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Coaching Teachers' Use of Social Behavior Interventions to Improve Children's Outcomes: A Review of the Literature

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Abstract

Children with social behavior problems need teachers who are prepared to use evidence-based interventions to increase their likelihood of success. However, it is clear that teachers do not feel prepared to support children in this area. One approach for supporting teachers in using more effective interventions for children with behavior needs is the use of coaching. The purpose of this review of the literature is to explore the research to date that specifically targets coaching teachers on the use of social behavior interventions to improve children's social behavior outcomes. Criteria were established to increase the generalizability of the results of the review and 29 studies met inclusionary criteria. Of these studies, 86% documented positive findings and the remaining documented neutral findings. Only 31% of studies documented a measure of integrity for the coaching process. Main findings and implications for future research are discussed.

Keywords

behavior supports, coaching, consultation

In the past decade, school practices have received greater scrutiny and student progress has been more consistently monitored (Horner et al., 2005; Kretlow, & Bartholomew, 2010). In tandem, there is greater focus on accountability and the use of evidence-based practices to improve student outcomes (Horner et al., 2005; Kretlow & Bartholomew, 2010). As a result, teachers are called on to adopt new practices to improve students' social behavior (e.g., Carter & Van Norman, 2010; Hemmeter, Snyder, Kinder, & Artman, 2011). Many school-based social-behavioral interventions positively impact students (National Research Council & Institute of Medicine, 2009). Social behavior interventions are those interventions that improve children's social and behavioral outcomes. However, the effect of an intervention is mediated by the quality of implementation of the intervention itself and the support systems, or infrastructure necessary to coordinate, deploy, and sustain the intervention. Fidelity of implementation includes teacher use of an intervention as intended, which entails using all components of an intervention. Because teacher fidelity impacts intervention effectiveness, and ultimately student outcomes, the provision of adequate training and support within the context of the classroom is critical (Denton & Hasbrouck, 2009; Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Joyce & Showers, 1982).

Coaching as a model of consultation is one way to support teachers' use of specific skills, within the applied setting of their classrooms, and to assist with generalization, and sustained implementation (Fixsen et al., 2005; Noell et al., 2005). This is particularly important in the area of social behavior interventions given problem behavior has a profound impact on teachers and peers (e.g., Carter & Van Norman, 2010), and because teachers have reported they need assistance implementing social behavior interventions and do not know what practices are evidence based (e.g., Reinke, Stormont, Herman, Puri, & Goel, 2011). Therefore, the purpose of this review is to contribute to the literature in the area of coaching teachers' use of social behavior interventions. The need to support teachers' use of effective practices through the use of coaching models and the importance of this review on a specific type of coaching model are presented next.

Promoting the use of effective social behavior interventions with high fidelity is a critical component of effective

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teaching. Research indicates that support in the form of coaching can result in increased implementation of newly learned practices (Joyce & Showers, 1982; Showers, Joyce, & Bennett, 1987), and higher student achievement (Showers, 1984). More recently, Cornett and Knight (2009) reviewed research on cognitive coaching, peer coaching, instructional coaching, and literacy coaching. They found that much of the research across the various coaching models has been "exploratory process and development, lacking the rigor of true scientific development" (Cornett & Knight, p. 209). The preponderance of studies focused on academic instructional practices. In another recent review of the literature, Kretlow and Bartholomew (2010) utilized strict selection criteria and included 13 studies; only one of the studies focused on coaching for an intervention targeting social behavior the remaining articles focused on other instructional methods (e.g., direct instruction, peer tutoring, student active responding). In another review utilizing only single subject studies, researchers evaluated a form of coaching that utilized performance feedback where teachers were observed in their classrooms and then provided performance feedback on target behaviors; positive findings were documented for this form of coaching (Solomon, Klein, & Politylo, 2012). Thus, performance feedback appears to be a vital component for increasing teacher implementation of new skills in their classrooms. However, many questions remain unanswered, especially in the area of coaching teachers' use of social behavior interventions.

This review of the literature will add to the coaching literature in several ways. First, we will describe the current literature base regarding the effectiveness of the use of social-behavioral interventions with a coaching component. It is necessary to provide a clear definition of coaching as past research has included different definitions of coaching (see Pas, Bradshaw, & Cash, 2014). In this review of the literature, coaching is defined as a non-evaluative, ongoing process (e.g., occurring over a period of time), in which one individual observes and provides feedback to another individual targeting an intervention, supports or other variables the individual wants to increase in the classroom. The influence of such explicit attention to the behavior of the teacher as the mediator of an intervention promotes higher levels intervention fidelity (Sanetti, Kratochwill, & Long, 2013). This definition of coaching is utilized because indirect coaching that occurs without direct, ongoing observation and feedback has not been as effective as models that include this level of support (e.g., Noell et al., 2005). Coaching based on direct observation and feedback can also respond to the problem of inadequate intervention implementation on the part of the teacher (Burns & Ysseldyke, 2009; Noell et al., 2005). Second, research including mostly academic coaching has documented a lack of assessment of the fidelity of the coaching process (Kretlow, & Bartholomew, 2010). Intervention fidelity also requires that the process be conducted accurately (Noell, 2008). Accordingly, this review of the literature will also address whether process fidelity is measured in studies. Third, as we try to bridge the research to practice gap, it is clear that this process is bidirectional; researchers must assess the acceptability and perceived value of the intervention to the consumers, also known as social validity.

