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The Effectiveness of Interventions to Increase Parent Involvement
in Special Education: A Systematic Literature Review and Meta-Analysis

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Abstract

Although parent involvement is required by special education law and is important for all students, the literature synthesizing studies on parent involvement has focused on the general education parent population, often without addressing students with disabilities. The purpose of this review was to descriptively synthesize the literature on parent training interventions to increase parent involvement for parents of school-age students with disabilities and to evaluate the effects of this intervention using meta-analysis. The literature on parent involvement interventions was minimal, with few recent peer-reviewed studies; all included studies focused on parent involvement in the context of Individualized Education Program (IEP) meetings. Results of the random effects model were not significant, with a weighted mean effect size of 0.26 (95% CI [-1.01, 1.53]). Results are discussed in the context of low heterogeneity across studies and implications for future research, including the need for novel interventions to increase parent participation in IEP meetings as well as studies focusing on parent involvement in other contexts for parents of children with disabilities.

Keywords: parent involvement, special education, disabilities, IEP meetings

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Parent involvement in school is both critical and legally mandated for parents of students with disabilities. According to the Individuals with Disabilities Education Act (IDEA, 2004) parents must be members of the Individualized Education Program (IEP) team decision-making process and have opportunities for meaningful, active participation (Fish, 2008). They also must provide consent before a special education evaluation can be initiated. To ensure that parents act as an accountability mechanism, schools must inform parents of their procedural safeguards, which detail ways to actively resolve educational disputes if parents disagree with the school regarding the child's education (Yell, Katsiyanis, Drasgow, & Herbst, 2003).

In addition to this legal mandate for active parent participation to ensure school accountability, parent involvement is important for students of all abilities, both with and without disabilities. Defined by Epstein (2001), six types of parent involvement are recommended, including: (1) collaborating to establish a supportive home environment, (2) communicating between home and school, (3) volunteering in the classroom and school, (4) learning at home using homework, (5) including families as partners in school decisions, and (6) collaborating with the community to build the connection between the school and parents. The six above-mentioned types of parent involvement have been demonstrated to increase student achievement (Sheldon & Epstein, 2005), improve school attendance (Epstein & Sheldon, 2002), decrease behavior problems (Vakalahi, 2001), and decrease drop-out rates (Barnard, 2003).

Much of the literature synthesizing studies about parent involvement has focused on child outcomes, namely academic achievement. In a recent meta-analysis, Nye, Turner, & Schwartz (2006) synthesized results from 18 randomized controlled trials (RCT) to evaluate the

effectiveness of parent involvement in increasing the academic achievement of elementary school students. Parent involvement had a positive and significant effect on children's overall academic performance, especially in the area of reading. Another meta-analysis (Jeynes, 2007) reported a significant, positive relation between parent involvement and the academic achievement of urban secondary school students. These syntheses, along with many others (e.g., Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2005), support the importance of parent involvement as it relates to student achievement for students without disabilities.

Although the need for parent involvement is clear, the construct as it relates to students with disabilities has less often been the focus of research. Within the extant literature, studies about parents of students with disabilities focus on parent involvement in IEP meetings (Burke, 2012), often without considering the other forms of involvement identified by Epstein (2001). Parent involvement in IEP meetings is legally mandated (IDEA, 2004); IEP meetings offer the primary forum to make decisions about a child's eligibility and services that impact the next year of the child's education. Although mandated to occur only once a year, parent involvement and parent-school collaboration in this context are considered vital in establishing effective educational programs (Fish, 2008). Unfortunately, research on parent involvement at IEP meetings shows that, despite the legal mandate, parent participation at IEP meetings is low (Martin et al., 2006).

Other research has addressed the importance of parent involvement through qualitative research methods. For example, Blue-Banning and colleagues (2004) identified six components of collaborative partnerships between families and schools, including: communication, commitment, equality, skills, trust, and respect. These partnerships are focused on reciprocity between families and schools, with mutual demonstration of the six components. Despite the

importance of family-school collaboration and the need to better understand how to overcome barriers to building these relationships (Bacon & Causton-Theoharis, 2013; Jegatheesan, 2009), quantitative evaluations of family-centered interventions to increase parent involvement at school are rare. Although there is evidence for the effectiveness of parent training in increasing parent involvement in home-based early intervention services (Matson, Mahan, & Matson, 2009), quantitative research on parent involvement at school for parents of children with disabilities is lacking.

Understanding the methods for increasing parent involvement both in and out of IEP meetings, specifically for students with disabilities, is particularly important. The ramifications of low involvement and poor parent-school partnerships for this population are especially severe. Poor parent-school partnerships relate to higher rates of due process and mediation to resolve conflicts, which lead to financial and emotional tolls on schools and families (Burke & Goldman, 2015). Further differentiating them from parents of students without disabilities, parents of children with disabilities experience additional stressors (Hauser-Cram, Warfield, Shonkoff, & Krauss, 2001), may have different dynamics in collaborating with the schools (Engel, 1991), and must learn to navigate a highly specialized system (Stoner et al., 2005). Therefore, it is important to evaluate the efficacy of interventions for increasing parent involvement at school specifically for students with disabilities.

In this systematic literature review and meta-analysis of group experimental studies we answered the following research questions: (1) What is the existing body of literature on parent training interventions to increase involvement in school for parents of students with disabilities, and (2) What is the effectiveness of these interventions in increasing parent involvement?

Methods

Eligibility Criteria

We included studies if they met the following criteria: (a) participants included parents of school-aged children with disabilities, ages 3-21, as defined in Part B of IDEA; (b) a parent training intervention was provided; (c) the study used either a group experimental design (i.e., randomized control trial [RCT]) or a quasi-experimental design (QED); (d) the outcome measured was parent involvement with the school; and (e) the intervention group was compared to a control group or business-as-usual group on this outcome. We included only studies conducted in the United States after the creation of the first special education law, the *Education for All Handicapped Children Act* (later renamed IDEA), in 1975.

In order to answer our research question, studies were only included if they were RCTs, which randomly assigned participants to groups, or QEDs (including non-randomized controlled studies, pre-post studies, and interrupted time series designs; Centre for Reviews and Dissemination, 2009). Studies that used qualitative methods or single-case research designs (SCRD) were excluded due to limitations in meta-analytic methods for synthesizing these types of research. Although the necessity of developing an effect size statistic to synthesize the effects of SCRCD is established, effect size statistics that have been proposed for SCRCD studies lack formal statistic development and cannot be used with common meta-analytic tools (Shadish, Hedges, & Pustejovsky, 2014). To date, researchers do not agree on procedures that are considered acceptable for evaluating and synthesizing SCRCD studies (Maggin & Odom, 2014).

