many computers are located in the classroom where you teach this designated class?

0261   ☐☐ Computers

     0 ☐ None → (GO to item 50c below.)

b. How many of the computers located in this classroom currently have access to the Internet?

0262   ☐☐ Computers

     0 ☐ None

c. During your MOST RECENT TWO FULL WEEKS of teaching, how many times did this designated class meet?

0263   ☐☐ Times

d. Did this designated class use computers within the MOST RECENT TWO FULL WEEKS?

0264   1 ☐ Yes → (Continue with item 50e on next page.)

     2 ☐ No → (GO to Section VI on page 37.)

YOUR COMMENTS

50e. During your MOST RECENT TWO FULL WEEKS of teaching this designated class, in how many of the class meeting times did students use computers to -

(1) Learn about course subject matter?

0265 ☐☐ Times
    0 ☐ None

(2) Practice and master skills?

0266 ☐☐ Times
    0 ☐ None

(3) Solve problems?

0267 ☐☐ Times
    0 ☐ None

(4) Work collaboratively with other students in the same classroom?

0268 ☐☐ Times
    0 ☐ None

(5) Produce multimedia or video reports/projects?

0269 ☐☐ Times
    0 ☐ None

(6) Do word processing?

0270 ☐☐ Times
    0 ☐ None

(7) Correspond with experts, authors, or students from other schools via e-mail or the Internet?

0271 ☐☐ Times
    0 ☐ None

(8) Other - *Please specify.* →
    5272 _____

0272 ☐☐ Times
    0 ☐ None

| **VI** | **WORKING CONDITIONS: Items 51-56**
This section asks about the hours you spend at your teaching assignment at THIS school, and about safety at THIS school. |

51. How many hours were you required to be at THIS school during your MOST RECENT FULL WEEK of teaching?

➤ *Report in whole hours, not fractions or minutes.*

0273 ☐☐ Hours

52. In your MOST RECENT FULL WEEK of teaching, how much scheduled school time did you have for planning?

➤ *Please report the hours and minutes, e.g., 1 hour and 15 minutes, 2 hours and 0 minutes, 0 hours and 45 minutes, etc.*

0274 ☐☐ Hours

AND

0275 ☐☐ Minutes

53. During your MOST RECENT FULL WEEK of teaching, how many hours did you spend AFTER school, BEFORE school, and ON THE WEEKEND on each of the following types of activities?

➤ *Report in whole hours, not fractions or minutes.*

a. School-related activities involving student interaction, such as coaching, field trips, tutoring, transporting students

0276 ☐☐ Hours in the most recent full week

b. Other school-related activities, such as preparation, grading papers, parent conferences, attending meetings

0277 ☐☐ Hours in the most recent full week

54. During your MOST RECENT FULL WEEK of teaching at THIS school -

a. How many students in the class(es) you teach were tardy?

0278 ☐☐ Students
₀ ☐ None

b. How many times did you have to interrupt your class(es) to deal with student misbehavior or disruption?

0279 ☐☐ Times
₀ ☐ None

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55a. Has a student FROM THIS SCHOOL ever threatened to injure you?

0280 ☐₁ Yes

☐₂ No → GO to item 56a below.

b. Has a student threatened to injure you IN THE PAST 12 MONTHS?

0281 ☐₁ Yes

☐₂ No → GO to item 56a below.

c. In the past 12 months, how many times has a student threatened to injure you?

0282 ☐☐ Times

56a. Has a student FROM THIS SCHOOL ever physically attacked you?

0283 ☐₁ Yes

☐₂ No → GO to Section VII on page 37.

b. Has a student physically attacked you IN THE PAST 12 MONTHS?

0284 ☐₁ Yes

☐₂ No → GO to Section VII on page 37.

c. In the past 12 months, how many times has a student physically attacked you?

0285 ☐☐ Times

YOUR COMMENTS

VII | DECISION MAKING: Items 57-61
This section asks about your influence on staffing, budgeting and instructional policies, and your perception of various issues about teaching.

57. Using the scale of 1-5, where 1 means "No influence" and 5 means "A great deal of influence," how much actual influence do you think teachers have over school policy AT THIS SCHOOL in each of the following areas?