Also, coaching models have included many elements such as direct observation of teachers, provision of feedback, and instruction on certain skills (e.g., modeling, role-play, etc.). However, in addition to these elements, little is empirically known about the most effective way to coach teachers, the training needs and skill levels of coaches, and how coaching is delivered specifically to improve social behavior outcomes for students. These details can identify key features of successful coaching models, as well as provide useful directions for future research in this area.

Research Questions

Research Question 1: What is the current literature base on social-behavioral interventions that include a coaching component, according to our definition of coaching of teachers? For example, the settings, the intervention targets, and relative findings (including overall findings, maintenance, and generalization) are presented.

Research Question 2: Specifically related to social behavior interventions that use coaching, has the fidelity of the coaching process been measured in past research? If fidelity was measured, how was it measured?

Research Question 3: Specifically related to social behavior interventions, is there evidence that coaching is perceived as socially valid and acceptable to teachers?

Research Question 4: Specifically related to social behavior interventions, what are the specific elements of coaches and coaching that have been reported in the literature (e.g., role-play, modeling)?

Method

Selection Criteria of Studies

Specific criteria and foci were established to guide the literature review. Only published peer-reviewed journal articles were included. Accordingly, books, unpublished manuscripts, and dissertations were excluded. The search years were from 1990 to 2011. In terms of the content of the articles, for research studies to be considered for this review, the following criteria were used. First, the study had to include an intervention that focused on teacher use of an intervention for improving social and behavioral outcomes for students. Second, the study needed to include teachers, including preschool, general or special educators, as the participants receiving coaching. Therefore, excluded from

this review were studies focusing on para-professionals, instructional aides, preservice teachers, day care providers, students, and parents as the recipients of the coaching. Third, it was required that the setting of the study was in a classroom in a traditional typical public school or preschool environment. Therefore, interventions implemented in a clinical, residential, alternative, or private more specialized treatment facility (e.g., Boys Town) by facility, clinical or teaching staff were not included. Last, as stated in the introduction, coaching was defined as a non-evaluative, ongoing process in which one individual observes and provides feedback to another individual targeting specific practices the individual wants to increase in the classroom. These criteria were selected to increase the generalizability of the findings to typical school settings and not more restrictive settings.

Search Procedures

Two main literature search procedures were utilized to identify articles for this review. The chosen approaches are similar to those used in other literature reviews on consultation (Kretlow & Bartholomew, 2010; Solomon et al., 2012).

Computer searches. Searches for peer-reviewed journal articles were conducted using the online database of PsychINFO and ERIC. Various combinations of the following descriptors were used: teacher, school, coaching, consultation, social, behavior, modeling, performance feedback, and observations. Results for the various combinations ranged from 4 to 268 peer-reviewed articles. For the purposes of this review, books and dissertations were excluded. Based on the defined criteria, this search resulted in 28 studies that *were considered* appropriate.

Ancestral search and reviews of literature. An ancestral search was also conducted and involved reviewing the reference lists of journal articles to identify additional studies. Nine additional studies were identified through an ancestral search of introductions to articles and two recent reviews of the literature for a total of 37 articles. As indicated in the following section, another level of review occurred that decreased the number of articles considered.

Selection determination. Two doctoral students conducted the first review of the computer and ancestral searches and identified abstracts to review. If an abstract appeared to include coaching as an intervention for social behavior, the full article was retrieved and reviewed. Both doctoral students reviewed all abstracts and all articles selected. When there was a conflict regarding whether an abstract or article met the criteria for the review, the first author served as a third reviewer to make the decision to include or not. Articles were considered for the review after their method section was evaluated to determine whether the intervention included a coaching component that met the definition provided above. The first and third authors reviewed articles under consideration to determine whether the procedural design was appropriate to obtain objective results and that sound data analysis was used. This allowed for the coding of positive, neutral, and negative findings. Only single subject and group designs were included to be able to make determinations regarding the relationship between independent and dependent variables. Correlational, descriptive, and case studies were not included in the review. Once considered appropriate for the review, details regarding the studies were coded and presented in the "Results" section. The final number of articles included after this level of *review* was 29.

Analysis. Research questions were used to organize the coding of categories in Tables 1 and 2. Table 1 includes target outcomes coded including the specific intervention teachers were being coached to increase. Fidelity to the coaching process was defined as any documentation and/or observation of the coach implementing the coaching portion of the intervention. Social validity was defined as meaningful changes based on perception of consumer or social comparisons as well as perceptions of the acceptability of the intervention. Maintenance included any type of follow-up assessment to assess maintenance of effects after the intervention was terminated. Generalization included assessment of whether changes occurred in behaviors, settings, or individuals not targeted by the intervention. Findings were coded as positive if the direction of the results indicated consistent changes in the dependent variable related to the intervention with a coaching component. Findings were coded as neutral if there was not a change in dependent variables or if findings were inconsistent (e.g., outcomes were inconsistent across study subjects). If negative results were documented (without any positive), studies would be coded negative. The second part of the analysis was determined through the authors' expertise in this area and the research questions about coaching details. Thus, Table 2 is a descriptive analysis of coaching elements to help direct practice and needs for future research. The first and third authors served as the primary coders for the tables. For Table 1, the third author coded all the articles and the first author coded 50% of the articles; for the articles coded by both authors, 97% agreement was obtained for codes. For the one article where findings were coded differently, the authors had a discussion and determined findings related to the consultation model that included a coaching component (according to our definition of coaching) did yield positive findings but another model also included in the study that did not match our definition was not effective. Table 2 was coded by the third author, and the first author then verified all information; 100% agreement was reached.