Studies that addressed parent involvement only in the community or at home were also excluded from this review. Studies were included only if they assessed intervention effects on at least one outcome variable that represented parent involvement in school. Based on

Epstein's framework (2001), the context of special education, and involvement in the school setting, some of these types of parent involvement included: (a) participation at school events, meetings, or conferences; (b) collaboration through joint planning and decision-making; (c) communication between the parent and school staff via any mode; (d) partnership as evidenced by the parent-professional relationship; and (e) other types of traditional school involvement such as volunteering or attending school functions.

Literature Search

In order to identify studies eligible for inclusion, we conducted a systematic literature search in ProQuest. Our search terms addressed each Centre for Reviews and Dissemination (2009) eligibility criteria and were further refined through an iterative process using pearl growing (i.e., using known eligible studies to improve search terms) to ensure that all related terminology was included. The final search was originally conducted on October 21, 2014 and replicated on March 11, 2015 to ensure the inclusion of any more recently published studies. We used the following terms in our final search: AB ("school age*" OR "school-age*" OR "elementary school" OR elementary-school OR pre-school OR preschool OR "Part B" OR child* OR high-school OR "high school" OR middle-school OR "middle school" OR student*) AND AB (disab* OR "special ed*" OR "special need*" OR "Individual* Education* Program*" OR "IEP" OR "Individual* Education* Plan*") AND AB (parent*) AND (intervention NEAR/4 parent* OR train* NEAR/4 parent* OR program NEAR/4 parent*) AND (experiment* OR evaluat* OR effect* OR RCT OR quasi* OR trial OR random OR control* OR "business as usual") AND ("parent* involvement" OR "parent participation" OR collaborat* NEAR/4 parent* OR partner* NEAR/4 parent*).

Using these search terms, the following fourteen relevant databases were searched in ProQuest: (1) ERIC, (2) International Bibliography of the Social Sciences, (3) PAIS International, (4) ProQuest Education Journals, (5) ProQuest Family Health, (6) ProQuest Psychology Journals, (7) ProQuest Social Science Journals, (8) ProQuest Sociology, (9) ProQuest Dissertations and Theses: UK and Ireland, (10) ProQuest Dissertations and Theses: Full-Text, (11) PsycARTICLES, (12) PsycINFO, (13) Social Services Abstracts, and (14) Sociological Abstracts.

In order to identify grey literature and minimize publication bias, we utilized several search strategies. First, we included two dissertation databases in the ProQuest search. Additionally, we contacted three faculty members involved in research in this content area to identify any unpublished studies and confirm that no eligible published studies had been overlooked in the search. We also conducted hand searches to ensure a comprehensive review. For instance, we hand searched the peer-reviewed journal *Research in the Schools* because we discovered that articles in this journal were not consistently indexed in ProQuest at the abstract level. We also hand searched publications on, for example, *The Incredible Years*, an intervention that we knew to include parent training and measures of parent involvement to identify whether any studies fit our inclusion criteria. Further, we searched the Cochrane and Campbell Collaboration websites for meta-analyses related to parent involvement. Last, we searched the reference lists of all eligible studies and conducted a forward citation search of eligible studies.

Study Selection

After exporting the results of the search into Microsoft Excel, we first screened the citations at the abstract level. Next, we retrieved full-text articles for studies for which additional

information was necessary to determine eligibility. If these studies were excluded, the specific reason for doing so, as it related to our eligibility criteria, was recorded.

Data Collection

Once all included studies were identified, we coded these studies in Microsoft Excel to collect information on study characteristics relevant to the research question. This included coding variables at the study level, participant level, group level, outcome level, and effect size level (see Table 1 for a complete list of variables and operational definitions). All included studies were independently coded by both authors in order to assess reliability. Any discrepancies were reviewed and we reached consensus on a final code for tables and analyses.

Per Lipsey and Wilson (2001), for studies that measured more than one parent involvement outcome, the one that most closely matched other studies' measurement of the outcome and best fit our definition was included in the meta-analysis. If studies compared the parent training intervention to another intervention type, in addition to a control group, only the control group and parent training intervention group post-intervention means and standard deviations were used to calculate effect sizes. In addition, if studies were missing information that was needed to code at any level (e.g., standard deviations), we e-mailed the authors to request the missing information when possible.

Effect Size Measures

We used a standardized mean difference effect size, transformed with a Hedges' g correction, to make results comparable across studies and measure the effectiveness of parent training interventions in increasing parent involvement. The Hedges' g effect size uses a correction to adjust for small sample bias and is an appropriate effect size when studies use different measures to represent the same underlying construct (Borenstein, Hedges, Higgins, &

Rothstein, 2009). One Hedges' g effect size was calculated for each study and used in the meta-analysis to determine the average effect size across studies.

Analytic Strategies

We used a random effects model to calculate the mean of the distribution of true effects of parent training on increasing parent involvement for parents of students with disabilities. The use of a random effects model with inverse variance weights allows generalization to a larger population of studies and assumes some variability in effect size parameters across studies (Borenstein, Hedges, Higgins, & Rothstein, 2010). The summary effect size was calculated with a 95% confidence interval to test the null hypothesis of no effect. The summary effect size, along with each individual study's effect size, was then graphed in a forest plot to visually depict the effect size, weighting, and confidence interval.

Heterogeneity statistics. In order to explain variation in the summary effect size, we completed several analyses. First, we visually analyzed the forest plot sorted by effect size to informally examine heterogeneity. Next, three statistics were used in combination to statistically quantify heterogeneity: Q , I^2 , and τ^2 . With a fixed effect model, the Q statistic uses a χ^2 distribution to test the null hypothesis of homogeneity and determine whether there is evidence of heterogeneity in the true effect size. The I^2 measures the percent of variability in effect sizes that is due to true heterogeneity, not sampling error. Finally, the τ^2 provides an estimate of the variability of the true effect sizes around the mean of the distribution (Borenstein, Hedges, Higgins, & Rothstein, 2009).

Sensitivity analysis and publication bias. We planned to use the type of design (i.e., RCT vs. QED) as a quality indicator to be evaluated using a moderator analysis. To statistically test the presence and impact of publication bias, several additional methods were planned,

including: (a) visual analysis of funnel plot, (b) regression test for funnel plot asymmetry, and (c) Trim and Fill. A funnel plot looks for the presence of small study bias by evaluating whether negative or null findings have been suppressed (i.e., asymmetric funnel plot). Next, the Egger Test, a regression for funnel plot asymmetry, was planned to test the null hypothesis of symmetry. Trim and Fill indicates how much of an effect potential publication bias may have by comparing the number of studies before and after the trim and fill, and evaluating changes in magnitude and significance of the mean effect size. In combination, these methods and their results were planned to assess the possibility of publication bias (Rothstein, 2008).

