Mentoring & Tutoring: Partnership in Learning

Effects of Mentoring Programs on New Teacher Retention: A Literature Review

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Building upon previous literature reviews, this article highlights research and evaluation efforts regarding the effectiveness of mentoring programs for new teacher retention in the USA since 2005. Through the analysis of various mentoring program components, different research methods used, and major findings from these studies, we discuss the non-linearity and complexity of both the mentoring process itself and the study of mentoring on new teacher retention. Based on our review, we offer recommendations for researchers and decision-makers to enhance the quality of such studies and maximize the use of the findings in improving mentoring programs and enhancing teacher retention.

Keywords: teacher induction, retention, mentoring

Each year many teachers enter and leave the teaching profession in the United States. According to recent data from the National Center for Education Statistics (2010), of the 3,380,300 public school teachers who were teaching during the 2007–2008 school year, 8% left the profession (*leavers*) and 7.6% moved to a different school (*movers*). For new teachers, those who have one to three years of experiences, the turnover rate was even higher, with 9.1% leavers and 13.7% movers.

Teacher turnover can be costly for school districts. In a pilot study conducted by the National Commission on Teaching and America's Future, for example, the total cost of teacher turnover in the Chicago Public Schools was estimated to be over $86 million per year, and the average cost per leaver was $15,325 (Barnes, Crowe, & Shaefer, 2007). High turnover costs undermine school districts' efforts to enhance the quality of teaching under the already tight budgets. Most importantly, higher school turnover rates have an adverse affect on student academic performance (Guin, 2004; Terry & Kritsonis, 2008).

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In order to maximize the use of resources that address quality teaching, it is critical for school districts to provide effective teacher retention programs. Among various retention strategies, mentoring programs are widely used. Offering one of the most cited reviews of the effects of mentoring programs on teacher retention, Ingersoll and Kralik (2004) examined quantitative studies employing experimental designs and concluded that mentoring programs had a positive effect on teacher retention. However, more recent studies addressing the connection between mentoring and retention have not been as positive about that connection, and at least two have argued that there is no statistically significant link between them (e.g., Glazerman et al., 2010; Wechsler, Caspary, Humphrey, & Matsko, 2010).

Herein, we review the extant literature on mentoring and retention since the seminal review by Ingersoll and Kralik (2004). Like Ingersoll and Kralik (2004), we used the term *mentoring program* to refer to induction programs that include a mentoring component. We define *new teachers* or *novices* as those who have had less than three years of teaching experience, and we specifically address their retention rates rather than those of all teachers. Unlike Ingersoll and Kralik (2004), however, we reviewed the mentoring literature through a different conceptual lens.

Conceptions of Mentoring and New Teacher Retention

Traditionally reviews of mentoring research (e.g., Ingersoll & Kralik, 2004) have prioritized experimental designs that collected quantitative data and analyzed it through rigorous statistical procedures. Since then studies of the connection between mentoring and retention have recognized four important departures from these traditional research methods: (a) acknowledged factors beyond "hard data" (Black, Neel, & Benson, 2008, p. 17); (b) focused on quality rather than exclusively on prevalence data (Fry, 2007); (c) recognized the importance of context (Kapadia, Coca, & Easton, 2007); and (d) explored the non-linear and complex nature of the mentoring process (Parker, Ndoye, & Imig, 2009). These four departures from traditional quantitative approaches provide a conceptual lens for us in this review.

Literature Selection

In order to build upon and extend previous reviews of literature regarding mentoring programs (e.g., Guarino, Santibanez, & Daley, 2006; Ingersoll & Kralik, 2004; Wang, Odell, & Schwille, 2008), we examined empirical studies from 2005 to 2010 that addressed the effect of mentoring programs on new teacher retention. We identified three criteria for selection of studies, which included those that: (a) were published in peer-reviewed journals or technical reports available through online databases; (b) in some way connected mentoring with new teacher retention; and (c) were conducted in the United States.

First, we used key terms including *teacher induction, retention,* and *mentoring* to conduct the search through online databases: Education Resources Information Center (ERIC), PsycINFO, and Academic Search Premier. We reviewed the abstracts of all identified articles to determine whether they met our criteria. Second, we examined the citations listed in all identified articles, including the articles that did not report empirical studies, to search for any technical reports as well as additional articles that met our criteria. Third, we sought out publications by authors who have contributed significantly to mentoring scholarship and consulted experts in the field to include any other empirical studies published since 2005. After reviewing relevant articles and reports, we identified 14 studies that met our criteria to be included in this literature review. For each study we analyzed the major mentoring program components, identified the research design and data collected, categorized and highlighted the major findings, and discussed the interaction between mentoring and retention.

