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Research on Coaching

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INTRODUCTION

Educators and policy makers, naturally, want to know what research says about coaching. Unfortunately, the quickest answer to that question is, not enough. Although we have uncovered more than 200 publications describing some form of research relevant to coaching, most of those studies are preliminary, including some work on Instructional Coaching conducted at the Center for Research on Learning, and do not meet the standards of rigorous research.

There are at least two reasons why this is the case. First, research on Professional Learning does not have the same outlets for publication that exist for other forms of educational research. At the time of this writing, for example, there is no *Journal of Research of Professional Learning,* although we hope to see such a publication flourishing in the near future. Second, many forms of coaching are newly developed approaches. These approaches began with people developing theories and practices, conducting exploratory research, and refining those theories and practices through experimentation, implementation, reflection, and revision.

This work, despite some limitations, does shed light on what is being learned about coaching and also suggests where researchers need to study further. Indeed, Jake and I wrote this chapter as an outgrowth of our work writing proposals, because while conducting literature searches, we found (and Jake did the lion's share of this research) that over the past 25 years, many before us, especially Bruce Joyce

and Jenny Edwards, had done a lot of important foundational work studying coaching. We felt this information needed to be summarized and shared. This chapter has become our way of accomplishing that goal.

There is an additional issue that must be surfaced. One major challenge any discussion of coaching research faces is the multiplicity of ways in which the term has been used. In truth, to say that "research shows that coaching works" is a bit like saying "research shows that teaching works." As this book is intended to clarify, there are different ways in which coaching can be implemented in schools and different potential outcomes.

Of course, there are many similarities between the various approaches to coaching, including deep respect for the professionalism of teachers, a partnership orientation, focus on listening before talking, emphasis on dialogical conversation, and recognition of the primacy of student learning. However, there are also differences between the various approaches. Cognitive Coaching[SM] puts thinking at the heart of the coaching relationship. Content Coaching emphasizes lesson design and empowering teachers, largely through questioning, to attain a deep, rich understanding of the content they teach. Instructional Coaching focuses on providing appropriate, sufficient supports to teachers so that they are able to implement scientifically proven teaching practices. Literacy Coaching emphasizes the development of students' reading and writing abilities. Each of these approaches may be more or less appropriate in various scenarios, but clearly they are not synonymous.

When we choose to talk about coaching, we need to understand that what happens when we use one form of coaching isn't necessarily going to occur when we adopt a different approach. For that reason, our chapter describes both some common findings that have implications for all approaches to coaching and more specific findings that relate directly to the four most frequently described approaches to coaching: Peer Coaching, Cognitive Coaching, Literacy Coaching, and Instructional Coaching.

What does the research say about coaching? Is there proof that coaching leads teachers to implement scientifically proven practices? Is there a link between coaching and growth in student achievement? Does coaching have an impact on teacher efficacy? What is coaching? How should it be done? What do teachers think about coaching? Is coaching worth the investment?

Questions like these are suddenly, and rightly, being raised by educators as interest in coaching grows across the nation. This review of the research can only begin to answer some of these questions. Many aspects of coaching are newly developed. Indeed, Professional Learning in general has only recently received the rigorous scientific study usually reserved for other aspects of school improvement. However, we hope that this review of the current research on coaching will inform conversations around these questions, perhaps moving the conversations to a higher

level. We also hope to point the way to areas of research that hold great promise for researchers interested in the scientific study of coaching.

The publications reviewed for this chapter were drawn from a search of ERIC, PsychInfo, and Dissertation Abstracts International (Proquest/ UMI) using terms and descriptors of "educational coach/ing," "professional development," "teacher support," "teacher training," "collaborative learning," "instructional coach/ing," "cognitive coach/ing," "peer coach/ing," "literacy coach/ing," and "reading coach/ing."

Since Educational Coaching is a relatively new field and the *Journal of Professional Development* no longer is published, we expanded our collection of documents by drawing on nontraditional sources of publication and dissemination, including the Literacy Coaching Clearinghouse (www .literacycoachingonline.org), Center for Cognitive Coaching (www.cogni tivecoaching.com), University of Kansas Center for Research on Learning Instructional Coaching (www.instructionalcoach.org), and conversations with several leaders in the field, including Bruce Joyce, Director of Booksend Laboratories, and Jenny Edwards of the Center for Cognitive Coaching and the Fielding Graduate University. Also, we examined references cited in other articles on the topic of coaching (i.e., "backwards search" procedures). Ultimately, this document search yielded 254 research articles, books, book chapters, technical reports, position papers, dissertations, and presentations related to coaching or school-based ongoing professional development. We reviewed all 254 documents, and we discuss several of them here.

We did not set out to conduct a meta-analysis of the effects of coaching but rather a narrative review with the purpose of presenting a comprehensive yet reader friendly discussion in one unified chapter. With that goal in mind, we discuss the following topics: (a) the necessity of coaching, (b) Peer Coaching research, (c) Cognitive Coaching research, (d) Literacy Coaching research, (e) Instructional Coaching research, and (f) conclusions and future directions.

WHY IS COACHING NECESSARY?

School systems introduce coaching programs because they assume that high-quality Professional Learning that improves teaching practices will increase student achievement. But is this really the case? Two major reports suggest that there is a clear link between teacher quality and student achievement.