Table 1. Summary of Coaching Studies Reviewed.

Authors and year	Target for teacher	DV student	Design	Social validity	Process integrity	Follow-up	Generalization	Results
Carter and Van Norman (2010)	Universal PBIS	Engagement, problem behavior	Single subject	Yes	No	No	No	Neutral
Conduct Problems Prevention Research Group (1999)	PATHS implementation	Aggression, hyperactive, disruptive behavior, classroom atmosphere	Group	No	No	No	No	Positive
Conduct Problems Prevention Research Group (2010)	PATHS implementation	Aggression, hyperactive–aggressive, disruptive, social competence	Group	No	No	No	No	Positive
De Pry and Sugai (2002)	Active supervision, precorrections, daily data review	Behavior incidents	Single subject	Yes	No	No	No	Positive
DiGennaro, Martens, and McIntyre (2005)	Behavior Support Plan	Off task	Single subject	Yes	Yes	No	No	Positive
Domitrovich, Gest, Jones, Gill, and Sanford DeRousieet (2010)	REDI Curriculum Implementation	Social-emotional competence	Group	No	No	No	No	Neutral
Dusenbury et al. (2010)	ALL STARS	Drug use, fighting	Group	Yes	No	No	No	Neutral
Farmer-Dougan, Viechtbauer, and French (1999)	Skill Streaming Curriculum	Off task and play	Single subject	No	No	No	No	Positive
Filcheck, McNeil, Greco, and Bernard (2004)	Classroom management; level system	Inappropriate behavior	Single subject	Yes	No	Yes+	No	Positive
Fuchs, Fuchs, Bahr, Fernstrom, and Stecker (1990)	Contracts	Problem behavior, behavior goals	Group	Yes	Yes	Yes−	No	Positive
Fullerton, Conroy, and Correa (2009)	Praise	Engagement, compliance	Single subject	Yes	No	No	Yes+	Positive
Hemmeter, Snyder, Kinder, and Artman (2011)	Praise	Challenging behavior, engagement	Single subject	Yes	Yes	No	No	Neutral
Hundert and Hopkins (1992)	Support and prompts for positive play	Positive play behavior	Single subject	Yes	Yes	No	Yes+	Positive
Kam, Greenberg, and Kusche (2004)	PATHS implementation	Externalizing internalizing, social competence	Group	No	No	Yes+	No	Positive

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Table 1. (continued)

Authors and year	Target for teacher	DV student	Design	Social validity	Process integrity	Follow-up	Generalization	Results
Luiselli, Putnam, Handler, and Feinberg (2005)	Positive behavior support implementation	Discipline problems	Group	Yes	No	Yes+	No	Positive
Lyon et al. (2009)	Positive teacher behavior	—	Single subject	Yes	No	Yes+	No	Positive
Matheson and Shriver (2005)	Effective commands	Compliance, engagement	Single subject	Yes	No	No	No	Positive
Mesa, Lewis-Palmer, and Reinke (2005)	Praise	Disruptions	Single subject	Yes	No	Yes−	No	Positive
Myers, Simonsen, and Sugai (2011)	Praise, negative interactions/ratio	Engagement, disruptive, off-task behavior	Single subject	Yes	No	No	No	Positive
Noell, Duhon, Gatti, and Connell (2002)	Behavior plan implementation	Disruptive behavior, work completion	Single subject	Yes	Yes	No	No	Positive
Raver et al. (2009)	Program implementation	Internalizing, externalizing	Group	Yes	Yes	No	No	Positive
Reinke, Lewis-Palmer, and Martin (2007)	Praise	Disruptive behavior	Single subject	Yes	No	Yes+	Yes+	Positive
Reinke, Lewis-Palmer, and Merrell (2008)	Praise, reprimands	Disruptive behavior	Single subject	Yes	Yes	Yes+	No	Positive
Riley-Tillman and Eckert (2001)	Praise, generalization	Off task	Single subject	Yes	Yes	No	Yes-2/3	Positive
Rodriguez, Loman, and Horner (2009)	First steps implementation	Problem behavior	Single subject	No	Yes	No	No	Positive
Roelofs, Veenman, and Raemaekers (1994)	Classroom management	Time on task	Group	No	No	No	No	Positive
Smith, Lewis, and Stormont (2011)	Praise, precorrection	Aggression, on task	Single subject	Yes	No	No	No	Positive
Stormont, Smith, and Lewis (2007)	Praise, precorrection	Problem behavior	Single subject	Yes	No	No	No	Positive
Sutherland, Wehby, and Copeland (2000)	Praise	On task	Single subject	No	No	No	No	Positive

Note. DV = dependent variable; PBIS = positive behavior interventions and supports; PATHS = Promoting Alternative THinking Strategies; REDI = REsearch-based, Developmentally Informed.

Table 2. Setting and Coaching Details.