Major Mentoring Program Components

The 14 studies revealed four major common mentoring program components: (a) mentor characteristics, (b) facilitative administrative structures, (c) frequency of support, and (d) professional development and training (including use of classroom observations) (see Table 1).

Mentor Characteristics

Mentoring studies focused on two major mentor characteristics: (a) mentors who matched their novices by subject area or grade level (six studies), and (b) mentors who had been trained (nine studies). We noted that although researchers consistently tested hypotheses regarding the importance of matching novices with subject areas and grade levels (e.g., Huling & Resta, 2007; Parker et al., 2009), conspicuously absent were details in two areas: (a) how a mentor is distinguishable from others who assist novices, and (b) how certain traits might make someone especially useful as a mentor. Also of note is that Perez and Ciriza (2005) suggested school leaders pay more attention to mentor selection.

Although a majority of studies described mentors as trained (e.g., Perez & Ciriza, 2005; McNeil et al., 2006), only a few studies (e.g., Perez & Ciriza, 2005) collected data about how mentors evaluated the effects of their training on their ability to mentor. Interestingly, we found no evidence of movement toward mentor credentialing.

Facilitative Administrative Structures

Studies discussed the effects of the following administrative structures: release time, stipends, aides, a combination of administrative structures and staffing,

Table 1
The Four Most Common Mentoring Program Components

Studies	Mentor characteristics		Facilitative administrative structures							
	Match by field	Trained	Full-time vs. school based	Stipends	Adm. support	Sheltered status	Common planning	Learning community	Frequency of support	PD/training & observation
Black et al. (2008)		X						X	X	X
Freemyer et al. (2010)				X					X	X
Fry (2007)			X		X	X	X		X	X
Glazerman et al. (2010)		X	X		X	X			X	X
Huling and Resta (2007)	X	X		X	X				X	X
Kapadia et al. (2007)	X	X	X						X	X
Kardos and Johnson (2007)	X			X		X	X	X	X	X
McNeil et al. (2006)		X						X	X	X
Parker et al. (2009)	X								X	X
Perez and Ciriza (2005)	X	X							X	X
Rockoff (2008)	X	X	X		X	X	X		X	X
Scherff (2008)				X	X	X		X	X	
Wechsler et al. (2010)		X	X		X			X	X	X
Wynn et al. (2007)	X	X	X	X	X			X	X	X

and supportive implementation from high levels of decision-making. Six studies emphasized mentoring occurring in the context of learning communities in which administrators and veteran teachers shared decision-making and planning so that newcomers to the profession felt welcomed and encouraged to participate. The researchers used various terms to refer to these learning communities, such as:

- "Cross Career Learning Communities" (Black et al., 2008, p. 2).
- "Integrated professional culture" (Kardos & Johnson, 2007, p. 2084).
- "Professional community" (Scherff, 2008, p. 1329).
- "Community of learners" (McNeil, Hood, Kurtz, Thousand, & Nevin, 2006, p. 4).
- "Professional network" or "teacher professional communities" (Wechsler et al., 2010, pp. 13/16).
- "Professional learning community" (Wynn et al., 2007, p. 209).

Most importantly, several studies examined the effects of mentors who were released full-time from classroom duties (e.g., Glazerman et al., 2010) and others explored the effects of those who continued to have classroom duties (e.g., Wynn et al., 2007), but we could not determine which was preferable in terms of teacher retention.

Frequency of Support

All 14 studies addressed the frequency of mentoring support in some manner, but they established no consensus regarding an optimum amount of time that might net positive effects on teacher retention. Even though most studies agreed that novices felt supported by mentors who met with them frequently, studies said very little about what occurred in those meetings. What was most striking was that novices often rejected mandatory meetings with mentors (Kapadia et al., 2007) and that novices who rarely met with their mentors were more likely to stay in the profession than those who met with them daily (Parker et al., 2009).