	No influence ← → A great deal of influence
a. Setting performance standards for students of this school 0286	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
b. Establishing curriculum 0287	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
c. Determining the content of in-service professional development programs 0288	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
d. Evaluating teachers 0289	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
e. Hiring new full-time teachers 0290	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
f. Setting discipline policy 0291	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
g. Deciding how the school budget will be spent 0292	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

58. Using the scale of 1-5, where 1 means "No control" and 5 means "Complete control," how much control do you think you have IN YOUR CLASSROOM at this school over each of the following areas of your planning and teaching?

	No control ← → Complete control
a. Selecting textbooks and other instructional materials 0293	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
b. Selecting content, topics, and skills to be taught 0294	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
c. Selecting teaching techniques 0295	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
d. Evaluating and grading students 0296	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
e. Disciplining students 0297	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
f. Determining the amount of homework to be assigned 0298	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

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59. Do you agree or disagree with each of the following statements?

✦ *Mark (X) one box on each line.*

		Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
a.	The principal lets staff members know what is expected of them.	0299	1 ☐	2 ☐	3 ☐	4 ☐
b.	The school administration's behavior toward the staff is supportive and encouraging.	0300	1 ☐	2 ☐	3 ☐	4 ☐
c.	I am satisfied with my teaching salary.	0301	1 ☐	2 ☐	3 ☐	4 ☐
d.	The level of student misbehavior in this school (such as noise, horseplay or fighting in the halls, cafeteria or student lounge) interferes with my teaching.	0302	1 ☐	2 ☐	3 ☐	4 ☐
e.	I receive a great deal of support from parents for the work I do.	0303	1 ☐	2 ☐	3 ☐	4 ☐
f.	Necessary materials such as textbooks, supplies, and copy machines are available as needed by the staff.	0304	1 ☐	2 ☐	3 ☐	4 ☐
g.	Routine duties and paperwork interfere with my job of teaching.	0305	1 ☐	2 ☐	3 ☐	4 ☐
h.	My principal enforces school rules for student conduct and backs me up when I need it.	0306	1 ☐	2 ☐	3 ☐	4 ☐
i.	The principal talks with me frequently about my instructional practices.	0307	1 ☐	2 ☐	3 ☐	4 ☐
j.	Rules for student behavior are consistently enforced by teachers in this school, even for students who are not in their classes.	0308	1 ☐	2 ☐	3 ☐	4 ☐
k.	Most of my colleagues share my beliefs and values about what the central mission of the school should be.	0309	1 ☐	2 ☐	3 ☐	4 ☐

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59. Continued -

Do you agree or disagree with each of the
following statements?

☀ Mark (X) one box on each line.

		Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
l.	The principal knows what kind of school he/she wants and has communicated it to the staff. 0310	1 ☐	2 ☐	3 ☐	4 ☐
m.	There is a great deal of cooperative effort among the staff members. 0311	1 ☐	2 ☐	3 ☐	4 ☐
n.	In this school, staff members are recognized for a job well done. 0312	1 ☐	2 ☐	3 ☐	4 ☐
o.	I worry about the security of my job because of the performance of my students on state or local tests. 0313	1 ☐	2 ☐	3 ☐	4 ☐
p.	I am given the support I need to teach students with special needs. 0314	1 ☐	2 ☐	3 ☐	4 ☐
q.	I am satisfied with my class size(s). 0315	1 ☐	2 ☐	3 ☐	4 ☐
r.	I make a conscious effort to coordinate the content of my courses with that of other teachers. 0316	1 ☐	2 ☐	3 ☐	4 ☐
s.	The amount of student tardiness and class cutting in this school interferes with my teaching. 0317	1 ☐	2 ☐	3 ☐	4 ☐
t.	I sometimes feel it is a waste of time to try to do my best as a teacher. 0318	1 ☐	2 ☐	3 ☐	4 ☐
u.	I plan with the library media specialist/librarian for the integration of library media services into my teaching. 0319	1 ☐	2 ☐	3 ☐	4 ☐
v.	I am generally satisfied with being a teacher at this school. 0320	1 ☐	2 ☐	3 ☐	4 ☐

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60. To what extent is each of the following a problem in this school? Indicate whether it is a serious problem, a moderate problem, a minor problem, or not a problem in this school.