Results

Study Selection

The process of identifying studies through the systematic review process is depicted in Figure 1. We identified an initial 2,108 records through the ProQuest search and screened these at the abstract level along with 417 additional records identified through other sources (e.g., hand searching). During the abstract screening, 2,467 records were excluded, leaving 27 studies to be screened for eligibility criteria using full-text. No additional studies were found that needed to be screened at the full-text level during the second search in March 2015. During full-text screening, an additional 19 articles were excluded due to not meeting one of the following inclusion criteria: (a) population, (b) outcome, or (c) study design (see Figure 1). This resulted in a total of eight studies that met all inclusion criteria and could be included in a descriptive synthesis. They represented six independent study samples, as two of the dissertations were also published articles. Because three studies were missing required statistics for computing effect sizes, a total of five studies were included in the meta-analysis. These five studies represented

four independent study samples for the meta-analysis, as one study was both a dissertation and peer-reviewed publication.

Description of Studies

The earliest study, a dissertation by Goldstein (1980), was also included in the results of our systematic review as a published, peer-reviewed article (Goldstein & Turnbull, 1982). In this study, 45 parents of children with learning disabilities were randomly assigned to a control group, training group, or advocate group. Parents in the training group were given questions approximately one week before the IEP conference to help them prepare information regarding: the child's achievement, learning style, and the parent's preferred goals for the child. The special education teacher followed up with these parents to remind them to look at the questions before the meeting and to clarify their purpose. To measure parent involvement, observational data were collected during the IEP conference on the person speaking on a given topic every 30s. In the week following the IEP conference, parents completed a questionnaire regarding their perceptions of participation and satisfaction with the IEP. Results did not show significant differences in parent involvement between the parent training group and the control group (statistics regarding the non-differences were not provided). However, compared to parents in the control group, parents who attended a conference with an advocate made significantly more contributions, $t(28) = 2.12, p < .025$. There were no significant differences between groups with respect to satisfaction or perceptions of participation.

In a dissertation by Jones (2006), later published in a peer-reviewed journal, Jones and Gansle (2010) evaluated the effectiveness of a "mini-conference" on increasing parent involvement during the IEP meeting. Parents of students with disabilities were randomly assigned to this mini-conference ($n = 20$) or a control group ($n = 21$). Parents in the mini-

conference condition met with teachers during the week before the scheduled IEP meeting to: (a) discuss what would occur during the IEP meeting; (b) provide explicit instruction for asking questions; (c) model how to ask questions about the IEP; and (d) practice asking questions with feedback from the teacher. The dependent variable, parent participation, was measured using direct observation and calculated as the rate of parent comments per minute. Parent comfort with the meeting and perceptions of involvement were also measured using a self-report survey. Teacher and administrator perceptions of parent involvement were measured using a parallel survey instrument. Jones and Gansle did not find any significant differences in the number of parent comments per minute between the mini-conference and control group, parent comfort and perceptions of involvement, or administrator perceptions of parent involvement. Teachers in the mini-conference condition (versus control condition) rated parent participation significantly higher, $\chi^2 = 14.1$, $p < .001$.

In another dissertation, Blietz (1988) compared the effect of a structured 1:1 parent training with an information packet to indirect training (i.e., only information packet) and a no training control condition. Participants included parents of 45 children with identified disabilities, who were randomly assigned to one of these three groups. The parent training information packet contained information on: (a) focus on parents as part of educational team, (b) parent rights, (c) overview of the special education process, (d) conference participants, (e) conference preparation, (f) goal setting, (g) questions that should be asked, (h) due process, (i) special education services, and (j) forms. Participants in the 1:1 parent training group attended a 1-hr training session one to three days prior to the IEP conference. Direct observational data on frequency of parent participation were collected during the IEP conference and a questionnaire

was used to measure parents' understanding of and satisfaction with the conference. No significant differences were found between any of the groups on these three dependent variables.

Similarly, Brinckerhoff and Vincent (1986) randomly assigned parents of students with disabilities to a parent training ($n = 7$) or control group ($n = 7$). Parents in the training group received two handouts regarding: (a) the child's home activities and levels of assistance needed (Daily Routine; Vincent et al., 1983b); and (b) identifying target areas of need (Parent Inventory of Child Development in Non-school Environments; Vincent et al., 1983a). Parents also met with the school/community liaison to discuss the purpose of the IEP, IEP meeting participants and their roles, and how the information from the handouts would fit into the IEP. IEP meetings were then coded at 20-s intervals for parent contributions, parent decisions, and parent generated goals. In addition, school staff behaviors were coded (e.g., staff contributions on instructional methods, home programming suggestions, staff decisions, and joint decisions) along with parent and teacher perceptions of parent participation. Compared to parents in the control group, the mean percentage of parent contributions was significantly higher for parents who attended the training ($p < .05$). In addition, compared to the control group, the mean percentage of parent decisions and parent-generated goals were also significantly higher among parents who received training ($p < .01$; no additional statistical results or descriptive information were available in the publication or through request). Although staff contributions on instructional methods did not differ significantly between the intervention and control group, teachers made more suggestions about home programming, and made more joint decisions in meetings with parents who were in the intervention condition (all p 's $< .01$). There were no significant differences in parents' perceptions of participation and satisfaction, although teachers perceived parents in the training group as making more contributions ($p < .05$).

Hirsh (2004) also utilized an informational handout and 1:1 training, specifically for parents of children being evaluated for special education services under the category of a specific learning disability (SLD). Parents of 45 children who were being evaluated for an SLD were randomly assigned to a training, attention, or business-as-usual condition. Parents in the training condition received an SLD informational packet which included: (a) symptom and prognosis sheet; (b) parent rights regarding classification; (c) question prompt sheet and eligibility checklist; (d) information about being a member of a multi-disciplinary team; and (e) IEP guide and checklist. This information was reviewed with the researcher prior to the meeting. The attention group received an unrelated informational handout about developmental milestones that was also reviewed before the meeting, and the control group did not receive any additional information. Dependent variables included the quantity and quality of parent involvement during initial eligibility meetings (measured via direct observation), parent perceptions of satisfaction, parent special education law knowledge, and general education teacher perceptions of parent participation (measured via questionnaires). Compared to the attention and control condition, parents in the 1:1 training group displayed significantly higher participation during the meeting, $\eta^2 = .24, p = .004$. Parents in the training group also self-reported higher amounts of participation ($\eta^2 = .34, p < .001$) and demonstrated significantly higher levels of post-training knowledge, $F(2, 46) = 13.98, p < .01$. In addition, parents in the training condition reported higher levels of satisfaction than those in the attention condition, but not the control condition, $F(2, 46) = 3.90, p = .03$.