Professional Development and Training

The majority of studies (12 out of 14) described specific details of mentor training. For example, Huling and Resta (2007) described mentor training that included an orientation early in the year and on-going workshops throughout the year. Kapadia et al. (2007) determined a particular number of training hours. Some studies described specific training models. For instance, one study incorporated the "Critical Friends Protocol" (Black et al., 2008, p. 3) and another described several professional development initiatives, such as 15 hours of workshops each year, full time coaching, bi-weekly professional development,

and delivering training to mentors through university course work (Kapadia et al., 2007). McNeil et al. (2006) used several professional development frameworks to guide novices toward self-actualization and empowerment. These frameworks included having novices complete an individualized induction plan, implementing a "trainer-of-trainer model," and incorporating the zone of proximal development (Vygotsky, 1962) to explain the ways mentors may be poised to assist novices when they are developmentally ready to learn new practice. They also used "cycle of action–reflection–new action" to help them improve their teaching practices (McNeil et al., 2006, p. 5). Another aspect of professional development and training was the program expectation that mentors and novices would observe each other and possibly other teachers.

Even though researchers tested hypotheses regarding a wide range of mentoring program components that included: mentor characteristics, facilitative administrative structures, frequency of support, and professional development and training, none of these components stands out as clearly important for new teacher retention.

Research Designs Employed and Data Collected

Our criteria for inclusion in this review differ considerably from Ingersoll and Kralik (2004), who reviewed studies that: (a) only used quantitative data, (b) evaluated verifiable outcomes for mentees, and (c) compared mentored teachers with those not mentored. Since 2004, researchers have used quantitative, qualitative and mixed methods research designs in their studies and the majority (86%) did not include a control group for comparison.

Studies we reviewed used two main indicators to identify the impact of mentoring on teacher retention: (a) school or district teacher retention rates; and (b) teacher self-reported intentionality to stay in teaching. Seven studies (50%) included teacher retention rates. Most of these studies (five out of seven) reported teacher retention rates after the first or second year of teaching based on district administrative data. Perez and Ciriza (2005) reported teacher retention rates five years after the first-year of their mentoring program and compared those rates to state and national average teacher retention rates. Glazerman et al. (2010) conducted a teacher mobility survey every fall for the three years to track teachers' career progress. Researchers in seven other studies used survey items to measure intentionality to stay in the profession. Conducting a secondary analysis based on the North Carolina Teacher Working Conditions survey, Parker et al. (2009) reported teachers' responses to the question asking about their intentions for future professional careers. In order to further establish the relationship between mentoring and teachers' intentions to stay, a survey by Freemyer, Townsend, Freemyer, and Baldwin (2010) included a yes/no question: "Has having a mentor increased the likelihood that you will remain in education?" (p. 10). Retention rates and teachers' intentionality to stay were then either compared to recorded retention rates

from previous years (e.g., Black et al., 2008), compared to national averages (e.g., Perez & Ciriza, 2005) to determine the effectiveness of a specific mentoring program, or used to correlate with other mentoring program aspects in order to determine their impact.

In studying how mentoring programs affected teachers' decisions to stay or leave teaching, researchers examined both the quantity and quality of their components. They measured the quantity aspect of mentoring components through the frequency of mentoring interactions. Wechsler et al. (2010), for example, included nine items of mentoring intensity in their teacher survey to ask teachers to rate the frequency (never, once, a few times, about monthly, at least weekly) of mentoring interactions such as lesson planning or observation. In addition to the frequency or intensity, Kapadia et al. (2007) used teachers' self-report of access (no, some, and all) to different types of mentoring activities as one of the measures to determine the level of mentorship in their analysis. Researchers addressed the quality of mentoring programs through self-reported survey responses from both mentors and novices. While all 14 studies reported data collected from novices regarding their satisfaction and perception of the mentoring programs, only three studies collected data from the mentor's perspective. All three studies reported mentor training as part of the mentoring program and collected survey data to obtain feedback regarding the training but only one study examined the impact of training on mentor–novice relationships (Perez & Ciriza, 2005). Researchers collected both quantitative and qualitative data in the 14 selected studies. Based on the different types of data collected, we categorized them into quantitative, mixed methods, and qualitative studies (see Table 2).