Wenglinsky's (2000) analysis of National Assessment of Educational Progress (NAEP) data, summarized in his report, *How Teaching Matters: Bringing the Classroom Back Into Discussions of Teacher Quality,* provides evidence of the importance of professional development for teachers. Wenglinsky studied data gathered from more than 15,000 eighth-grade

mathematics and science students to see if teacher inputs (e.g., number of years teaching, academic degree, and similarity between college major and subject being taught), professional development, or classroom practices influenced student performance. Wenglinsky employed multilevel structural equation modeling, a statistical analysis methodology that allowed him to "isolate the influence of any given factor on an outcome, taking into account the other potential influences" (p. 6).
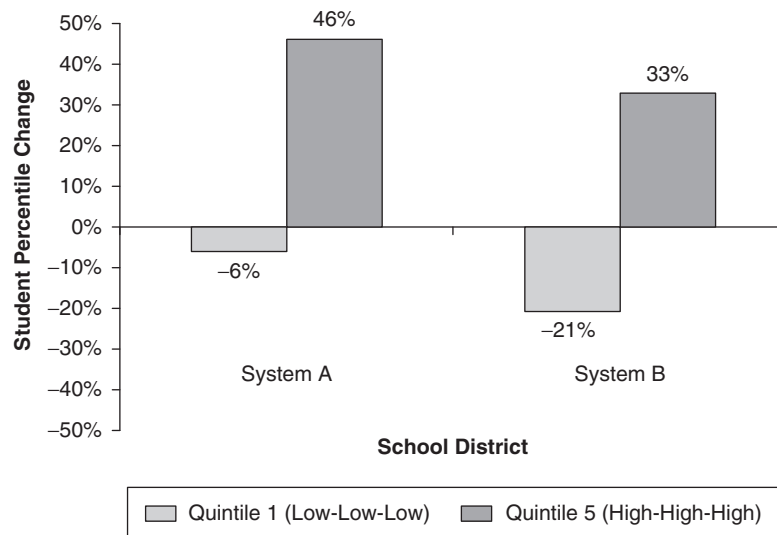
Wenglinsky's (2000) study uncovered that professional development is an important factor in predicting higher student achievement. For example, students in math classes that were taught by teachers who received professional development in working with different student populations outperformed their peers by 107% on the NAEP. In comparison, mathematics students taught by teachers who majored or minored in mathematics, another important factor, outperformed their peers by 39%. These findings support Wenglinsky's claim that "changing the nature of teaching and learning in the classroom may be the most direct way to improve student outcomes" (p. 11).

Further evidence supporting the link between instructional effectiveness and student achievement is provided by Sanders and Rivers' (1996) landmark study of two major Tennessee school districts. Researchers used the Tennessee Value-Added Assessment System (TVAAS) to determine whether teacher effectiveness impacts student achievement. The TVAAS provides individual student data in several disciplines over several years, allowing the long-term impact of effective or ineffective teachers to be measured and evaluated.

To conduct their study, Sanders and Rivers (1996) divided teachers from two large Tennessee districts into five quintiles, with the first quintile (Q1) representing the least effective teachers and the fifth quintile (Q5) representing the most effective teachers. The researchers then reviewed third-, fourth-, and fifth-grade mathematics achievement data on the Tennessee Comprehensive Achievement Test for students who received three consecutive years of instruction from three Q1 teachers—which the authors refer to as Low-Low-Low instruction—and three consecutive years of instruction from three Q5 teachers—referred to as High-High-High instruction.

The findings are, as the authors say, "dramatic" (see Figure 9.1). Students who received three years of instruction from three Q5 teachers (High-High-High) in school district A achieved a mean score of 784.9 (96th percentile), while students who received three years of instruction from three Q1 teachers (Low-Low-Low) received a mean score of 720.2 (44th percentile). Similarly, in school district B, the mean score for High-High-High instruction was 758.9 (83rd percentile), whereas the mean score for Low-Low-Low instruction was 704.4 (29th percentile). In both school systems, students starting at the same level of achievement (50th percentile) three years later had differences in mean percentile achievement scores of more than 50 percentile points. Teacher quality accounted for a

Figure 9.1 Student Tennessee Value-Added Assessment System Score by Teacher Quintile

50% spread on student achievement. Differences reported were "very highly significant" (Sanders & Rivers, 1996, p. 3). Commenting on the implications of these findings, the authors conclude "the single most dominating factor affecting student academic gain is teacher effect" (Sanders & Rivers, 1996, p. 6).

Taken together, the Wenglinsky (2000) and Sanders and Rivers (1996) studies suggest that improving teaching practice is an important way to improve student achievement. Whether or not coaching improves teaching practice is discussed in the remainder of this chapter.

RESEARCH ON THE APPROACHES TO COACHING

Four approaches to Educational Coaching are most frequently mentioned in the literature: Peer Coaching, Cognitive Coaching, Literacy Coaching, and Instructional Coaching. What follows is a discussion of the research conducted using each of these four coaching models. They are listed in order from the oldest to the most recent forms of coaching.

Peer Coaching

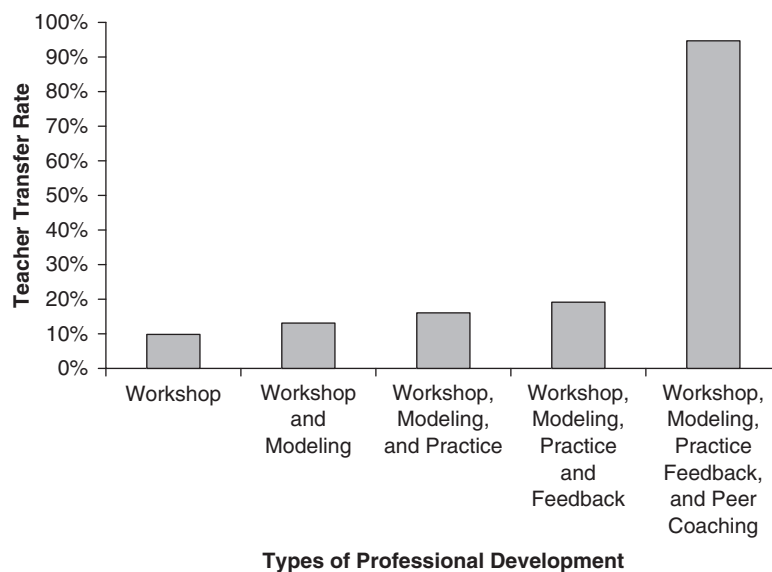*Does Coaching Increase the Rate and Transfer of New Skills?*

Bush (1984) presented findings from a five-year longitudinal study beginning in 1979 and concluding in 1983 focusing on staff development in California. Bush's research team, working in approximately 80 schools

spread over 20 districts, examined whether Peer Coaching increased teachers' implementation of new skills (see Figure 9.2). The research team found that when teachers were given only a description of new instructional skills, only 10% used the skill in the classroom. When each of the next three components of Peer Coaching—modeling, practice, and feedback—were added to the training, teachers' implementation of the teaching skill increased by 2% to 3% each time a new component was added to the training process. Description, modeling, practice, and feedback resulted in a 16% to 19% transfer of skill to classroom use. However, when coaching was added to the staff development, approximately 95% of the teachers implemented the new skills in their classrooms.