Plunge (1998) used a video training to teach parents about their legal rights, the special education process, communication with school professionals, and IEP development. Parents of children with disabilities were randomly assigned to this video training condition ($n = 21$) or a

control condition ($n = 23$). Parents in the control group were given a verbal description of a legal rights handout and told they could contact the school psychologist with questions. Parents in the training group received a verbal explanation of the legal rights handout and watched the training video directly prior to the IEP meeting. Using surveys and direct observation, Plunge measured parent verbal contributions at the IEP meeting, parent satisfaction, parent self-efficacy, and parent knowledge of special education law. Following the intervention, there were no significant differences in the number of parent-initiated verbal contributions or parent ratings of satisfaction between the treatment and the control group. However, compared to parents in the control group, parents in the treatment group scored higher on a knowledge survey ($t(42) = -3.62, p = .001$) and reported higher levels of self-efficacy, $t(42) = -2.46, p = .009$.

Synthesis of Studies

Publication years ranged from 1980 to 2010 and all studies randomly assigned participants to groups. In addition to comparing treatment groups to control conditions, four studies also included an additional treatment comparison group (i.e., attention group, indirect training group, and advocate group). Sample sizes ranged from 7 to 23 parents per group, for a total of 189 participants in the control or treatment groups that met the inclusion criteria. See Table 2 for characteristics of each study.

Participant characteristics. Four study samples reported child mean age, which averaged 8.1 years across these studies. Overall, children of participants in the eight studies were in pre-school through high school grades. Studies included mixed diagnoses; however, three studies included only parents of children with learning disabilities (Goldstein, 1980; Goldstein & Turnbull, 1982; Hirsh, 2004).

General parent participant characteristics were reported in four of the study samples. For these studies, 58%-84% of participants were mothers; Brinckerhoff and Vincent (1986) reported the highest percentage of mother-father dyad participants (71%). Adult participant samples were somewhat diverse in terms of education, socio-economic status (SES), and race. Across studies, between 23%-71% of participants reported having completed high school or less. Studies measured SES in a range of ways, including eligibility for free/reduced lunch (Jones, 2006; Jones & Gansle, 2010), income levels (e.g., less than \$35,000 annual household income; Plunge, 1998), and number of parents in the household (Brinckerhoff & Vincent, 1986; Hirsch, 2004; Plunge, 1998). Only two studies reported the adult participant's race (Brinckerhoff & Vincent, 1986; Hirsch, 2004); both had high percentages of White participants (83% and 72%, respectively).

Treatment. The form of parent training included: video training (Plunge, 1998), handouts sent home with a follow-up phone call (Goldstein, 1980; Goldstein & Turnbull, 1982), and 1:1 parent training meetings with related training packets (Brinckerhoff & Vincent, 1986; Blietz, 1988; Hirsh, 2004; Jones, 2006; Jones & Gansle, 2010). All trainings included some variation of content on special education law, parents' rights at the IEP meeting, IEP team member roles, and how to participate at an IEP meeting (see Table 3 for a summary of parent training characteristics). The type of instruction varied widely, with all interventions including some type of verbal explanation, and other forms of instruction (e.g., modeling, guided practice) used less consistently across studies. When reported, trainings ranged in length from 20-min (Jones, 2006; Jones & Gansle, 2010) to 60-min (Blietz, 1988), although many studies did not specify the length of the training. All occurred within one week prior to the IEP meeting, with only one study specifying that the training occurred immediately before the meeting itself

(Plunge, 1998). Trainings were conducted by a range of personnel including special education teachers, family/school liasons, and researchers. Fidelity of treatment implementation was only measured in one study sample (Jones, 2006; Jones & Gansle, 2010).

Outcome. Although all studies measured parent participation in IEP meetings, the unit of measurement varied widely across studies. Outcomes included frequency counts of parent comments (Blietz, 1988; Goldstein, 1980; Goldstein & Turnbull, 1982; Plunge, 1998), rates of parent comments (Jones, 2006; Jones & Gansle, 2010), duration of parent contributions (Hirsh, 2004) and mean percentage of intervals with parent contributions (Brinckerhoff & Vincent, 1986). Some IEP meetings were recorded and audio-tapes were later used for data analysis (Plunge, 1998; Hirsh, 2004). In other studies, researchers were present at the meeting to record data (Brinckerhoff & Vincent, 1986; Goldstein, 1980; Goldstein & Turnbull, 1982; Jones, 2006; Jones & Gansle, 2010) or IEP team members collected data without the presence of a researcher (Blietz, 1988). The collection of inter-observer agreement (IOA) data was reported for five study samples. Of these studies, agreement was in an acceptable range (i.e., >80%), but was collected in less than 25% of meetings (or percentage of meetings in which IOA was collected was not reported) in three study samples.

In addition to direct observation of parent participation on IEP meetings (i.e., the dependent variable that was measured in all included studies), authors also included parent, teacher, and administrator reports of parent participation, satisfaction, comfort, self-efficacy, and knowledge (see Table 4). Other than direct observation of parent participation, the next most frequently included outcomes were parent report of participation ($n = 5$), and parent self-report of satisfaction with the IEP meeting ($n = 5$).

Meta-Analysis Results

The four samples used in the meta-analysis to determine the effectiveness of parent training had a random effects weighted mean effect size of $g = 0.256$ (95% CI [-1.013, 1.526]; see Figure 2). This non-significant finding indicates no evidence of an effect for parent training in increasing or decreasing parent involvement at school for parents of students with disabilities. Heterogeneity statistics indicated a non-significant amount of heterogeneity between studies, $Q = 0.37$, $p = .95$, supported by, a τ^2 of 0.0 and an I^2 of 0% indicating that none of the variance was true heterogeneity that could be explained by moderators.

Additional Analysis

An insufficient number of studies were identified in this meta-analysis to statistically measure the possibility of publication bias using visual analysis of a funnel plot, an Eggers test, or Trim and Fill. In addition, we did not conduct sensitivity analyses for several reasons. First, the a priori decision to look for differences between the results of QEDs compared to RCTs was not necessary because all studies included in the meta-analysis were RCTs. In addition, no outliers were identified that could have impacted the null effect. As a result, although we planned publication bias and sensitivity analyses, neither were conducted due to the small number of homogeneous studies ($k = 4$) included in this meta-analysis.

Discussion

In summary, this systematic review identified eight studies, with six independent study samples, that quantitatively evaluated the effectiveness of parent training on increasing parent involvement of parents of students with disabilities in school. This review has three main findings that relate to the study design, context, and participants.