Five out of 14 studies (36%) were quantitative. Researchers used teacher retention data, district program data, and Likert-scale surveys in those studies. One study involved the secondary analysis of a large-scale survey conducted at the state level (Parker et al., 2009). Seven out of 14 studies (50%) reported both quantitative and qualitative data to measure the impact of mentoring on teacher retention. Although researchers reported both types of data, the majority of them (five out of seven) were quantitative dominant studies (Tashakkori & Teddlie, 1998). In addition to retention and quantitative survey data, these studies also included interviews (Black et al., 2008; Huling & Resta, 2007; Perez & Ciriza, 2005) or teacher responses to open-ended survey questions (Wynn et al., 2007). Wechsler et al.'s (2010) study represented a more complete mixed methods design in which they reported both large-scale quantitative survey results of 39 programs and case studies of six representative programs. Researchers reported quantitative and qualitative data in a parallel fashion in these studies to triangulate or substantiate their findings. Kardos and Johnson's (2007) study was the only one that employed a sequential mixed methods design, specifically, an exploratory design (Creswell & Plano Clark, 2007), where the major survey instrument was developed based on previous qualitative study findings (Kardos, Johnson, Peske, Kauffman, & Liu, 2001).

Table 2
Research Design in Examining the Effectiveness of Mentoring Programs on Teacher Retention

| Studies | QUAN | Mixed | | QUAL |
		Parallel	Sequential	
Black et al. (2008)		X		
Freemyer et al. (2010)	X			
Fry (2007)				X
Glazerman et al. (2010)		X		
Huling and Resta (2007)		X		
Kapadia et al. (2007)	X			
Kardos and Johnson (2007)			X	
McNeil et al. (2006)	X			
Parker et al. (2009)	X			
Perez and Ciriza (2005)		X		
Rockoff (2008)	X			
Scherff (2008)				X
Wechsler et al. (2010)		X		
Wynn et al. (2007)		X		

Two out of the 14 studies were completely qualitative in nature: (a) Fry (2007), who documented four first-year elementary teachers' mentoring experiences using case study methods; and (b) Scherff (2008), who depicted two teachers' "stories to leave by" (Clandinin, Downey, & Huber, 2009) through narrative inquiry.

Findings of Mentoring Effectiveness

As with other reviews of this topic (e.g., Guarino et al., 2006; Wang et al., 2008), findings about the connection between mentoring programs and new teacher retention are inconclusive. In order to better examine them, we divide them into four categories: (a) those that statistically affirmed the connection between mentoring programs and new teacher retention, (b) those that inferred a connection, (c) those that disputed that connection, and (d) those that had mixed findings about the manner in which the two are connected (see Table 3).

Affirming a Connection

Five studies affirmed the connection between mentoring programs and new teacher retention. Black et al. (2008) found that their program, which included trained mentors, learning communities, and ongoing training for mentors and

Table 3
Finding Regarding the Connection between Mentoring Programs and New Teacher Retention

Studies	Affirming connection	Inferring connection	Finding no connection	Mixed findings
Black et al. (2008)	X			
Freemyer et al. (2010)		X		
Fry (2007)				X
Glazerman et al. (2010)			X	
Huling and Resta (2007)	X			
Kapadia et al. (2007)				X
Kardos and Johnson (2007)		X		
McNeil et al. (2006)	X			
Parker et al. (2009)	X			
Perez and Ciriza (2005)	X			
Rockoff (2008)				X
Scherff (2008)		X		
Wechsler et al. (2010)			X	
Wynn et al. (2007)			X	
Percentage	36% (5/14)	22% (3/14)	22% (3/14)	22% (3/14)

novices, increased the retention rate of teachers in "high-need schools" (p. 14). Huling and Resta (2007) reached the same conclusion, and identified significant components as follows: using trained mentors who matched with novices by field, providing stipends and administrative support, having common planning time to allow for frequent interaction between mentors and novices, and providing ongoing training. Perez and Ciriza (2005) claimed that compared to national statistics, teachers in their study left the profession at slower rates, but even though most of the mentors in their program said the training improved their abilities to help novices, some felt their mentoring did not address "the core issues" that affect teacher turnover (Perez & Ciriza, 2005, p. 16). Interestingly, McNeil et al. (2006) found that their mentoring program increased retention rates among special education teachers who often show significantly higher rates of attrition than regular education teachers (Bay & Parker-Katz, 2009).

Even though Parker et al. (2009) found that mentoring programs had a positive effect on new teacher retention, they acknowledged that some of their findings seemed counterintuitive or contradictory because of the non-linear and complex nature of mentoring and retention. Parker et al. noted, for instance, that too much guidance from mentors and too much formality did not increase retention. They also found that matching mentors with mentees by

grade level was important in terms of retention, but being in the same building or teaching the same subjects were less important. Finally, Parker et al. noted that some teachers may be more susceptible to leaving the profession than others regardless of a strong mentoring program.