Authors and year	Setting/population	Coach background	Coach training details	Other coaching activities described	Coaching time	Feedback method
Carter and Van Norman (2010)	Four preschool teachers 24 preschoolers observed	First author and graduate students in ECSE	Not provided	Feedback on nine key skills	1-hr initial meeting, 30-min follow-up	Verbal and in visual form (graphed data) in a standardized feedback sheet
Conduct Problems Prevention Research Group (1999)	198 first-grade teachers received the intervention	Experienced teachers	Not provided	Modeling and feedback on teacher delivery of curriculum	1–1.5 hr per week in classroom, additional meetings held	Verbal
Conduct Problems Prevention Research Group (2010)	190 first-grade teachers received the intervention	Experienced teachers	Not provided	Modeling and feedback on teacher delivery of curriculum	1–1.5 hr per week in classroom, additional meetings held	Verbal
De Pry and Sugai (2002)	1 sixth-grade teacher, 26 students	Researcher	Not provided	Feedback on three strategies	5–10 min each morning in classroom during both intervention phases	Visual form (graphed data) and in verbal form
DiGennaro, Martens, and McIntyre (2005)	Four elementary teachers, Four students K-6th grade	First author	Not provided	Feedback on use of intervention in mailbox following observation; if integrity of plan was below 100%, teachers met with coach to practice and review	Written feedback with graphs in mailbox after each observation, meeting scheduled if low integrity, had to show 100% for 3 days to move to fading	In written word and graph form
Domitrovich, Gest, Jones, Gill, and Sanford DeRousieet (2010)	22 Head Start classrooms; 192 4-year-olds	Experienced teachers	Not provided	Modeling, coaching, observing, feedback, team teaching	Weekly ~4 hr/week (3 hr in classroom)	Verbal
Dusenbury et al. (2010)	16 seventh-grade teachers; 408 students	Experienced teachers with prevention programming backgrounds	Study author trained coaches via phone, coaching topics were refined and operationalized.	Followed checklist to assess teacher fidelity on program delivery	At least 4 times in person; at least once/month via telephone. Usually lasted ~1 hr.	Verbal

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Table 2. (continued)

Authors and year	Setting/population	Coach background	Coach training details	Other coaching activities described	Coaching time	Feedback method
Farmer-Dougan, Viechtbauer, and French (1999)	Two Head Start preschool teachers; 14 students	First author	Not provided	Support for implementing the *Skillstreaming* curriculum	Twice/week in classroom; time varied between 20 min and 1 hr each meeting.	Not clear
Filcheck, McNeil, Greco, and Bernard (2004)	One preschool class; one teacher, one aide (aide "changed frequently"); 17 children	Study authors	Not provided	Coaching included modeling and feedback through mastery, followed by feedback if integrity fell below 80%	First two days of coaching: 15-min coaching, 15-min feedback. 7th and 10th day: 15-min modeling. After additional training, feedback on 2 days: 1 hr each.	Verbal feedback, if treatment integrity below 80% (7 times)
Fuchs, Fuchs, Bahr, Fernstrom, and Stecker (1990)	43 general educators teaching fifth to seventh grade received intervention; 43 challenging to teach students	Support staff, SpEd resource teachers, school psychologists, and librarian; four graduate students supported coaches	2 days of training (16 hr) with corrective feedback; onsite support from graduate students	Compared three behavior consultations with different levels of consultation; two groups received observations and feedback	Two BC groups included coaching; at least two visits	Dependent on BC group; two groups received corrective feedback
Fullerton, Conroy, and Correa (2009)	Four early childhood educators and four children	Investigator	Not provided	Coach completed a treatment checklist, teachers had visual cards as reminders	After each session, brief email or written feedback provided	Email or written
Hemmeter, Snyder, Kinder, and Artman (2011)	Four early childhood teachers and their students	Doctoral students in ECSE	Not provided	Email feedback (supportive, corrective, action plans) daily on use of praise with links to video examples	2–3 times per week. Email feedback daily on use of praise with links to video examples	Email feedback on use of praise
Hundert and Hopkins (1992)	Three preschool classrooms received the intervention, one teacher and one resource teacher per classroom; 47 children	Three experienced preschool supervisors	Trained by study authors in 2-hr sessions. Role-playing, feedback, and coaching-based off-training manual until criteria were met	Role-play, coaching and feedback on collaborative team approach	Two initial 30-min meetings, at least three additional visits	Verbal

(continued)

Table 2. (continued)

Authors and year	Setting/population	Coach background	Coach training details	Other coaching activities described	Coaching time	Feedback method
Kam, Greenberg, and Kusche (2004)	18 SpEd elementary classrooms, 133 children with disabilities; nine classrooms randomly assigned to intervention	University professors and faculty; also experienced counselors and teachers	Not provided	Modeling, coaching, feedback regarding program delivery	Weekly meetings	Verbal
Luiselli, Putnam, Handler, and Feinberg (2005)	Whole-school received intervention over 3-year pre, intervention, follow-up phases	Psychologists	Not provided	Performance feedback after class-level observations; coaching work with teams	Present at schools twice a month	Not clear
Raver et al. (2009)	18 treatment classrooms with 281 children (17 control with 262), all Head Start preschools	Trained mental health consultants	Trained for 2 days in implementing full model; supervision occurred after training	Followed protocol for coaching including discussion, developing goals, providing feedback, problem solving	First ten weeks if intervention on a weekly basis	Verbal
Reinke, Lewis-Palmer, and Martin (2007)	Three third-grade general education classrooms, six students, two students per classroom with behavior problems	First author	Not provided	Practiced praise, taught how to interpret graphs	Three 30-min group consultation meetings followed by daily graphed performance feedback	Graphed visual performance feedback, no verbal feedback
Reinke, Lewis-Palmer, and Merrell (2008)	Four elementary general education teachers	First author	Not provided	Feedback session on classroom management, selection and development of an intervention, teacher self-monitored	Feedback session as part of the classroom check-up, daily visual performance feedback	In visual form (graph) no verbal feedback
Riley-Tillman and Eckert (2001)	Three general educators, teaching first to third grade	First author	Not provided	Problem identification, review of data, targeted intervention, adapted to classroom, role-play, feedback, prompts for generalization	Five sessions for all, Session 4 = generalization prompt (2 min); Session 5 = training for generalization (10 min)	In person verbally; feedback note, if implementation <75%