		Serious problem	Moderate problem	Minor problem	Not a problem
a.	Student tardiness — 0321	1 ☐	2 ☐	3 ☐	4 ☐
b.	Student absenteeism — 0322	1 ☐	2 ☐	3 ☐	4 ☐
c.	Teacher absenteeism — 0323	1 ☐	2 ☐	3 ☐	4 ☐
d.	Students cutting class — 0324	1 ☐	2 ☐	3 ☐	4 ☐
e.	Physical conflicts among students — 0325	1 ☐	2 ☐	3 ☐	4 ☐
f.	Robbery or theft — 0326	1 ☐	2 ☐	3 ☐	4 ☐
g.	Vandalism of school property — 0327	1 ☐	2 ☐	3 ☐	4 ☐
h.	Student pregnancy — 0328	1 ☐	2 ☐	3 ☐	4 ☐
i.	Student use of alcohol — 0329	1 ☐	2 ☐	3 ☐	4 ☐
j.	Student drug abuse — 0330	1 ☐	2 ☐	3 ☐	4 ☐
k.	Student possession of weapons — 0331	1 ☐	2 ☐	3 ☐	4 ☐
l.	Student disrespect for teachers — 0332	1 ☐	2 ☐	3 ☐	4 ☐
m.	Students dropping out — 0333	1 ☐	2 ☐	3 ☐	4 ☐
n.	Student apathy — 0334	1 ☐	2 ☐	3 ☐	4 ☐
o.	Lack of parent involvement — 0335	1 ☐	2 ☐	3 ☐	4 ☐
p.	Poverty — 0336	1 ☐	2 ☐	3 ☐	4 ☐
q.	Students come to school unprepared to learn — 0337	1 ☐	2 ☐	3 ☐	4 ☐
r.	Poor student health — 0338	1 ☐	2 ☐	3 ☐	4 ☐

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61a. If you could go back to your college days and start over again, would you become a teacher or not?

☛ *Mark (X) only one box.*

0339
- 1 ☐ Certainly would become a teacher
- 2 ☐ Probably would become a teacher
- 3 ☐ Chances about even for and against
- 4 ☐ Probably would not become a teacher
- 5 ☐ Certainly would not become a teacher

b. How long do you plan to remain in teaching?

☛ *Mark (X) only one box.*

0340
- 1 ☐ As long as I am able
- 2 ☐ Until I am eligible for retirement
- 3 ☐ Will probably continue unless something better comes along
- 4 ☐ Definitely plan to leave teaching as soon as I can
- 5 ☐ Undecided at this time

YOUR COMMENTS

VIII

GENERAL EMPLOYMENT INFORMATION: Items 62-67
This section requests information about your terms of employment and selected demographics.

62. The following questions refer to your before-tax earnings from teaching and other employment.

♦ *Record earnings in whole dollars.*

a. DURING THE SUMMER OF 1999, did you have any earnings from -

(1) Teaching summer school in this or any other school?

0341   0342
1 ☐ Yes → How much? $ |___|___|___|___|___|___| .00
2 ☐ No

(2) Working in a nonteaching job in this or any other school?

0343   0344
1 ☐ Yes → How much? $ |___|___|___|___|___|___| .00
2 ☐ No

(3) Working in any NONSCHOOL job?

0345   0346
1 ☐ Yes → How much? $ |___|___|___|___|___|___| .00
2 ☐ No

b. DURING THE CURRENT SCHOOL YEAR -

(1) What is your academic year base teaching salary?

0347
$ |___|___|___|___|___|___| .00 Per year

(2) Do you, or will you, earn any additional compensation from this school system for extracurricular or additional activities such as coaching, student activity sponsorship, or teaching evening classes?

0348   0349
1 ☐ Yes → How much? $ |___|___|___|___|___|___| .00
2 ☐ No

(3) Have you earned income from any OTHER school sources this year, such as a merit pay bonus, state supplement, etc.?

♦ *Do not report any earnings already reported.*

0350   0351
1 ☐ Yes → How much? $ |___|___|___|___|___|___| .00
2 ☐ No

62b. Continued -

DURING THE CURRENT SCHOOL YEAR -

(4) Do you, or will you, earn additional compensation from working in any job OUTSIDE this school system?