Showers (1982) also found that training followed up with peer coaching was much more effective at enabling teachers' use of new practices than without Peer Coaching. In an early study of the impact of Peer Coaching, Showers provided 17 teachers with a workshop on three models of teaching. Then, 9 of the 17 teachers were randomly assigned to work with a coach for six weeks, whereas the other 8 were not coached. Teacher observations revealed that noncoached teachers were much less likely to use the new teaching practices presented at the professional development sessions compared with coached teachers.

Showers (1982) also investigated the scores on recall and essay tests for 256 students taught by the 17 teachers in her study. She found that students of teachers having high implementation rates performed better on recall tests than students of teachers having low implementation rates. These

Figure 9.2   Rate of Transfer Into Classroom Practice Following Peer Coaching Professional Development

findings were significant. There were no significant differences on essay test performance. Further, when closely examining the two groups of teachers at the summation of the study, there were no "high-transfer teachers" in the noncoached group. This study suggests that coaching is prerequisite to high rates of implementation for some new teaching practices.
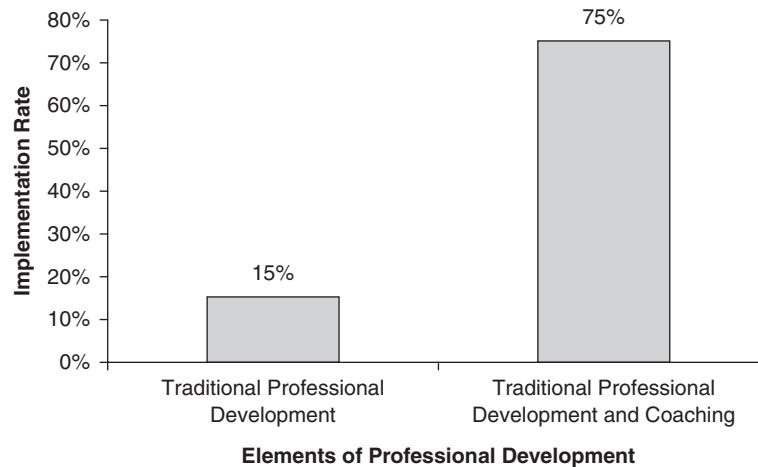
To better understand the impact of coaching on student achievement, Showers (1984) conducted a follow-up study with 21 teachers and 138 students. Like Showers' earlier study (1982), teachers were randomly assigned to either work with a Peer Coach or not. After the presentation of a new teaching practice to all three groups, 10 teachers received coaching from six Peer Coaches, four teachers received partial coaching, and five were not coached. Two important findings emerged. First, coached teachers were more likely than noncoached peers to transfer newly acquired teaching practices into classroom use. Second, coaching contributed significantly to higher student achievement scores as measured by a concept attainment measure.

Truesdale (2003) conducted a 15-week study also examining the transfer of professional development to classroom practice under coached and noncoached conditions. In this study, teachers from two schools attended a workshop. Ten teachers at one school volunteered for coaching, and no teachers at the other school received coaching. Truesdale compared the results of the 10 volunteers (five teams of two peers) at school A and five randomly selected teachers from school B. Truesdale gave the same professional development session to both schools; however, volunteers in school A also received training on how to be Peer Coaches. Truesdale found that coaching increased transfer of training over 15 weeks. By contrast, teachers in the control condition lost interest in the skills presented at the workshop and stopped using them. Simply put, the traditional workshop without coaching did not have an impact on teachers' practices or interest.

Bush, Showers, and Truesdale's studies suggest that Peer Coaching supports knowledge transfer, but what about the long-term continued use of new skills following Peer Coaching? To answer that question, Baker (1983) conducted a six-month follow-up study of Showers' (1982) teacher participants to examine rates of implementation after six months had passed without Peer Coaching. Baker found that higher rates of implementation and continued use persisted for coached teachers. This was not the case for teachers who did not participate in coaching.

Drawing from these and other randomized control-style studies, Showers (1983) succinctly concluded that 75% of teachers who received Peer Coaching transferred the skill presented at the initial professional development session to classroom practice and used it with fidelity (see Figure 9.3). In contrast, only 15% of teachers who did not receive coaching implemented the new skill following a professional development session. Further, noncoached teachers delayed initial use of the target skill and could not use the new skill six months after they had learned it.

Figure 9.3   Impact of the Elements of High Quality Professional Development Upon Implementation Rate

The early work in the field conducted on Peer Coaching by Joyce, Showers, and colleagues (Baker, 1983; Bush, 1984; Joyce & Showers, 1982; Showers, 1982, 1984) laid a sound foundation for future coaching research.

Cognitive Coaching

Since it was first developed in the 1980s, Cognitive Coaching has been the subject of numerous research studies. For this chapter, we reviewed 29 dissertations, 38 articles, 7 books or book chapters, 11 research reports, 19 presentations, and 19 other documents discussing Cognitive Coaching. "The mission of Cognitive Coaching" described in detail in Chapter 4, "is to produce self-directed persons with the cognitive capacity for high performance, both independently and as members of a community" (Costa & Garmston, 2002, p. 16).

In *Cognitive Coaching: A Synthesis of the Research,* Edwards (2008, p. 1) identified nine outcomes that can be expected from Cognitive Coaching: (1) increase in student test scores and "other benefits to students," (2) growth in teacher efficacy, (3) increase in reflective and complex thinking among teachers, (4) increase in teacher satisfaction with career and position, (5) increase in professional climate at schools, (6) increase in teacher collaboration, (7) increase in professional assistance to teachers, (8) increase in personal benefits to teachers, and (9) benefit to people in fields other than teaching. For the purposes of this chapter, Edwards' nine outcomes can be collapsed into impact on students (outcome number 1) and impact on teachers (outcome numbers 2 through 8). Research on the benefits to people in fields other than teaching is not discussed here (outcome

number 9). Also, benefits to students that are not academically related is not discussed in this chapter. What follows is a detailed examination of those other benefits expected from Cognitive Coaching.