Inferring a Connection

Three other studies found an impact on retention when mentoring programs were diminished or inadequate. Freemyer et al. (2010) concluded that the removal of mentor stipends had an adverse impact on "perceived teacher longevity in education" (p. 2) mainly because it reduced the frequency of interaction between novices and mentors. Scherff (2008) inferred a connection between mentoring and retention because the two teachers she studied who left the profession suggested that inadequate mentoring contributed to their schools' atmosphere of "professional, social, and emotional disavowal" (p. 1328). Kardos and Johnson (2007) took a somewhat different approach to describing a connection between mentoring and retention. Assuming that by improving job satisfaction (e.g., reducing isolation, allowing novice status) teachers would choose to stay in their schools or in the profession, they identified certain program components that led to job satisfaction. These components included, for instance, matching mentors and novices by field, providing stipends, allowing a sheltered status, supporting novices administratively, scheduling opportunities to meet, and conducting ongoing professional development. Unfortunately, they found that many mentoring programs did not provide these components.

Finding No Connection

Two of the most statistically rigorous studies of mentoring programs (Glazerman et al., 2010; Wechsler et al., 2010) investigated the effects of comprehensive mentoring programs, which included full-time trained mentors, sheltered novice status, strong administrative support, frequency of interaction between mentors and novices, and ongoing professional development. They found no connection between mentoring and retention. Wynn et al. (2007) also found no connection between mentoring and retention when the mentoring program included trained classroom-based mentors with stipends, schedules and expectations that promoted frequency of interaction between novices and mentors, ongoing training, and the expectation that the school culture had adopted a learning community model. Of note is that Wynn et al. (2007) found principal leadership and the professional learning community model to have an effect on retention whereas mentoring did not; however, they strongly questioned the fidelity of the implementation of the mentoring program. Interestingly, even though these researchers failed to see a strong connection between mentoring and retention, they determined that mentoring increased or had the potential to

increase the level of support to novices (e.g., Glazerman et al., 2010; Wechsler et al., 2010).

Mixed Findings about the Connection

Three studies found mixed and weaker results regarding the effects of mentoring on retention. Fry (2007) compared the services her four novice teachers received with the levels of service described by Smith and Ingersoll (2004). She found that the reports from these novices' perspectives were inconsistent in terms of the adequacy of mentoring program components to affect their decisions to stay in the profession. Fry (2007) concluded that of the induction practices described by Smith and Ingersoll (2004), only common planning time and administrator communication seemed consistently helpful. Although Kapadia et al. (2007) found that mentoring was "highly predictive" (p. 2) of teachers' intentions to continue in the profession, when they considered the effects of their entire induction program, including services other than mentoring, they found no connection between their induction program and teacher retention.

Finally, Rockoff (2008), who noted an overall weak relationship between mentoring and retention, called attention to some of the difficulties researchers who study this topic face. For example, he raised questions about evaluating mentors by asking novices about the amount and quality of services they received from their mentors. Rockoff concluded that researchers cannot "fairly judge the input of mentoring based on a comparison of teachers who receive mentoring and those who do not" (p. 13) because they cannot adequately capture the specific circumstances under which novices might receive mentoring or their rationales for evaluating that mentor's services. For example, he suggested that a statistical analysis of the effects of mentoring needs to take into consideration the idea that those teachers who struggle the most may blame their mentors and thus evaluate their effectiveness as poor. Rockoff also discovered that although matching novices and mentors by field should seem fairly easy to determine because mentors and novices either matched or they did not, even this characteristic was difficult to evaluate because in his study he found a discrepancy between teachers' and administrators reports of subject matching. Rockoff's strongest finding connecting mentoring with retention was that mentors who had previously worked in the school in which they were currently mentoring had a significant impact on retention. Even though he found at least one factor that seemed significant in terms of connecting mentoring with retention, based on his other findings, Rockoff encouraged decision-makers to interpret studies of the effects of mentoring programs on teacher retention with caution.