First, parent involvement interventions that use a rigorous, quantitative group design (i.e., RCT or QED) were rare. The included five dissertations and three peer-reviewed studies were

published over a range of 30 years, beginning soon after the introduction of special education law in 1975. In comparison, in the meta-analysis of parent involvement interventions among students without disabilities, Nye and colleagues (2006) included eighteen studies which were published between 1964 and 2000. Furthermore, with respect to students with disabilities, parent involvement intervention research that uses RCT or QED designs does not seem to be expanding, with only two independent studies identified for inclusion in the last 10 years. Although students with disabilities comprise a smaller segment of the student population, it is notable that such few group experimental studies have examined parent involvement and met the inclusion criteria for this meta-analysis. This is especially problematic given that, unlike students without disabilities, parents of students with disabilities are accorded rights by IDEA to collaborate with the school and participate in the special education process.

Second, results of the random effects meta-analysis did not provide evidence for the effectiveness of parent trainings in increasing parent involvement in school for parents of students with disabilities. Heterogeneity statistics indicated that additional explanations of variation in the summary effect size were not needed. However, all included studies focused on parent participation during IEP meetings. Although an important context for research (Blackwell & Rossetti, 2014), the results of this meta-analysis highlight the need for additional group quantitative studies on parent involvement for parents of students with disabilities that better align with the expectations of parent involvement for students without disabilities. Beyond IEP meetings, parents of students with disabilities may also benefit from opportunities to increase their partnership with the school through other contexts such as observations and volunteering in the wider school community and bi-directional communication between home and school (Turnbull & Turnbull, 2002). These types of involvement more closely mirror parent

involvement among parents of students without disabilities (Epstein, 2001). Epstein's definition of parent involvement can and should apply to parents of children with disabilities. Additional experimental research is necessary to identify which types of involvement (including involvement outside of the IEP meeting context) are beneficial for students with disabilities and how parent involvement leads to positive outcomes.

Third, with respect to child characteristics, most of the studies in this review examined parent involvement for parents of students with a wide range of disabilities and ages; studies that did target a specific diagnosis focused on students with learning disabilities. However, parent involvement for children with significant disabilities may differ compared to parents of children with high-incidence disabilities. For example, an intervention to increase parent-teacher communication for a minimally verbal student with an intellectual disability is likely to differ in form and effectiveness compared to a parent involvement intervention for a child with a learning disability (Starr, Foy, Cramer, & Singh, 2006). Further, types and opportunities for parent involvement likely differ for young children, whose services are more family-centered, compared to older, high-school aged students (Dunst, 2002); such differences have been examined for students without disabilities (Hill & Tyson, 2009), but not expanded to students with disabilities.

With respect to adult characteristics, the participants in included studies represented little diversity and studies did not consider differences in parent involvement for specific subsets of participants. For example, the studies synthesized in this review either did not report on key characteristics (e.g., parent race and income level), or did not represent a diverse sample. Prior research in both the special education (Harry & Kalyanpur, 1994; Jung, 2011; Trainor, 2010) and general education literature (Desimone, 1999; Hickman, Greenwood, & Miller, 1995; Jeynes,

2003) has shown that parents' experiences with school involvement often differ for families from diverse racial, ethnic, and socioeconomic backgrounds. For example, parents from diverse backgrounds may have different advocacy expectations and dissimilar opportunities across demographic lines. Parents from low socio-economic or minority backgrounds often experience additional challenges in negotiating the special education system (Kalyanpur, Harry, & Skrtic, 2000). Also, schools may have deficit views of diverse families (Harry, 2008). Studies synthesized in this review did not address these issues related to parent characteristics.

Implications for Research and Practice

This systematic literature review and meta-analysis has several implications for future research and practice. First, the lack of evidence of an effect, with little to no explainable heterogeneity, indicates that the field needs to think about parent involvement interventions for parents of students with disabilities in different ways. Although parents should be key members of an IEP team, parents experience many barriers to participation (Burke, 2012). Solely focusing training on parent knowledge and ability may be insufficient in increasing parental participation and advocacy. Broader interventions that address not only parents, but also the behavior of other IEP team members (i.e., school personnel) should be studied. For example, a clear power differential between the school and parent has been demonstrated in past research (Leiter & Krauss, 2004). In addition, parents may be afraid of jeopardizing their and their child's relationship with the teacher and school (Engel, 1991) by being actively involved and expressing their opinions, especially if the parent's perspective conflicts with the rest of the IEP team. An increase in parent advocacy and participation is dependent on the behaviors of school staff in addition to the knowledge and skills of parents themselves. Additional consideration must be given to the roles of schools in creating collaborative and supportive contexts for parent

involvement. Without altering the dynamic of IEP meetings more broadly, requiring change by all team members, parent participation seems unlikely to increase based on a brief intervention that only targets parent behavior.

Beyond interventions focused around involvement in the context of IEP meetings, the lack of quantitative, group research conducted in this area demonstrates the need for researchers to consider parent involvement of parents of children with disabilities more broadly. Thus, researchers and practitioners should consider developing and using interventions that go beyond the scope of parent involvement in IEP meetings. Future research should also include participants who are more diverse in terms of race, income, and role. Fathers, in particular, are rarely included in research on parent involvement in school. Although many fathers report being involved in caretaking and participating in major meetings for their children with disabilities (Bennett, Lee, & Lueke, 1998), the intervention studies reviewed in this meta-analysis included few father participants or mother-father dyads. Both practitioners and researchers should try to better engage both fathers and other untraditional caretakers and consider the different dynamics of parent involvement when only mothers are involved (Johnson & Simpson, 2013).

Another implication relates to the intervention itself. When training length was reported, it ranged in duration from 20 to 60-min. Given the non-significant findings, it may be that trainings need to be of longer durations in order to demonstrate an effect upon parent involvement. Although different than parent involvement, agencies have recently begun parent advocacy trainings to educate and empower individuals to advocate for children with disabilities in IEP meetings. Such trainings range in duration from 36 hours to 230 hours of instruction (Burke, 2013). Researchers and practitioners who create parent involvement interventions may refer to effective parent advocacy trainings regarding the length and content of the training.

Limitations

This study has a few limitations at the primary study level and the meta-analysis level that may have impacted results. First, two studies were missing data that were needed in order to calculate effect sizes and include them in the meta-analysis. Even after contacting the authors, we were unable to obtain the missing data. Given the homogeneity of the sample and results of the excluded studies individually, it seems unlikely that the inclusion of these two studies would have changed the results of the meta-analysis. However, the resulting small number of included study samples ($n = 4$) is a limitation of this meta-analysis. Although this meta-analysis is based on a small sample, this quantitative synthesis draws attention to the lack of existing information about the effectiveness of parent training in increasing parent involvement in school, and the need for more research (Valentine, Pigott, & Rothstein, 2010). Even when considering the low power to detect an effect, the results of this meta-analysis can still be used to cautiously suggest a need for future research based on our null finding.