Impact on Student Achievement

The research examining effects of Cognitive Coaching on students can roughly be split into two categories. First, we discuss research examining the effect of Cognitive Coaching on teacher-student interactions, and second, we discuss research examining how Cognitive Coaching affects student achievement. "The ultimate goal of teacher education projects is to facilitate student learning. The effect, however, is indirect, amenable to multiple influences, and likely to be seen over time rather than immediately" (Hull, Edwards, Rogers, & Swords, 1998, p. 268). Teachers who volunteered to participate in the Pleasant View Project received training on nonverbal classroom management and Cognitive Coaching over a three-year period. A matched control group of teachers did not receive training on either. Examining change in student achievement scores on the Iowa Test of Basic Skills (ITBS) over the three-year period, Edwards and colleagues (Hull et al., 1998) found growth in mathematics, writing, and total ITBS scores in both groups. They reported that the growth of students whose teachers received Cognitive Coaching and nonverbal classroom management training was larger than that of the students of matched control group teachers. These findings do not represent statistically significant differences.

Rennick (2002) examined literacy achievement of kindergarteners whose teachers participated in one of three professional development programs. The district staff developer provided (1) balanced literacy training utilizing Cognitive Coaching to 21 kindergarten teachers, (2) two-week long orientations on balanced literacy to 12 teachers, and (3) no training at all to 40 kindergarten teachers. In this quasi-experimental design, Rennick did not randomly assign or randomly select participants. Rennick used a battery of assessments to examine student reading and writing. When comparing results of students, he found significant increases in academic achievement among students whose teachers were coached when compared to students of teachers from either of the other two groups. Due to the nonrandomized quasi-experimental design of this dissertation study and the differences in the amount of time devoted to the two types of professional development, we cannot infer that these differences were due entirely to Cognitive Coaching.

Slinger (2004), in her dissertation, examined the impact of Cognitive Coaching on student literacy scores among first graders whose teachers had been coached or not. Slinger used a concurrent nested model research design to collect both qualitative and quantitative data simultaneously. Five teachers responsible for 73 students volunteered to be coached. Slinger matched five teachers to act as a control group based upon three hierarchical

criteria: (1) similar student academic profiles, (2) years of teaching experience, and (3) gender. Teachers in the control group were responsible for slightly fewer students. Teachers reported general growth as a result of Cognitive Coaching. Yet, upon analysis of data from students taught by both groups of teachers, Cognitive Coaching did not result in any statistically significant difference. However, Slinger did report findings of "overwhelmingly positive qualitative data" from teachers that participated in Cognitive Coaching (Slinger, 2004, p. 173). Specifically, three outcomes were suggested: (1) change in focus from procedural to instructional, (2) increase in communication of teachers toward the specific, and (3) positive reaction to Cognitive Coaching as a form of professional development.

In another study, Hull et al. (1998) reported the impact of Cognitive Coaching on students with special education needs. Although finding the effects of Cognitive Coaching on students in need of a special education was an incidental result discovered through interviews, the researchers reported statistically significant reductions in the number of students referred to special education by teachers who received three years of training in Cognitive Coaching and nonverbal classroom management. The cause of the reduction in referrals is unclear. It may be due to (a) changes in cognitive processes and perception as a result of Cognitive Coaching, (b) better classroom management for difficult students therefore decreasing the number of erroneous referrals, or (c) some combination of the two previous reasons. However, this finding is promising and merits more research.

As with other models of coaching, randomized, experimental studies of the impact of Cognitive Coaching on student achievement are needed to show a clear link between the two. We offer this observation not criticizing past research but suggesting a direction for future methodological decision making.

Impact on Teachers

Researchers (Alseike, 1997; Edwards & Newton, 1995; Hull et al., 1998; Krpan, 1997; Smith 1997) examining the impact of Cognitive Coaching have reported increases in teacher efficacy as a result of coaching, being coached, and reciprocal coaching. Edwards and Newton (1995) and Edwards, Green, Lyons, Rogers, and Swords (1998) used the Teacher Efficacy Scale developed by Gibson and Dembo (1984) as the primary measure of increased efficacy of the teacher. Various researchers have proposed alternative meanings for what the two subscales of the Teacher Efficacy Scale measure, and there is considerable debate over the construct dimensions of the scale (Coladarci & Breton, 1997; Guskey & Passaro, 1994; Rich, Lev, & Fisher, 1996; Saklofske, Michayluk, & Randhawa, 1988; Woolfolk & Hoy, 1990). This problematic measure may not actually have measured teacher efficacy. Although this debate is outside the scope of this chapter, we turn to more recent research using a researcher developed survey.

Alseike (1997) developed a survey to assess teacher efficacy, among other things. Comparing 121 teachers who received Cognitive Coaching to 136 teachers who did not, Alseike reported that those teachers who participated in coaching scored significantly above average on the dimension of efficacy. In discussing the findings, Alseike suggested that "cognitively coached teachers are more efficacious and interdependent than teachers who have not had Cognitive Coaching" (p. 124). The survey response rate was low at only 56% on the questionnaire portion.

Edwards and colleagues have found that teachers self-report increases in their job and career satisfaction following training in and use of Cognitive Coaching (Edwards & Newton, 1995; Edwards, Green, Lyons, et al., 1998). Further, teachers who were supervised using Cognitive Coaching judged their experience significantly more positively than teachers supervised through traditional supervision techniques (Edwards, 1993; Mackie, 1998).

Working in a Jewish day school in New Jersey, Moche compared three forms of professional development on teacher's reflective thinking (1999, 2000/2001). Teacher reflective thinking was measured using the Reflective Pedagogical Thinking Instrument (Simmons, Sparks, Starko, Pasch, & Colton, 1989). Eleven teachers received the traditional form of professional development in addition to Cognitive Coaching; 10 teachers served as a time control group, thus receiving traditional professional development along with informal discussions about their teaching; the third control group of 11 teachers received traditional professional development, which consisted of supervision and traditional workshops. Moche found that members of the treatment group who received Cognitive Coaching showed significant growth (gain of 1.64) in reflective thinking over the traditional supervision group (gain of .64) and traditional plus discussion group (gain of .30).