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Table 2. (continued)

Authors and year	Setting/population	Coach background	Coach training details	Other coaching activities described	Coaching time	Feedback method
Rodriguez, Loman, and Horner (2009)	Three teachers, three K-1st grade students	Doctoral candidates	Not provided except for FSS training	Coach used a card with five key features listed, provided feedback on implementation	Four sessions with feedback	Written and verbal feedback based on observation cards
Roelofs, Veenman, and Raemaekers (1994)	Dutch primary general education mix-aged classrooms; 28 coached teachers, 14 control.	School counselors	Not provided	Preobservation discussion of targets, postobservation discussion of plans for improvement	Occurred between workshops that occurred over 4 months	In person verbally, discussed observation forms
Smith, Lewis, and Stormont (2011)	Three Head Start teachers; three students, ages 4–5 years with challenging behavior	Doctoral student	Not provided	Training included practice, role-play, then daily feedback	Daily	Verbal
Stormont, Smith, and Lewis (2007)	Three total from Head Start two teachers and one aid; 25 children ages 4–5	First author	Not provided	Discussion, role-play, practice	30-min initial meeting; daily feedback sessions (n = 4–10)	Verbal
Sutherland, Wehby, and Copeland (2000)	One middle school teacher in self-contained classroom with nine students with EBD	Author	Not provided	Preobservation goal reminder, postobservation feedback and praise	~12	Verbal

Note. ECSE = early childhood special education; BC = behavior consultation; EBD = emotional and behavioral disorders; FSS = First Steps to Success.

Results

The studies reviewed are included in Tables 1 and 2. In the following sections, main findings across the 29 studies are described according to general effectiveness, design, maintenance and generalization of effects, coaching process fidelity, and social validity. Following these sections, the specifics regarding the elements of coaching are delineated. The results presented are descriptive in nature and address the specific research questions.

Literature on Intervention Studies Using Coaching

The setting for the studies included in this review included preschool (41%), elementary (41%), and middle/junior high school (18%). The vast majority of the recipients of coaching (90%) were general educators; only two studies included a special educator as the main consultee (7%), and in one study (3%), the entire elementary school represented the consultee, which would presumably include general and special educators. No studies were reviewed that included a high school setting.

Overall, 25 studies, which reflects 86% of the studies, had positive findings related to interventions that used coaching (see Table 1). The remaining 14% of studies yielded neutral findings; no reviewed studies had negative findings. The vast majority of reviewed studies, 69%, were single subject designs and 31% were group designs. For the group design studies, 7 out of 9 (78%) had positive results and 2 had neutral. For the single subject designs, 18 out of 20 yielded positive results (90%) and 2 had neutral findings. Only 28% of studies reviewed reported some type of follow-up assessment for maintenance of effects; 6 of these 8 studies reported positive findings at follow-up. Only 4 studies, or 14%, reported generalization assessments; 3 out of 4 reported positive findings across individuals or settings, and the other study reported positive findings for two of the three teachers.

Fidelity of Coaching Process

Only nine or 31% of the articles reviewed measured fidelity of the coaching portion of the intervention. For the studies that included coaching process fidelity measures, eight yielded positive results (89%), and one had neutral results. In terms of how coaching process integrity was measured, in seven of the nine articles, specific details on how the fidelity data were collected and analyzed were delineated. Typically an independent observer collected data using a scripted checklist either in person or by listening to audiotapes for a certain percentage or number of observations and studies reported high levels of fidelity in their measures of coach implementation (95%-100%).

Social Validity of Coaching

The vast majority of articles, 72%, reported some type of social validity. All of these studies (100%) include positive findings related to teacher perceptions of satisfaction with interventions with a coaching component and their perceptions of the meaningfulness of the intervention. It is important to note that not all studies assessed coaching components specifically; thus, it is difficult to ascertain whether teachers' positive perceptions were related to coaching or the overall interventions. Even though all studies have positive findings, a few studies reported some mixed results with some teachers reporting less satisfaction with one type of variable, such as time or intrusiveness related to the intervention.

Details of Coaches and Coaching Elements

The coaches in the reviewed studies represented people with a level of expertise and skills related to social-behavioral interventions. Specifically, 83% of the studies included an author, researcher, or investigator as coach (n = 15), doctoral-level students (n = 4), or psychologists, counselors, supervisors, or mental health consultants (n = 5) as coaches. Only a small percentage, 14%, included experienced teachers as coaches. Little information is available in the literature reviewed regarding whether and how coaches are trained. Only four studies (14%) provided information on how coaches were trained. Of these studies, three (75%) reported they included a measure of coaching process fidelity as well.

Aside from the provision of feedback, which was one of our criteria for inclusion in this coaching review, there is a lack of standardized information available outlining details of the coaching process including how much time was spent on different activities and how often coaching occurred. Across studies, it appears that the time varied from one follow-up meeting to daily coaching over a long period of time. The manner in which the coaching time was spent also varied across studies. In studies that specified coaching activities beyond the provision of "feedback" or "support" coaching activities included modeling, practice, team teaching, role-play, and goal setting. Thus, this research question with regard to the skills required to serve as coaches, how coaches are trained, and the amount and type of coaching provided could not be adequately answered.