0352

0353

☐ ₁ Yes → How much? $ [| | | | | |] **.00**

☐ ₂ No → (GO to item 63 below.)

(5) Which of these best describes this job OUTSIDE this school system?

♦ *Mark (X) only one box.*

0354

₁ ☐ Teaching or tutoring

₂ ☐ Nonteaching, but related to teaching field

₃ ☐ Other

63. **Are you a member of a teachers' union or an employee association similar to a union?**

0355

₁ ☐ Yes

₂ ☐ No

64. **Are you male or female?**

0356

₁ ☐ Male

₂ ☐ Female

65a. **What is your race?**

♦ *Mark (X) only one box.*

0357

₁ ☐ American Indian or Alaska Native (Aleut, Alaska Indian, Yupik, Inupiat)

₂ ☐ Asian or Pacific Islander (Japanese, Chinese, Filipino, Korean, Asian Indian, Vietnamese, Hawaiian, Guamanian, Samoan, other Asian)

₃ ☐ Black

₄ ☐ White

(GO to item 66 below.)

b. **Are you enrolled in a state or federally recognized tribe?**

0358

₁ ☐ Yes

₂ ☐ No

66. **Are you of Hispanic origin?**

0359

₁ ☐ Yes

₂ ☐ No

67. **What is your year of birth?**

0360

[1 | 9 | |] Year

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IX | CONTACT INFORMATION: Items 68-71
This section concludes the survey.

68. The survey you have completed may involve a brief follow-up at a later time in order to gain information on teachers' movements in the labor force. The following information would assist us in contacting you if you have moved or changed jobs.

Please PRINT your name, your spouse's name (if applicable), your home address, your telephone number, and the most convenient time to reach you.

a. Your name

b. Spouse's full name *(if applicable)*

c. Street address

d. City

e. State

f. ZIP Code + 4

g. Home telephone
Area Code   Number

h. In whose name is the telephone number listed?
☛ *Mark (X) only one box.*

1 ☐ My name

2 ☐ Other - *Specify name* ➔

i. Best day(s) to reach you
☛ *Enter Mon, Tue, etc., as appropriate.*

Days

j. Best time of day to reach you

1 ☐ a.m.

2 ☐ p.m.

69. What are the names and addresses of two other people who would know where to get in touch with you during the coming years? Please do not list more than one person who now lives with you. Remember to record the relationship of these persons to you (for example, parent, friend, sister, cousin, etc.) in section b.

(1) First Person

a. Name

□□□□□□□□□□□□□□□□□□□□□□□□□□□□

b. Relationship to you

□□□□□□□□□□□□□□□□□□□□□□□□□□□□

c. Street address

□□□□□□□□□□□□□□□□□□□□□□□□□□□□

d. City

□□□□□□□□□□□□□□□□□□□□□□□□□□

e. State

□□□□□□□□□□□□□□□□□□□□□

f. ZIP Code + 4

□□□□□ - □□□□

g. Home telephone
Area Code   Number

□□□ - □□□ - □□□□

h. In whose name is the telephone number listed?
☛ *Mark (X) only one box.*

₁ □ Name entered in part a

₂ □ Other - *Specify name* → □□□□□□□□□□□□□□□□□□□□

69. Continued –

What is the name and address of another person who would know where to get in touch with you during the coming years? Remember to record the relationship of this person to you (for example, parent, friend, sister, cousin, etc.) in section b.

(2) Second Person

a. Name

b. Relationship to you

c. Street address

d. City

e. State

f. ZIP Code + 4

g. Home telephone
Area Code   Number

h. In whose name is the telephone number listed?
   ♦ Mark (X) only one box.

   1 ☐ Name entered in part a

   2 ☐ Other - *Specify name* →

70. Please indicate how much time it took you to complete this form, not counting interruptions.

☞ *Please record the time in minutes, e.g., 40 minutes, 65 minutes, etc.*

0361 ☐☐☐ Minutes

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71. Please enter the date you completed this questionnaire.

Month   Day   Year

0362 ☐☐   ☐☐   ☐☐☐☐

Thank you very much for your participation in this survey.