Moche's findings suggest that Cognitive Coaching increases teacher reflection. Yet, when Edwards (1993) examined reflective thinking and conceptual development of first-year teachers, she did not find significant difference between first-year teachers who received Cognitive Coaching and those who did not. Other researchers have found increased teacher reflection in connection with participating in Cognitive Coaching (Alseike, 1997; Edwards & Green, 1999a; Edwards & Newton, 1995; Krpan, 1997; Slinger, 2004; Smith, 1997). More research on this aspect of Cognitive Coaching would be very helpful. For example, does Cognitive Coaching have more impact on experienced teachers than first-year teachers? Also, if Cognitive Coaching increases reflective thought, does this change in cognitive process translate into consistent and reliable changes in teaching practice that benefit students academically or otherwise? Does it increase the efficaciousness of teachers?

Recently, Aldrich (2005) examined Cognitive Coaching in online environments, concluding that quality Cognitive Coaching occurring online is both feasible and sometimes advantageous. Noting value in text-based

communication, Aldrich reported that meaning is often more transparent when using tools such as chat and e-mail. Further, the ability to archive past communications and refer back at a later date was very valuable for some teachers. Using this process may reduce time demands and distance barriers and overall may be a new direction for Cognitive Coaching.

Conclusions on the Cognitive Coaching Research

After carefully studying the Cognitive Coaching literature, we believe that the studies included in this review offer evidence of positive outcomes and experiences as a result of Cognitive Coaching. Yet, rigorous means of investigation are largely missing. Few findings rest on experimental methodologies; too many rely on self-reported data or measures that have not been adequately validated. We are well aware of the difficulty of conducting scientific research in schools; each school has a unique culture, competing initiative, and its own idiosyncrasies. Although rich descriptions of experiences had by those involved in Cognitive Coaching are repeatedly documented through qualitative research, further studies determining when Cognitive Coaching is most effective and what impact Cognitive Coaching has on student achievement, teacher knowledge, and student and teacher behavior will significantly extend our understanding of Cognitive Coaching. This could be said for all of the various models of coaching.

Literacy Coaching

In 2004, the International Reading Association adopted Dole's (2004) definition of a Literacy Coach as anyone who "supports teachers in their daily work" (p. 462). Using this definition, coaching could involve an array of behaviors and practices, including modeling, book studies, informal conversations, examination of high-stakes exam data, material orders for classroom libraries, and so forth. Thus, one major difference between Literacy Coaching and other approaches to coaching discussed in this chapter is that it is not defined by a set of common core duties, a theory, or the manner in which coaches perform their jobs. Rather, the term Literacy Coach is used loosely to describe anyone who supports teachers with the goal of increasing literacy.

This all-encompassing definition means that Literacy Coaching may look vastly different from one location to another. In 2007, the Northwest Regional Education Lab published a report on Reading First literacy coaches. The same conclusions were reached: "Simply knowing that literacy coaches are in schools does not imply anything about how those individuals spend their time—there is a difference between being a coach and *doing coaching*" (Duessen, Coskie, Robinson, & Autio, 2007, p. iii). The authors added that, "Not only do coaches have many responsibilities, but the term 'coach' is used to describe many different configurations: full-time coaches to a single building, full-time coaches responsible for two or
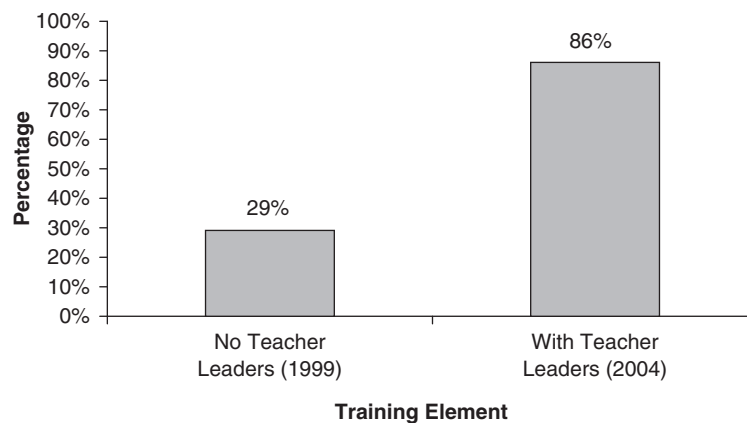
more buildings, part time coaches (especially in small schools), and teachers who provide part-time peer coaching to their colleagues" (Duessen et al., 2007, p. 6). These findings are very important given that an estimated 5,600 literacy coaches have been hired through the Reading First funding (Deussen & Buly, 2006).

The research cited in support of Literacy Coaching heavily relies on the research conducted on other models of coaching, namely, Cognitive Coaching, Peer Coaching, and Instructional Coaching (Buly, Coskie, Robinson, & Egawa, 2006; Duessen & Buly, 2006; Duessen et al., 2007). More research on Literacy Coaching is needed (Buly et al., 2006; Duessen et al., 2007; Greene, 2004; International Reading Association, 2004; Lewis et al., 2007; Poglinco, Bach, Hovde, Rosenblum, Saunders, & Supovitz, 2003).We did not find published, randomized-control-style studies of the effectiveness of Literacy Coaching on teacher behavior or student academic achievement, but several promising reports on the effectiveness of Literacy Coaching have been published and several studies are underway. For example, The Learning Network (2006) reported findings from Battle Creek, Michigan. The Learning Network training program includes "teacher leaders" who act in much the same way as Literacy Coaches. Although no control group was present, there is continual growth over a five-year period, as measured by fourth-grade reading scores on the Michigan Educational Assessment Program Test (MEAP). The number of students in fourth grade exceeding or meeting expectations (Level 1 and 2 on the MEAP) increased from 29% in 1999 to 86% in 2004 (see Figure 9.4). Due to the methodologies used, we cannot be sure this change was due in part, or at all, to Literacy Coaching activities.