The majority of studies included performance feedback in a verbal format. Nine studies (31%) included feedback in both verbal and written form. Four studies included feedback in only visual or email formats. Many studies referenced a specific standardized feedback sheet, card, or other record of target variables to support standardized feedback. One study used a feedback note if implementation of the intervention fell below 75% and other studies similarly

used feedback for low treatment integrity and used the criterion of 80% or 100%. There was also no clear pattern between study outcomes and type of feedback used in the coaching models.

Discussion

Coaching is an important method for providing needed supports to teachers. The purpose of this study was to review the available literature on the use of coaching with teachers with an emphasis on social-behavioral interventions. Several important findings were documented. First coaching to increase teachers' use of a variety of social behavior interventions appears to be effective. Of the 29 studies reviewed, 86% found that interventions using ongoing coaching helped to increase teacher use of effective practices. Of the remaining studies, most not only found some positive findings but also had some neutral findings associated with interventions. The majority of the recipients of coaching were general educators. Part of the reason the primary recipients were general educators is potentially due to our inclusion criteria, which included a focus on public school settings and not more restrictive settings. Given the unique contextual factors that create challenges and influence the quality of implementation of interventions (Fixsen et al., 2005), it is not surprising that teachers would benefit from supports in the form of coaching. However, despite the clear need for providing coaching to support teachers few studies investigate coaching as an independent variable. Instead, in the majority of studies, a specific intervention or practice was the target of the study, and coaching was described as an ancillary component. Given the significant gap documented in the literature between research and practice, there is a need for researchers to develop and evaluate the support systems necessary for schools to implement interventions with high fidelity. Thus, research on the use of coaching, which provides a transparent look at the coaching process, the training and supervision needed for the coach to be successful, and outcomes specifically associated with the use of coaching (e.g., improved teacher skills and efficacy, increased teacher adherence and quality of implementation) are needed.

Performance feedback seems to be a critical component to any coaching model and was therefore included in our definition of coaching for this literature review. Furthermore, although studies may describe the coaching process (e.g., model, observe, provide feedback), we did not identify any studies meeting our definition of coaching that provided information on the amount of time coaches spent implementing specific coaching practices with the exception of the amount of time coaches provided feedback. Furthermore, across studies, some coaching occurred for very brief periods of time, whereas in other studies, coaching sessions occurred across the school year.

It has been documented within studies that different teachers need different levels of support (e.g., Hemmeter et al., 2011). Indeed, a few of the studies with neutral findings documented that some teachers seemed to benefit from coaching and others did not (e.g., Dusenbury et al., 2010). Individual teacher differences may also impact maintenance and generalization; one study documented that only one of two participants maintained effects over time (Mesa, Lewis-Palmer, & Reinke, 2005). Other research found positive findings for coaching but when generalization training occurred two teachers were able to generalize the coached behavior but one was not (Riley-Tillman & Eckert, 2001). Research on the need for coaching at varying intensities can help in the development of a tiered approach to coaching teachers, similar to how school-wide behavior support systems approach students in need of additional behavioral supports. For instance, Reinke and colleagues (2012) provided pilot data on the use of a targeted coaching model for teachers who struggled to implement a social emotional intervention despite initially receiving support from a universal coaching model. Another study included in this review utilized a response-to-intervention approach to identify teachers a more intense coaching model (i.e., daily rather than weekly feedback) to meet behavior change goals (Myers, Simonsen, & Sugai, 2011). Future research on effective practices for identifying teachers in need of additional support and data for how and when to remove coaching supports from teachers is needed.

However, before we can effectively research the coaching process and associated outcomes, measures of fidelity to the coaching models need to be developed and utilized. Given the connection between the fidelity to an intervention and associated outcomes (e.g., Fixsen et al., 2005; Forman et al., 2013; Noell et al., 2005), fidelity to coaching procedures will likely improve outcomes if those procedures are in fact vital to the model. In this review, only 31% of studies measured fidelity of coaching activities. Future research on coaching will need to measure and document fidelity of the coaching process. Another important finding from this review is that social validity data indicate teachers' report they benefit from coaching. Future research should continue to explore what types of coaching activities teachers feel are most valuable and if there are specific teacher variables that predict willingness to be coached. Finally, future research in this area needs to address the maintenance and generalization of coaching effects.

Limitations

There are several limitations of this review. Coaching was not typically an independent variable and therefore the direct relationship between coaching and outcomes could not be ascertained. Further individual components of coaching were not analyzed for their potential impact on student

outcomes. A meta-analysis was not conducted; as a result, only descriptive conclusions can be made. Even given these limitations, there are some implications for practice.

Implications for Practice

First, it is imperative that schools build capacity to provide teachers with the support they need when implementing new practices to promote social behavior growth in students. Most coaches within this literature review were reported to be highly skilled professionals. Furthermore, these professionals were often outside experts brought in to support teachers rather than identified natural implementers within school systems. Recent advances in implementation science has led to insights into the contextual supports needed for successful implementation, providing a compelling rationale for attending to the actions taken within a school system to ensure that intervention delivery is complete and appropriate (Forman et al., 2013). Therefore, intervention development should include consideration of the resource requirements, organization resources, and necessary supports required to effectively implement the practice. Effective interventions that can be widely adopted and implemented with high fidelity by schools with varying resources and from different contexts are needed (Glasgow, Bull, Piette, & Steiner, 2004). Thus, embedding school-based personnel as coaches with expertise to provide ongoing support for teachers, including observation and performance feedback, within the ongoing practice of schools could increase the feasibility and reach of effective social-behavioral interventions. Second, not all teachers need the same level of support, and this should be considered. Finally, there is flexibility regarding how and when performance feedback is provided. Coaching is a highly promising method for supporting teacher in effective practices. Efforts toward understanding how to make coaching highly effective and feasible will likely increase positive outcomes for teacher and students.