An additional limitation relates to the range of interventions and outcomes measured across these studies. Although we specified clear inclusion criteria to answer our research question, interventions varied in intensity, method of training, trainer, setting, and latency between training time and the actual IEP meeting. Outcomes also varied in measurement type and data collector. We tried to minimize such variability by carefully selecting and defining inclusion criteria, but all of these variable factors may have influenced our findings, though it is unlikely due to the low levels of heterogeneity between studies. The use of such specific inclusion criteria, although important for interpretation of the results of the meta-analysis, may be too narrow from a methodological and conceptual perspective. Given that most studies about

parent involvement and family-school partnerships use qualitative methods (Burke, 2012), the results of this review must be considered with caution as qualitative studies were excluded.

In conclusion, although this systematic literature review did not identify a significant effect for parent trainings in increasing parent participation for parents of students with disabilities, it still has important implications for research and practice. First, these results do not imply that schools should stop encouraging increased parent participation during IEP meetings. Parent involvement is important for student achievement and is legally mandated. Schools need to find new ways to increase parent involvement. But beyond this, schools and researchers should also emphasize the importance of parent involvement via other activities. With additional experimental research that moves beyond the context of the IEP meeting, we can begin to understand how parent involvement affects student outcomes.

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Table 1

Operational Definitions for Study Coding

Variable	Operational Definition
Study level	
Authors	All author's names
Publication date	Year of publication
Publication type	Type of publication (e.g., peer-reviewed, dissertation/thesis)
Geographical setting	Region of the United States (specific state if reported)
Research design	Type of design (i.e., how participants were assigned to groups)
Participant variables	
Child age	Mean age of children in years
Child grade	Grade range of children from preschool through high school
Child disability	Special Education eligibility category or diagnosis
Parent race	Percentage of sample identified as White
Parent role	Percentage of sample identified as mothers
Parent dyad	Percentage with both mother and father participating
Parent age	Mean participant age and age range in years
Parent education	Percentage of parents with a highest level of education of high school completion or less
Parent income	Percentage of sample with reported low income
Marital Status	Percentage of participants in a single parent household (e.g., unmarried, divorced)
Group level	
Training type	Description of the intervention provided
Training content	Summary of the topics covered in the training
Training implementer	Person who provided training
Training length	Length of training provided, in minutes
Training setting	Setting in which parent training was provided
Training time	When training was provided, in relation to measurement of outcome
Treatment fidelity	Degree to which training was implemented as intended
Outcome level	
Construct	Type of parent involvement (e.g., participation, communication)
Measurement type	Method of measuring outcome (e.g., rate, frequency)
Data collector	Person who collected data on outcome
Context	Setting for parent involvement (e.g., conferences, homework)
Mode	Method of data collection (e.g., live observation, recording)
IOA	Percentage of sessions in which data were collected, and mean percentage of inter-observer agreement (IOA) on outcome
Effect size level	
Sample size	Number of participants who completed the study, or who were included in analyses, if using intent-to-treat
Mean	Post-intervention average for parent involvement outcome
Standard deviation	Post-intervention standard deviation for outcome

Table 2

Study Characteristics

Author (pub. year)	Publication type	Design	Comparison groups	Sample size	Participant characteristics	Intervention	Outcome
Blietz (1988)	Dissertation	RCT	Direct training*, indirect training, BAU	tx n= 15 ct n= 15	<i>Parent Characteristics</i> <i>Race</i> : NR <i>Role</i> : NR <i>Parent dyad</i> : NR <i>Age (range)</i> : NR <i>Education</i> : NR <i>Household income</i> : NR <i>Marital status</i> : NR <i>Child Characteristics</i> <i>Age</i> : NR <i>Grade range</i> : NR <i>Disability</i> : Mixed	<i>Type</i> : Structured 1:1 training with IEP training packet <i>Content</i> : Packet on parent rights and special ed process, IEP team and roles, and prep for conference participation <i>Length</i> : 60 min <i>Setting</i> : School <i>Time</i> : 1-3 days before IEP meeting <i>Implementer</i> : Trainer <i>Tx fidelity</i> : NR	<i>Construct</i> : Parent participation <i>Measurement</i> : Number of parent initiated comments <i>Data collector</i> : School employee <i>Data collection</i> : Live observation <i>Setting</i> : IEP meeting <i>IOA</i> : NR
Brinkerhoff & Vincent (1986)	Journal article	RCT	Training, Attention	tx n= 7 ct n= 7	<i>Parent Characteristics</i> <i>Race</i> : 83% White <i>Role</i> : 58% mothers <i>Parent dyad</i> : 71% <i>Age (range)</i> : 28 years (20-44) <i>Education</i> : 71% HS grad or less <i>Household income</i> : NR <i>Marital status</i> : 29% single parent <i>Child Characteristics</i> <i>Age</i> : 4.3 years <i>Grade range</i> : Early childhood <i>Disability</i> : Mixed	<i>Type</i> : Handout + 1:1 training <i>Content</i> : How to participate in IEP meeting and prioritize content for participation using handouts <i>Length</i> : NR <i>Setting</i> : NR <i>Time</i> : Prior to IEP meeting <i>Implementer</i> : School/ Parent Liason <i>Tx fidelity</i> : NR	<i>Construct</i> : Parent participation <i>Measurement</i> : % of intervals with parent speaking <i>Data collector</i> : Researcher <i>Data collection</i> : Live observation <i>Setting</i> : IEP meeting <i>IOA</i> : range 90-95% agreement
Goldstein (1980)	Dissertation	RCT	Training*, Advocate, BAU	tx n= 15 ct n=15	<i>Parent Characteristics</i> <i>Race</i> : NR <i>Role</i> : NR <i>Parent dyad</i> : NR	<i>Type</i> : IEP handout sent home and follow-up phone call <i>Content</i> : List of pre-	<i>Construct</i> : Parent participation <i>Measurement</i> : Number of relevant
Goldstein &	Journal						