The *Reading First Impact Study: Interim Report* (Gamse, Bloom, Kemple, & Jacob, 2008) was commissioned by congress to evaluate the effectiveness

Figure 9.4   Fourth Graders Exceeding or Meeting Michigan Educational Assessment Program Test Reading Score Goals

of the Reading First program. Reading First funding could be used for reading curricula and materials, professional development and coaching, and diagnosis and prevention. Gamse et al. (2008) employed a regression discontinuity design that relied on the process by which school districts allocated Reading First funding to select participating schools for this evaluation. The authors describe this research design as "the strongest quasi-experimental method that exists for estimating program impact" and state that this design can "produce unbiased estimates of program impacts" (p. x). Examining 238 schools in 17 districts and one state Reading First program, the authors report findings from three primary outcomes. Since Literacy Coaches are commonly hired using Reading First funding, we report some of the findings from this report. Gamse et al. reported increases in "highly explicit instruction" in Grade 1 (3.56%) and Grade 2 (6.98%) as well as increases in time spent teaching reading by first-grade teachers (8.56%) and second-grade teachers (12.09%). Although time spent by teachers in "high quality student practice" increased by 3.67%, the percentage of "students engaged with print" decreased by 8.42%. All of these estimated changes were significant. However, we must note that this report has been criticized heavily by leaders in Literacy Education such as Reid Lyon (Shaughnessy, 2008), and the results reported are not due entirely to Literacy Coaching, as this is only one possible way for schools to use them.

Further study of the effects of Literacy Coaching is needed. Especially needed is investigation of these effects using research design and methodology that can infer causal relationships between receiving Literacy Coaching and changes in teacher practices and student academic achievement.

Instructional Coaching

The Instructional Coaching model developed at the University of Kansas Center for Research on Learning, by one of the authors of this chapter (Knight, 2007), was derived from several activities, including (a) the development and study of the theoretical framework for this approach to Instructional Coaching, (b) a teacher survey on modeling, (c) teacher interviews, (d) a study of teacher implementation, and (e) the iterative development of the instructional coaching model over seven years.

This work provides a point of departure for the development of Instructional Coaching; however, the informal and quasi-experimental methodologies employed in these studies, though appropriate during the development of a new model, have limitations with respect to generalization of the results to practices in schools. Thus, we are at the starting point for research on Instructional Coaching, not the end. The results for each study are described in the following section.

Development and Study of the Theoretical Framework

The "partnership approach" (Knight, 2007), which is the theoretical framework for the Instructional Coaching model discussed here, is

grounded in the work of authors in many disciplines (including adult education, business, psychology, philosophy of science, and cultural anthropology) who write about knowledge transfer, knowledge development, and human interaction. The ideas of Paulo Freire (1970), Riane Eisler (1988), Michael Fullan (1993), Peter Block (1993), Peter Senge (1990), Richard J. Bernstein (1983), William Isaacs (1999), and others were synthesized into seven principles: equality, choice, voice, dialogue, reflection, praxis, and reciprocity.

For the initial study of this theoretical framework (Knight, 1998), 73 teachers were trained in visual imagery and self-questioning reading strategies, through two different approaches to professional development: a partnership approach and a traditional approach. Each teacher received training on both reading strategies (visual imagery and self-questioning), and each teacher was trained using both approaches (partnership and traditional). Using a counterbalanced research design, one half of the teachers learned self-questioning via the partnership approach and visual imagery via the traditional approach, while the second group learned self-questioning via the traditional approach and visual imagery via the partnership approach.

Knight (1998) used a 7-point Likert-type scale to measure engagement, feelings toward the training session, and expected implementation. Knowledge of content presented in the training was assessed using a researcher-developed knowledge test of critical information presented during the professional development. The results showed statistically significant differences between the partnership and traditional approaches when compared. These results suggested that when teachers participated in training that employed the partnership approach, they were more likely to be engaged, enjoy the session, remember the content of the training, and plan to implement the content they learned.

Impacts on Teachers

Modeling is one critical element of Instructional Coaching. To assess the affects of modeling, in the fall of 2003–2004, we surveyed 107 secondary teachers from the Topeka, Kansas, school district, who had viewed a model lesson from an Instructional Coach the previous year. The survey was an informal measure, containing 10 items addressing five questions, with a Likert-type scale from 1 signifying *strongly disagree* to 7 signifying *strongly agree.* The results, summarized in Table 9.1, suggest that the teachers believed they benefited from observing an Instructional Coach model in their classroom.
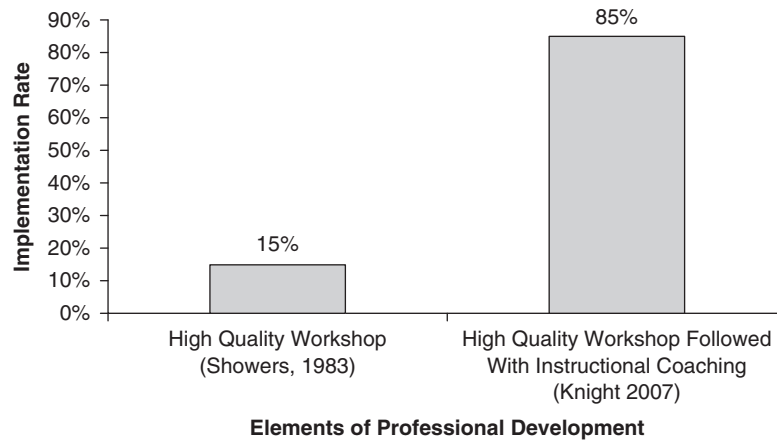
During academic year 2003–2004, 13 ethnographic interviews (Fontana & Frey, 1994) were conducted with teachers who had collaborated with an Instructional Coach at a middle school. In each of the 13 interviews, teachers stated that the model lessons were an essential part of the coaching process. One teacher in the study said, "I think it was very important

Table 9.1   Teacher Survey on Modeling Results

Question	*Mean Score*
Do teachers perceive that model lessons provided by Instructional Coaches have increased their fidelity to research-based teaching practices?	6.40
Do teachers perceive that Instructional Coaches have enough content knowledge to teach all lessons in the collaborating teachers' class?	3.18
Do teachers perceive that model lessons provided by Instructional Coaches have increased their confidence with respect to implementing teaching practices?	6.22
Do teachers perceive that model lessons provided by Instructional Coaches have made it easier for them to implement teaching practices?	6.51
Do teachers perceive that model lessons provided by Instructional Coaches have enabled them to learn additional teaching practices?	6.13

for her to come in and model it. I think the value of actually seeing it happen is you get to see how it works and how she interacts with certain kids that are real problems. . . . It also instills confidence in myself. If we had just sat down and talked, I might have understood that, but seeing it in practice is a whole different thing. I think her value to me has been immense. I probably would have sunk without her" (Knight, 2007, p. 117).