Authors' Note

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References

Burns, M. K., & Ysseldyke, J. E. (2009). Reported prevalence of evidence-based instructional practices in special education. *The Journal of Special Education*, *43*, 3–11. doi:10.1177/0022466908315563

Carter, D. R., & Van Norman, R. K. (2010). Class-wide positive behavior support in preschool: Improving teacher implementation through consultation. *Early Childhood Education*, *38*, 279–288.

Conduct Problems Prevention Research Group. (1999). Initial impact of the fast track prevention trial for conduct problems: II. Classroom effects. *Journal of Consulting and Clinical Psychology*, *67*, 648–657.

Conduct Problems Prevention Research Group. (2010). The effects of a multiyear universal social-emotional learning program: The role of student and school characteristics. *Journal of Consulting and Clinical Psychology*, *78*, 156–168.

Cornett, J., & Knight, J. (2009). Research on coaching. In J. Knight (Ed.), *Coaching: Approaches and perspectives* (p. 209). Thousand Oakes, CA: Corwin Press.

Denton, C., & Hasbrouck, J. (2009). A description of instructional coaching and its relationship to consultation. *Journal of Educational and Psychological Consultation*, *19*, 155–175.

De Pry, R. L., & Sugai, G. (2002). The effects of active supervision and pre-correction on minor behavioral incidents in a sixth grade general education classroom. *Journal of Behavioral Education*, *11*, 155–267.

DiGennaro, F. D., Martens, B. K., & McIntyre, L. L. (2005). Increasing treatment integrity through negative reinforcement: Effects on teacher and student behavior. *School Psychology Review*, *34*, 220–231.

Domitrovich, C. E., Gest, S. D., Jones, D., Gill, S., & Sanford DeRousie, R. M. (2010). Implementation quality: Lessons learned in the context of the Head Start REDI trial. *Early Childhood Research Quarterly*, *25*, 284–298.

Dusenbury, L., Hansen, W. B., Jackson-Newsom, J., Pittman, D. S., Wilson, C. V., Nelson-Simley, K., . . . Giles, S. M. (2010). Coaching to enhance quality of implementation in prevention. *Health Education*, *110*, 43–60.

Farmer-Dougan, V., Viechtbauer, W., & French, T. (1999). Peer-prompted social skills: The role of teacher consultation in student success. *Educational Psychology*, *19*, 207–219.

Filcheck, H. A., McNeil, C. B., Greco, L. A., & Bernard, R. S. (2004). Using a whole-class token economy and coaching of teacher skills in a preschool classroom to manage disruptive behavior. *Psychology in the Schools*, *41*, 351–361.

Fixsen, D., Naoom, S., Blase, K., Friedman, R., & Wallace, F. (2005). *Implementation research: A synthesis of the literature* (FMHI Publication No. 231). Tampa: University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network.

Forman, S. G., Shapiro, E. S., Codding, R. S., Gonzales, J. E., Reddy, L. A., Rosenfield, S. A., . . . Stoiber, K. C. (2013). Implementation science and school psychology. *School Psychology Quarterly*, *28*, 77–100. doi:10:1037/spq0000019

Fuchs, D., Fuchs, L. S., Bahr, M. W., Fernstrom, P., & Stecker, P. M. (1990). Prereferral intervention: A prescriptive approach. *Exceptional Children*, *56*, 493–521.

Fullerton, E. K., Conroy, M. A., & Correa, V. I. (2009). Early childhood teachers' use of specific praise statements with young children at risk for behavioral disorders. *Behavioral Disorders*, *34*, 118–135.

Glasgow, R., Bull, S., Piette, J., & Steiner, J. (2004). Interactive behavior change technology: A partial solution to the competing demands of primary care. *American Journal of Preventive Medicine*, *27*, 80–87.

Hemmeter, M. L., Snyder, P., Kinder, K., & Artman, K. (2011). Impact of performance feedback delivered via electronic mail on preschool teachers' use of descriptive praise. *Early Childhood Research Quarterly*, *26*, 96–109.

Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Exceptional Children*, *71*, 165–179.

Hundert, J., & Hopkins, B. (1992). Training supervisors in a collaborative team approach to promote peer interaction of children with disabilities in integrated preschools. *Journal of Applied Behavior Analysis*, *25*, 385–400.

Joyce, B., & Showers, B. (1982). The coaching of teaching. *Educational Leadership*, *40*, 4–10.

Kam, C., Greenberg, M. T., & Kusche, C. A. (2004). Sustained effects of the PATHS curriculum on the social and psychological adjustment of children in special education. *Journal of Emotional and Behavioral Disorders*, *12*, 66–78.

Kretlow, A. G., & Bartholomew, C. C. (2010). Using coaching to improve the fidelity of evidence-based practices: A review of studies. *Teacher Education and Special Education*, *33*, 279–299.

Luiselli, J. K., Putnam, R. F., Handler, M. W., & Feinberg, A. B. (2005). Whole-school positive behavior support: Effects on student discipline problems and academic performance. *Educational Psychology: An International Journal of Experimental Educational Psychology*, *25*, 183–198.