Turnbull (1982)	article				<p><i>Age (range):</i> NR <i>Education:</i> NR <i>Household income:</i> NR <i>Marital status:</i> NR</p> <p><i>Child Characteristics</i> <i>Age:</i> Not reported <i>Grade range:</i> 1-5 <i>Disability:</i> LD</p>	<p>conference questions about child needs, goals, and IEP development <i>Length:</i> NR <i>Setting:</i> Phone <i>Time:</i> ~1 week prior to IEP meeting, followed by phone call a few days later <i>Implementer:</i> Teacher <i>Tx fidelity:</i> NR</p>	<p>parent contributions <i>Data collector:</i> Researcher <i>Data collection:</i> Live observation <i>Setting:</i> IEP meeting <i>IOA:</i> 93% agreement, collected in <25% of meetings</p>
Hirsh (2004)	Dissertation	RCT	Training*, Attention, BAU	<p>tx n= 15 ct n= 15</p>	<p><i>Parent Characteristics</i> <i>Race:</i> 72% White <i>Role:</i> 78% mothers Parent dyad: 0% <i>Age (range):</i> NR (18-46+) <i>Education:</i> 30% HS grad or less <i>Household income:</i> 61% <\$40,000 <i>Marital status:</i> 33% single parent</p> <p><i>Child Characteristics</i> <i>Age:</i> 9.3 years <i>Grade range:</i> K-7 <i>Disability:</i> LD</p>	<p><i>Type:</i> Informational handout on LD and 1:1 training <i>Content:</i> Disability information packet, meeting checklist, and IEP guide, including tips on being an effective team member <i>Length:</i> NR <i>Setting:</i> On phone or in person at school <i>Time:</i> Prior to meeting <i>Implementer:</i> Researcher <i>Tx fidelity:</i> NR</p>	<p><i>Construct:</i> Parent participation <i>Measurement:</i> Duration of active parent vocalizations <i>Data collector:</i> Researcher <i>Data collection:</i> From recording <i>Setting:</i> IEP/ Eligibility meeting <i>IOA:</i> 87% agreement, collected in <25% of meetings</p>
Jones (2006)	Dissertation	RCT	Mini-conference, BAU	<p>tx n= 20 ct n= 21</p>	<p><i>Parent Characteristics</i> <i>Race:</i> NR <i>Role:</i> 84% mothers Parent dyad: 20% <i>Age (range):</i> NR <i>Education:</i> 59% HS grad or less <i>Household income:</i> NR; 37% eligible for free/reduced lunch <i>Marital status:</i> NR</p> <p><i>Child Characteristics</i> <i>Age:</i> 10.4 years <i>Grade range:</i> elementary- HS <i>Disability:</i> Mixed</p>	<p><i>Type:</i> Pre-meeting teacher conference <i>Content:</i> Review child progress, IEP terminology, rationale for participation, and guided practice in asking questions <i>Length:</i> 20-30 min <i>Setting:</i> School <i>Time:</i> 1 week to 1 day before IEP meeting <i>Implementer:</i> Teacher <i>Tx fidelity:</i> 100% in 100% of training sessions</p>	<p><i>Construct:</i> Parent participation <i>Measurement:</i> Frequency of parent comments per minute <i>Data collector:</i> Researcher <i>Data collection:</i> Live observation <i>Setting:</i> IEP meeting <i>IOA:</i> 97% agreement, collected in 25% of meetings</p>
Jones & Gansle (2010)	Journal article						

Plunge (1998)	Dissertation	RCT	Video training, Attention	tx n= 21 ct n= 23	<i>Parent Characteristics</i> <i>Race:</i> NR <i>Role:</i> 73% mothers <i>Parent dyad:</i> 0% <i>Age (range):</i> 37 years (27-62) <i>Education:</i> 23% HS grad or less <i>Household income:</i> 30% <\$35,000 <i>Marital status:</i> 18% single parent <i>Child Characteristics</i> <i>Age:</i> 8.5 years <i>Grade range:</i> 1-6 <i>Disability:</i> Mixed (82% LD)	<i>Type:</i> Verbal explanation of handout and video training <i>Content:</i> Parent's legal rights, special education process, and communication strategies <i>Length:</i> 40 min <i>Setting:</i> School <i>Time:</i> Directly before IEP meeting <i>Implementer:</i> NR <i>Tx fidelity:</i> NR	<i>Construct:</i> Parent participation <i>Measurement:</i> Number of parent initiated verbal contributions <i>Data collector:</i> Teacher <i>Data collection:</i> From recording <i>Setting:</i> IEP meeting <i>IOA:</i> 92% agreement, collected in 100% of meetings
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Note: RCT = randomized controlled trial, tx = treatment group, ct = control group. NR = not reported. HS = high school. LD = learning disability. * indicates treatment group used for effect size calculation when multiple treatment groups in study.

Table 3

Parent Training Across Studies

	Type			Setting		Trainer			Content					Instruction					
	1:1 training	Informational packet	Video training	Phone	School	Trainer/ researcher	School liason	Teacher	Parent rights	Educational team	IEP guide	Goal planning	Participation	SPED Process	Verbal explanation	Modeling	Guided practice	Checklist/ form	Examples
Blietz (1988)	X	X			X	X			X	X	X	X	X	X	X				X
Brinckerhoff & Vincent (1986)	X	X					X			X	X	X	X		X			X	
Goldstein (1980) ¹		X		X				X			X				X			X	
Hirsh (2004)	X	X		X	X	X			X	X	X		X	X	X			X	X
Jones (2006) ²	X				X			X		X	X	X		X	X	X			
Plunge (1998)		X	X						X	X		X	X	X	X				

¹This is the same study sample as Goldstein & Turnbull (1982). ²This is the same study sample as Jones & Gansle (2010).

Table 4

Parent Outcomes Measured Across Studies

	IEP Meeting Participation				Satisfaction		Comfort	Self- efficacy	Knowledge
	Direct observation	Parent- report	Teacher- report	Admin- report	Parent- report	Teacher- report	Parent- report	Parent- report	Questionnaire
Blietz (1988)	X				X				X
Brinckerhoff & Vincent (1986)	X*	X	X		X	X*			
Goldstein (1980) ¹	X	X			X				
Hirsh (2004)	X*	X*	X		X				X*
Jones (2006) ²	X	X	X*	X			X		
Plunge (1998)	X				X			X*	X*

Note. * = statistically significant difference between control and treatment group at $p < .05$.

¹This is the same study sample as Goldstein & Turnbull (1982). ²This is the same study sample as Jones & Gansle (2010).