During the summer of 2004, 82 teachers in the Topeka, Kansas, school district attended summer workshops on teaching practices developed at the University of Kansas Center for Research on Learning. Each of these teachers had Instructional Coaches in their schools to provide additional support for implementation of the newly learned teaching practices. In October 2004, Instructional Coaches conducted classroom visits to assess if the 82 teachers who attended the summer professional development session and received Instructional Coaching continued to use the new teaching practices. The coaches reported that 70 out of the 82 teachers who received coaching were implementing practices they had learned during the summer professional development session. Although there was no control group present for this study, 85% of teachers were implementing the new teaching practices into their classroom use. If we compare the 85% (Knight, 2007) to the rate of implementation that Showers (1983) reported following high quality professional development without coaching, this represents a 70% increase in teacher implementation (see Figure 9.5).

Figure 9.5   Percent of New Teachers Implementing New Skills

Conclusions on the Instructional Coaching Research

Several activities have been conducted each year between 1999 and 2008 with the Instructional Coaches in the Topeka school district. First, all coaches have participated in frequent, extended, ethnographic interviews. Second, the project director conducted an ongoing literature search in areas relevant to coaching, including theory of change (Hall & Hord, 2005; Prochaska, Norcross, & DiClemente, 1994), interpersonal communication (Gottman, 2001; Scott, 2002; Stone, Patton, & Heen, 1999), nonverbal communication (Ekman, 2003), and negotiation (Fisher & Shapiro, 2005; Fisher, Ury & Patton, 1991). Third, data gathered from the interviews and the literature search was used to modify and improve the Instructional Coaching model. Finally, the modified coaching methods were presented to coaches who in turn integrated them into their teaching practices. The approach to Instructional Coaching that grew out of this process was ultimately described in *Instructional Coaching: A Partnership Approach to Improving Instruction* (Knight, 2007).

The research conducted on Instructional Coaching, in particular the studies of implementation and teacher attitudes toward coaching, need further study. The implementation study, for example, contains only self-reported data, and there is no externally obtained reliable data to show whether teachers were actually doing what they reported. Also, the 10-item survey was informal, and thus not validated. As with most of the approaches to coaching discussed in this chapter, randomized experimental studies on Instructional Coaching will greatly enhance our understanding of the Instructional Coaching approach. Perhaps most importantly, more research on the impact of Instructional Coaching on student achievement is needed; this is a question currently being investigated.

CONCLUSIONS AND FUTURE DIRECTIONS FOR RESEARCH

Many approaches to coaching are relatively new. Consequently, much of the research conducted to date has been exploratory process and development, lacking the rigor of true scientific study. This is understandable. Since the various coaching models were in the early stages of development, their creators were mostly concerned with improving coaching methods through (a) coach and teacher feedback (e.g., through interviews and surveys), (b) quick informal data gathering, and (c) integration and testing of ideas presented in the literature on coaching and related fields.

This means that we must be cautious when we generalize from the research that has been conducted to date. What we know about coaching (like much of what we know about education) is much less than what we need to learn. For that reason, this chapter concludes with a discussion of topics we think researchers should consider.

What We Know

Coaching Impacts Teacher Attitudes

Research conducted by Edwards and colleagues shows increases in teachers' attitudes toward their job satisfaction over time (Edwards, Green, Lyons, et al., 1998) and in comparison to teachers who did not receive Cognitive Coaching (Edwards & Newton, 1995; Hull et al., 1998). It is unclear, however, if these impacts are unique to Cognitive Coaching, generalizable to other types of coaching, or even more broadly a response to receiving professional support.

Coaching Impacts Teaching Practices

The findings of Bush, Showers, Joyce, and others (Bush, 1984; Joyce & Showers, 1982; Showers, 1982, 1984; Showers, Joyce, & Bennett, 1987), combined with the findings from Instructional Coaches' reports on implementation rates (Knight, 2007), suggest that coaching increases implementation, or as it is known in the literature, skill transfer. A second conclusion to be drawn from the studies reviewed is that one-shot professional development without coaching follow-up does not lead to wide implementation. There may be approaches to professional development that are more effective than coaching, but a workshop without follow-up, the research clearly shows, is not one of them.

Coaching Impacts Teacher Efficacy

The many studies of Cognitive Coaching, and in particular the efforts of Edwards and colleagues (Edwards & Green, 1999a, 1999b; Edwards, Green, & Lyons, 1998; Edwards, Green, Lyons, et al., 1998; Edwards &

Newton, 1995; Hull et al., 1998), suggest that Cognitive Coaching positively increases teacher efficacy, although some have debated the construct dimension of the primary assessment tool employed during Cognitive Coaching research that examined teacher efficacy (Coladarci & Breton, 1997; Guskey & Passaro, 1994; Rich et al., 1996; Saklofske et al., 1988; Soodak & Podell, 1993; Woolfolk & Hoy, 1990). However, the sheer volume of studies showing an impact on teacher efficacy is impressive and persuasive.

Coaching Impacts Student Achievement

Wenglinsky's (2000) and Sanders and Rivers' (1996) research suggests that teacher quality is one of the most important variables (if not *the* most important variable) affecting student achievement. Also, several of the studies discussed in this chapter suggest that coaches do increase teachers' transfer of skills. The "missing link," so to speak, in coaching research, is studies that clearly show that coaching improves the specific teaching practices that increase student achievement.

What We Need to Know

Taking note of the numerous topics researchers could study in the field of coaching, and after reviewing more than 250 documents for this chapter, we have identified four major questions that seem to be particularly important for further study. Many of the answers to these questions are different, depending on which approach to coaching is being studied.

What Support Systems Should Be in Place for Coaching to Flourish?