In conclusion, findings regarding the connection between mentoring and retention are inclusive, but even more alarming is that these studies rarely addressed the characteristics of novices that would have an impact on their

capacity or tendency to receive help from mentors. In addition, most researchers obtained data only from novices' perceptions and intentions without providing any means of confirming those findings. Only one study acknowledged the highly significant effect of the recent economic downturn on researchers' ability to study new teacher retention (Wechsler et al., 2010). When researchers ignore important novice characteristics, such as their specific levels of professional abilities and their reasons for leaving teaching which can be totally unrelated to mentoring, and when they ignore other factors, such as economic context, they could be drawing faulty conclusions.

Interactions between Mentoring Programs and New Teacher Retention

In this section, we revisit our findings in light of the four departures from traditional approaches to mentoring research.

Examining Factors Other Than Hard Data

When we looked at the methods researchers used to reach inconclusive results, we noticed that the vast majority of the studies collected hard data exclusively and most mixed methods studies used qualitative data in a subordinate manner to support quantitative findings. Examining our findings through a departure from traditional views suggests that researchers acknowledge the limitations of hard data to generate answers to certain questions about mentoring programs and retention. By acknowledging these limitations, decision-makers and researchers may more readily validate the possibility of exploring this topic using highly localized and deeply descriptive terms that describe the mentoring process rather than quantifying its components. For example, qualitative studies may better capture the distinct features of the mentoring process to provide invaluable services for novices regardless of any ability to connect the provision of that service with teacher retention.

Focusing on Quality of Mentoring Program

Fry (2007) concluded that merely determining the prevalence of certain mentoring program activities did not adequately describe them. For example all of the studies we reviewed addressed the frequency of time mentors and novices spent together; however, the quality of that time is much more difficult to assess. Further, in terms of professional development and training, few studies provided details about the quality of that training in terms of its effect on new teacher retention. Although several studies addressed the quality of mentoring program components, they did so in a limited manner using survey questions, and a much smaller number employed our notion of quality as shown through thick descriptions (Geertz, 1973) of program components.

Surveys and other prevalence counting methods were by far the most often used measures of the impact of mentoring on retention. Our assumption is that understanding the process of mentoring differs considerably from determining the prevalence and perceptions of the prevalence of certain services that might describe a mentoring program. Therefore, researchers may need to consider extending their interest in the prevalence of certain mentoring program characteristics to also include their quality.

Considering the Context of the Process

Kapadia et al. (2007) highlighted a significant finding regarding the importance of context in the study of mentoring programs and their impact on new teacher retention. When they analyzed their data about new teacher retention without adjusting for its context, they found that mentoring had a significant predictive effect on new teacher retention. However, when they adjusted their data to include the context of their entire induction program, they found *no significant connection* with teacher retention. Not only was the immediate context of the induction program a factor, but also relevant was that Kapadia et al. conducted their study in the wider context of a school system struggling with teacher turnover and accountability, concerns from their large urban community, and pressure from federal legislation.

Determining the facilitative administrative structures that might be supportive of the mentoring process, designing and implementing useful professional development and training for both novices and mentors, and facilitating support and collaboration between mentors and novices are also highly influenced by the context in which these programs function. When we consider the many possible mentor–novice interactions within a context that is not merely a backdrop but an interactive force (Vondracek, Lerner, & Schulenberg, 1986), we have some idea of the issues involved in determining the effect of mentoring on retention. Adjusting statistical measures to deal with confounding variables may increase the robustness of the statistical measures, but if researchers do not or cannot in some way capture the effects of the context on the phenomena they are studying, as Kapadia et al. (2007) noted, the results can be misleading.

Acknowledging the Non-linearity and Complexity of Mentoring

Parker et al. (2009) noted the importance of acknowledging the non-linear and complex nature of establishing a connection between mentoring and retention. For example, when they investigated the effects of the frequency of mentor–novice interactions on "occupational commitment" (p. 337), they suggested that the reasons for their apparently contradictory findings were the non-linearity and complexity of the processes they were investigating. A non-linear view of mentoring recognizes that information and action between mentors and novices and within their schools flow in multiple directions rather than

one-way. Because they do not flow one way, it is not likely that researchers can accurately capture how mentoring might cause, correlate with, or predict retention.