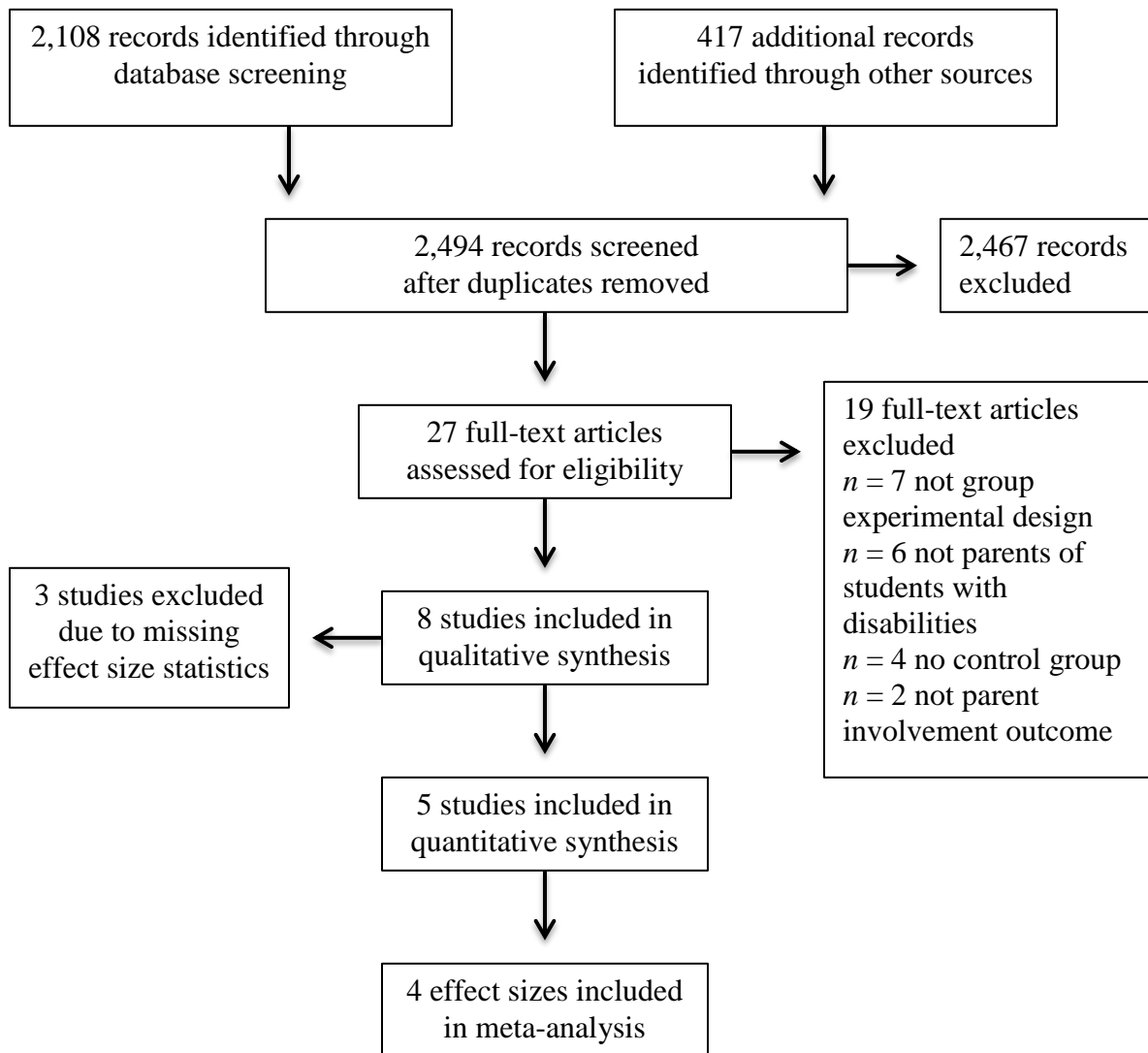


Figure 1. Study selection PRISMA flowchart.

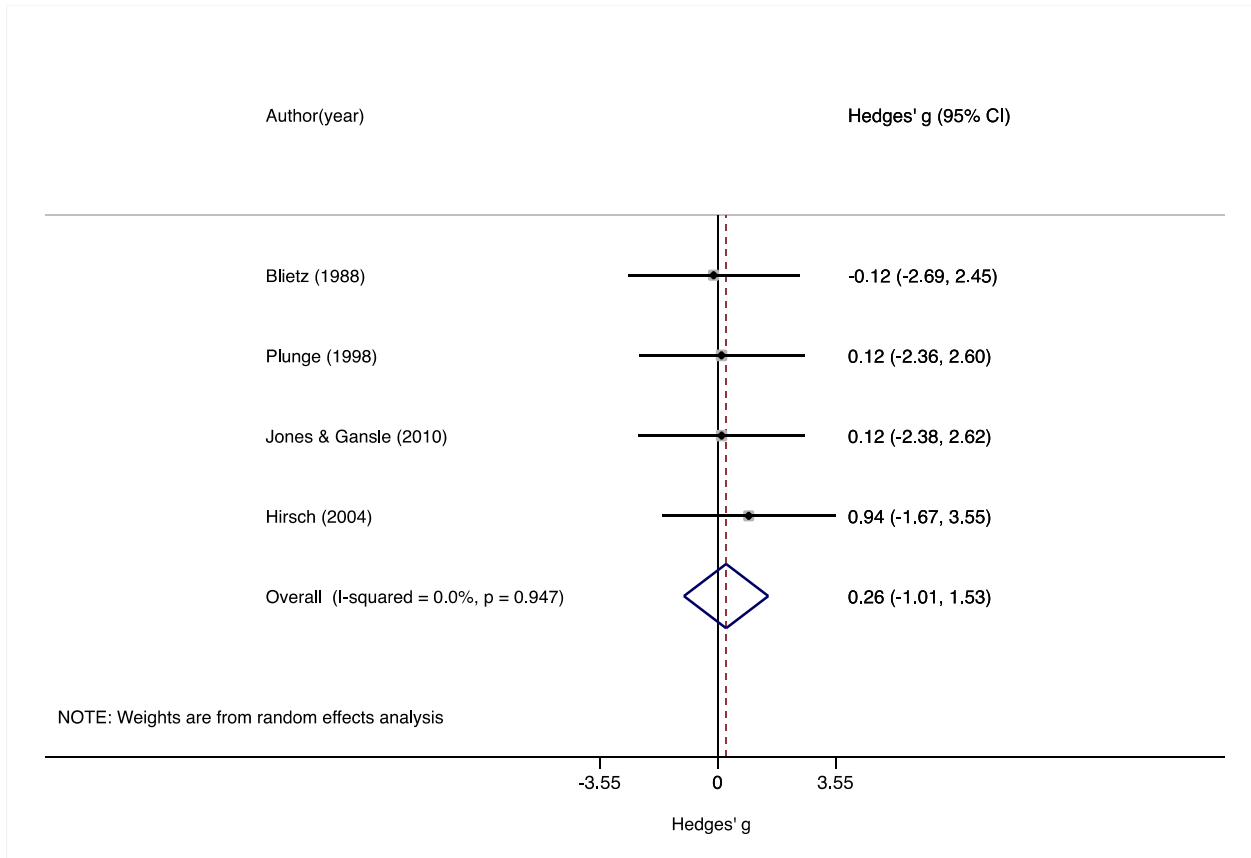


Figure 2. Forest plot of the mean effect, study weight, and confidence interval for parent training on parent involvement for parents of students with disabilities.