The experiences of educators across the nation provide ample evidence that all educational systems are not created equal when it comes to supporting coaching. Researchers can provide a great service by identifying the systemic supports that are most important. In particular, we need to learn more about how administrators support coaches. Answers to the following questions would be especially helpful: What are the benefits when principals (a) meet and collaboratively plan with coaches, (b) participate in professional development, (c) attend and ideally cofacilitate workshops? Which approaches to Instructional Leadership are most effective for supporting coaches, and what specific actions can principals take to accelerate Instructional Learning in schools? What can superintendents do to support coaching?

We also need to know more about the specific Professional Learning that supports coaching, both for coaches and administrators. What kinds of Professional Learning do coaches need and how frequently do they need it? Who coaches the coaches? What Professional Learning do principals and other administrators need? Who coaches administrators? Simply put, what do coaches, administrators, and others in an educational system need to know, and what is the best way for them to learn it?

Researchers can also move the field forward by identifying ways in which organizations can support or impede the growth of Professional Learning. Rosenholtz (1991) has written about the importance of "learning-enriched cultures," but what can leaders do to encourage the development of such cultures in support of Professional Learning? Researchers should also identify specific accelerators or decelerators for Professional Learning. For example, when does the number of innovations being introduced into a system inhibit overall growth in the system? How can educational systems and teachers' unions work together to support coaching? What types of scheduling best facilitate opportunities for collaboration? How do Professional Learning communities support coaching, and how can coaches support Professional Learning communities?

Finally, there are a number of important questions related to evaluation and development of coaches. Coaches are a unique species in most schools, and appropriate methods of evaluation need to be developed, validated, and used. We believe any evaluation method must be valid and reliable. Some factors researchers might consider for evaluation could be whether coaches know (a) the practices they are sharing, (b) how to enact the approach to coaching they are employing, and (c) how to organize and use their time for maximum efficiency.

What Are Best Practices for Coaches?

A great deal has been written about the process of coaching, and indeed, about the entire process of relationship building. Cognitive Coaching and Content Coaching, for example, include excellent questioning strategies, and Differentiated Coaching provides coaches with a methodology for understanding and responding appropriately to others' learning styles. Researchers such as Gottman (2001) and Ekman (2003) describe excellent strategies that coaches can use to communicate better. Nevertheless, we can learn a great deal more if other aspects of coaching receive further study. A primary goal of research should be to identify the most effective *and* efficient ways to promote high-quality learning among professionals. Thus, we need to determine which kinds of learning require one-to-one interaction, and which kinds of learning can occur in small or large groups. Similarly, we need to determine when it is essential that coaches model in teachers' classrooms and what effective modeling looks like.

Additionally, researchers can promote growth among the coaching literature by identifying best practices for enrolling teachers in the coaching process and how frequently teachers and coaches should meet once coaching has begun. Researchers can also provide an excellent service by describing how coaches and teachers should identify starting points for coaching and how frequently and how often coaches and teachers should meet. The development and validation of tools coaches can use for gathering data, communicating with teachers, and accelerating Professional Learning would be very beneficial.

On Which Teaching Practices Should Coaches Focus?

When educators consider the teaching practices coaches could share, they should be forgiven if they are overwhelmed. Among practices coaches might share are literacy strategies; reading strategies; differentiation techniques; The Big Four of classroom management, content, instruction, and assessment for learning; curriculum, lesson planning and mapping; questioning techniques; hands-on teaching; inclusive teaching practices; cooperative learning; project-based learning; colleague collaboration tools; rapport building and communication techniques—the possibilities are endless.

Researchers can provide an important service by helping educators sort through this jungle of interventions and identify which teaching practices are most likely to improve student achievement in which situations. Coaches cannot do everything, and teachers cannot learn everything. For that reason, we need educational scientists to help us identify which practices are best bets for improving student achievement in which situations.

What Impact Does Coaching Have on Student Achievement?

For some, this is the only research question that matters. We understand, and applaud, the primacy of student achievement as *the* goal for Professional Learning—if this doesn't improve student learning why would we do it?—but we would also offer some cautions. Coaching is one component of Professional Learning as it occurs in a system, and any evaluation of the impact coaching has on students also needs to evaluate other integral aspects of Professional Learning.

Guskey (2000) provides a model for evaluating five levels of Professional Learning . Level 1 assesses teachers' responses to all professional development activities. Level 2 assess teachers' knowledge of interventions. Level 3 assesses each school's capacity to support professional development. Level 4 assesses whether teachers are implementing teaching practices. Level 5 assesses the impact on student achievement.

Guskey's (2000) model highlights an important consideration for those who are intent on evaluating coaching. Undeniably, student achievement should be the most important concern of any assessment model. However, if program evaluation is based solely on achievement without considering the other levels of evaluation, teachers run the risk of abandoning programs that are exactly what their students need. If student achievement does not go up when a new approach is introduced, the reason may be that teachers didn't implement the program, that school structures stood in the way of implementation, or that the teachers did not have enough time or support to thoroughly learn or implement the program. Only when all five levels are attended to can evaluators know precisely which aspects of a program are working or are in need of improvement.

Researchers, then, can help educators in at least two ways. First, they can develop program evaluation tools that can be used to monitor growth and development in the five dimensions. Additionally, by highlighting

coaching programs that are successful in all five dimensions, researchers can point the way for all educators and researchers as we continue the challenging and important work of providing all students with learning experiences that help them identify and achieve meaningful goals in their lives.

FINAL THOUGHTS

Like much in education, and life for that matter, what we know for certain about coaching is much less than what we would like to know. However, a great deal of preliminary work has been completed. This body of preliminary work suggests that coaching is a promising approach for accelerating Professional Learning in schools. The work of researchers mentioned here has laid a foundation for our understanding of what coaching can be, and it has provided a road map for future research on coaching.

Few tasks are more challenging than trying to lead Professional Learning across an educational system, whether a school, a district, a state, or a nation. Change is almost always unpredictable, and frequently educators are frustrated by the slow pace of school improvement efforts. There are no silver bullets in education, and we feel confident in predicting that there never will be. However, research that gives coaches and other educational leaders more proven tools for moving schools forward renders an extremely important service. We are grateful to the researchers we have mentioned in this chapter for the pioneering work they have conducted. Thanks to their work, we can be better informed as we tackle the very challenging and important work of leading Professional Learning in schools.

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