Lyon, A. R., Gershenson, R. A., Farahmand, F. K., Thaxter, P. J., Behling, S., & Budd, K. S. (2009). Effectiveness of teacher-child interaction training (TCIT) in a preschool setting. *Behavior Modification*, *33*, 855–884.

Matheson, A. S., & Shriver, M. D. (2005). Training teachers to give effective commands: Effects on student compliance and academic behaviors. *School Psychology Review*, *34*, 202–219.

Mesa, J., Lewis-Palmer, T., & Reinke, W. (2005). Providing teachers with performance feedback on praise to reduce student problem behavior. *Beyond Behavior*, *15*, 3–7.

Myers, D. M., Simonsen, B., & Sugai, G. (2011). Increasing teachers' use of praise with a response-to-intervention approach. *Education and Treatment of Children*, *34*, 35–59.

National Research Council & Institute of Medicine. (2009). *Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities*. Washington, DC: National Academies Press.

Noell, G. H. (2008). Research examining the relationships among consultation process, treatment integrity, and outcomes. In W. P. Erchul & S. M. Sheridan (Eds.), *Handbook of research in school consultation: Empirical foundations for the field* (pp. 315–334). Mahwah, NJ: Lawrence Erlbaum.

Noell, G. H., Duhon, G. J., Gatti, S. L., & Connell, J. E. (2002). Consultation, follow-up, and implementation of behavior management interventions in general education. *School Psychology Review*, *31*, 217–234.

Noell, G. H., Witt, J. C., Slider, N. J., Connell, J. E., Gatti, S. L., Williams, K. L., . . . Duhon, G. (2005). Treatment implementation following behavioral consultation in schools: A comparison of three follow-up strategies. *School Psychology Review*, *34*, 87–106.

Pas, E. G., Bradshaw, C. P., & Cash, A. (2014). Coaching classroom-based preventive interventions. In M. Weist, N. Lever, C. Bradshaw, & J. Owens (Eds.), *Handbook of school mental health* (2nd ed., pp. 255–268). New York, NY: Springer.

Raver, C. C., Jones, S. M., Li-Ging, C., Zhai, F., Metzger, M. W., & Solomon, B. (2009). Targeting children's behavior problems in preschool classrooms: A cluster-randomized controlled trial. *Journal of Consulting and Clinical Psychology*, *77*, 302–316.

Reinke, W. M., Herman, K. C., Darney, D., Pitchford, J., Becker, K., Domitrovich, C., & Ialongo, N. (2012). Using the classroom check-up to support implementation of PATHS to PAX. *Advances in School Mental Health Promotion*, *5*, 220–232.

Reinke, W. M., Lewis-Palmer, T., & Martin, E. (2007). The effect of visual performance feedback on teacher behavior-specific praise. *Behavior Modification*, *31*, 247–263.

Reinke, W.M., Lewis-Palmer, T., & Merrell, K. (2008). The Classroom Check-Up: A classwide consultation model for increasing praise and decreasing disruptive behavior. *School Psychology Review*, *37*, 315–332.

Reinke, W. M., Stormont, M., Herman, K. C., Puri, R., & Goel, N. (2011). Supporting children's mental health in schools: Teacher perceptions of needs, roles, and barriers. *School Psychology Quarterly*, *26*, 1–13.

Riley-Tillman, T. C., & Eckert, T. L. (2001). Generalization programming and school-based consultation: An examination of consultees' generalization of consultation-related skills. *Journal of Educational and Psychological Consultation*, *12*, 217–241.

Rodriguez, B. J., Loman, S. L., & Horner, R. H. (2009). A preliminary analysis of the effects of coaching feedback on teacher implementation fidelity of First Steps to Success. *Behavior Analysis in Practice*, *2*, 11–21.

Roelofs, E., Veenman, S., & Raemaekers, J. (1994). Improving instruction and classroom management behaviour in mixed-age classrooms: Results of two improvement studies. *Educational Studies*, *20*, 105–126.

Sanetti, L. M. H., Kratochwill, T. R., & Long, A. C. J. (2013). Applying adult behavior change theory to support mediator-based intervention implementation. *School Psychology Quarterly*, *28*, 47–62. doi:10.1037/spq0000007

Showers, B. (1984). *Peer coaching: A strategy for facilitating transfer of training*. Eugene, OR: Center for Educational Policy and Management.

Showers, B., Joyce, B., & Bennett, B. (1987). Synthesis of research on staff development: A framework for future study and a state of the art analysis. *Educational Leadership*, *45*, 77–87.

Smith, S. C., Lewis, T. J., & Stormont, M. (2011). An investigation of the use of two universal behavioral supports for children with externalizing behavior in Head Start classrooms. *Journal of Positive Behavior Interventions*, *13*, 133–143.

Solomon, B. G., Klein, S. A., & Politylo, B. C. (2012). The effect of performance feedback on teachers' treatment integrity: A meta-analysis of the single-case literature. *School Psychology Review*, *41*, 160–175.

Stormont, M., Smith, S. C., & Lewis, T. J. (2007). Teacher implementation of precorrection and praise statements in head start classrooms as a component of a program-wide system of positive behavioral support. *Journal of Behavioral Education*, *16*, 280–290.

Sutherland, K. S., Wehby, J. H., & Copeland, S. R. (2000). Effects of varying rates of behavior specific praise on the on-task behavior of students with EBD. *Journal of Emotional and Behavioral Disorders*, *8*, 2–8.