Please return this survey in the enclosed envelope. If you do not have the return envelope, call 1-800-221-1204, or mail your questionnaire to:

**U.S. Census Bureau
Current Projects Branch
1201 E. 10th Street
Jeffersonville, IN 47132-0001**

Find out more about the Schools and
Staffing Survey (SASS) and information
about teachers that was collected in the last
survey. See SASS on the World Wide Web at:

http://nces.ed.gov/surveys/sass

Look for the report "America's Teachers:
Profile of a Profession, 1993-1994" under
Publications (NCES 97-460).

Additional data collected by the
National Center for Education Statistics
(NCES) on a variety of topics in
elementary, secondary, postsecondary
and international education are
available from the NCES Web site at:

http://nces.ed.gov

For additional data collected by various
Federal agencies, including the Department
of Education, visit the FedStats site at:

http://www.fedstats.gov

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GLOSSARY OF TERMS

Terms formatted in **bold** are defined in this glossary.

Common planning time: an **induction program component** that pertains to novices having an opportunity to plan their instruction with teachers in their subject area during their first year of teaching.

High quality mentor: a **mentor** who teaches in the same subject area as his or her novice, and whom the novice has given a rating of four or higher on a one to five scale measuring mentor "helpfulness" (see Appendix B, Question #26). This level of mentoring is available during the first year of teaching.

Induction programs: formal policy mechanisms designed to ease **novice teachers'** entry into teaching. Induction programs are intentional interventions for new teachers that provide basic, discrete support intended to decrease the **turnover** among new teachers.

Induction program component(s): generally, the programmatic elements that together form a whole induction program, such as a **mentor**, new teacher seminars, summative evaluations, and the like. Induction program components

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may be combined in myriad ways to form different program designs. In this

study, I focus on five components as units of analysis: **high quality mentor**ing,

workload reduction, **professional development**, **common planning** and

supportive communication.

Induction support: a general term referring to the assistance and benefits

associated with one or more of the **induction program components**.

Induction variable(s): measures of first year induction support that were used in

the 1999-2000 SASS teacher questionnaire (attached in Appendix B). Induction

variables are sometimes used alone or in combination to create **induction**

program components.

Infield status: having a regular state teaching certificate that matches the subject

area of one's main teaching assignment (the assignment in which a **novice**

teaches the most classes), regardless of whether an undergraduate major or

minor is also held in that assignment area.

Leaver: a **novice teacher** who was not teaching, or migrated to another school, by

the 2000-2001 school year.

Mentor: an experienced teacher who is assigned to provide instructional, emotional, and/or practical advice to **novice teacher**s.

New teacher: the literature uses myriad definitions and assumptions about new teachers. Generally, studies using the term "new" teacher do not refer to teachers with more than five years of experience. I use the term "new teacher" in a similar, general manner in this dissertation. **Novice teachers** are included within the larger group of new teachers.

Novice teacher: a teacher new to the profession; a beginner. The research literature makes different assertions about the years of experiences associated with having novice status. Bullough, Knowles and Crow (1991) describe the "first few years" (p. 1) as a vital stage for beginning teachers. Similarly, Berliner (1988) places the survival stage among beginning teachers within the first few years of their teaching experience. Researchers have also included student teachers as novices (e.g. Borko and Livingston, 1989), extending the range of novice status into the pre-service preparation phase of their careers. In this dissertation, novice teachers are defined as having two or fewer years of experience.

Professional development: an **induction program component** that provides seminars or classes to beginning teachers during their first year of teaching.

Stayer: a **novice teacher** who remained in the same teaching position between 1999-2000 and 2000-2001.

Supportive Communication: opportunities of support and communication between a novice and his or her department chair or other school administrator that occurs during the first year of teaching.

Turnover: Generally, any permanent exit from teaching or migration from one school to another. In this study, the analysis of turnover pertains to an exit or migration from a school that a sampled **novice** was employed in 1999-2000.

Workload reduction: an **induction program component** that provides to **novices** during their first year of teaching either reduced teaching schedules or reduced instructional preparations with the aim of providing more time for collaboration, planning, reflection or socialization with their professional peers.

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