In addition to being non-linear, researchers (e.g., Kalin, Barney, & Irwin, 2010; Parker et al., 2009) have recognized mentoring programs as complex systems that are closed (i.e., they have specific parts, such as the mentor–novice dyad), but open and unstable (i.e., there are innumerable descriptors and interactions within those specific parts). They are also self-organized and nested within other complex systems (e.g., the school culture) (Davis & Sumara, 2006). Kalin et al. (2010), proposed an approach to describing mentoring, which they called "complexity thinking mentorship." In this approach, they showed how features of complex systems (e.g., emergence, diversity, redundancy, and decentralized control) provide useful concepts of the mentoring process that traditional models do not address (Kalin et al., 2010, p. 353).

Discussions and Implications

Our exploration of mentoring program components, researcher methodologies, and findings show that it is not easy to examine how mentoring affects retention. Therefore, we propose that researchers and decision-makers take the following perspectives into consideration as they design and evaluate mentoring programs.

First, research questions that establish the linear connection between two phenomena can help establish the existence or strengths of those relationships. However, when it comes to complex relationships like mentoring, it seems that the more important questions focus on "how" and "in what context." Therefore, instead of focusing on the linear relationship between mentoring and retention, which may lead to faulty assumptions of causation, we need to be more intentional in addressing the non-linearity and complexity of mentoring within specific school contexts. We argue that because mentors and novices have infinite personal needs and infinite interactional capacities determining linear relationships with any degree of validity seems unlikely.

Second, because teacher retention is not easy to measure, when researchers calculate teacher retention rates at the school or district level, they may overlook the movement of teachers across states, and across various positions within the educational system beyond classroom teaching. Further, when researchers collect and measure intentionality to stay and satisfaction with mentoring programming based on self-reported data, it is hard to determine whether it is the teachers' true position or if they are just hesitant to articulate their dissatisfaction or intention to leave because they do not want to "burn bridges." The quantitative and qualitative researchers in the studies we reviewed made assumptions that their methodologies could capture accurate data about retention in order to propose meaningful and useful conclusions

about the effects of mentoring. Although each one of them provided important ideas on this topic, depending on one's perspective, all have arguable findings; therefore, we conclude that in order to better understand the factors regarding teacher retention, researchers need to conduct studies that better acknowledge the complexity of teacher retention and the role mentoring plays in teachers' decision-making.

Third, researchers need to place much more emphasis on studying mentoring as a process rather than a program. In contrast to these studies, we view mentoring as a holistic process that involves not only an assigned or chosen mentor, but also involves colleagues that are not assigned, administrators and even family members and friends. Although some of the studies we examined looked at a full range of induction services (e.g., Glazerman et al., 2010), they did not clearly address the quality of these services or their contexts, and most did not collect data from mentors. For example, among the 14 studies reviewed in this paper, only three collected data from mentors (Huling & Resta, 2007; Perez & Ciriza, 2005; Wechsler, et al., 2010). Considering the interactive nature of the mentoring relationship and the potential impact of mentoring processes not only on novices, but also on mentors, studies that view mentoring in holistic contexts should be better able to provide useful ideas, such as how mentors and novices might respond to administrative support, and how mentors might function as job embedded professional developers who also may benefit from professional development.

Fourth, multiple studies on the same mentoring program done by researchers from different paradigms using different research methodology would not only help us gain a more comprehensive understanding of the program, but also provide further insights for all stakeholders involved in the effort to enhance the quality of mentoring programs. While comprehensive studies such as that of Wechsler et al. (2010) are desirable, we also recognize that this type of study requires substantial resources and researcher expertise. Building upon professional development opportunities that encourage mentors and new teachers to be engaged in research efforts through self-study projects or self-evaluation would not only generate useful data and studies, but also foster a culture of research among practitioners. More research collaboration across schools, districts, and states would further encourage the sharing of resources and research capacities to enhance quality and the use of studies on mentoring and teacher retention.

Conclusion

With our conception of mentoring and new teacher retention and through our exploration of the literature, we examined the major mentoring components, research methods used, and findings reported regarding mentoring and new teacher retention. Instead of seeking a conclusive consensus to provide

decision-makers with a list of factors that comprise the most effective mentoring programs, we propose an understanding of the complex and non-linear nature of both mentoring and teacher retention. Recognizing that our review of the literature on mentoring and retention is by no means comprehensive, we do hope that the introduction of new questions, methods, and approaches for examining this relationship provide insights for researchers, practitioners, and administrators in their design and delivery of the mentoring program in local school contexts.

Notes on Contributors

Sheryn Waterman is a doctoral student at the University of North Carolina at Greensboro. She is working on her dissertation, which qualitatively explores mentoring and new teacher retention.

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