THE RELATIONSHIP BETWEEN TEACHER

ORIENTATION AND CONSULTATION

TERMINOLOGY, INTERVENTION ACCEPTABILITY,

EVALUATION OF EFFECTIVENESS, AND

WILLINGNESS TO IMPLEMENT

By

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2006

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF PHILOSOPHY
July, 2012

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Chapter I

Introduction

The success or failure of consultation has often been attributed to the actions of one party (Noell, Gansle, & Allison, 1999). Consultants largely attributed success or failure of consultation to consultees, while consultees credited the outcome to the actions of consultants. Consultation efficacy has been defined and measured primarily by teacher reports of outcomes, in other words whether the student improved, and satisfaction with consultation. Despite reliance on subjective reports in the literature, comparisons of teacher ratings to objective data in the evaluation of consultation success yielded mixed results (Lepage, Kratochwill, & Elliott, 2004; Sheridan, Eagle, Cowan, & Mickelson, 2001). While some teachers reported outcomes accurately, others reported consultation effectiveness even while looking at objective intervention data that indicated variable effectiveness. To investigate effects on perceived and actual consultation outcomes, previous research has examined variables related to personal characteristics of the consultant or consultee and the structure of consultation (Busse, Kratochwill, & Elliott, 1999; Hughes & DeForest, 1993; Witt, Erchul, McKee, & Pardue, 1991). According to teacher ratings, consultant interpersonal and problem-solving skills were the most important factors in predicting high ratings of consultant effectiveness (Hughes & DeForest, 1993). Moreover, consultant leadership in the form of topic determination was linked to the perception of more positive consultation outcomes according to both consultants and consultees (Witt, et al., 1991). Although consultant control of the interview was key, it is important to note that the consultee's agreement with what was communicated was also related to perceived effectiveness (Busse, et al., 1999).

The evidence in the existing literature seems clear that the language used to describe interventions has an influence on consultee agreement, or intervention acceptability. However, it has not been clear whether the effect is direct or indirect. Witt, Moe, Gutkin, and Andrews (1984) found a direct effect signifying that behavioral jargon was associated with lower intervention acceptability than pragmatic or humanistic descriptions. Hyatt and Tingstrom (1993) demonstrated that the use of behavioral jargon to describe interventions was associated with higher ratings of acceptability for negative interventions, but had virtually no effect on acceptability of positive interventions. Conversely, Rhoades and Kratochwill (1992) showed no direct effect. Rather, the relationship between terminology and intervention acceptability was more complex in that the effect of the consultant using technical or nontechnical terminology was mediated by the degree to which the consultant directed the interaction and the level of involvement of the consultee.

The type of terminology preferred by teachers has also been inconsistent in the literature. Teacher candidates demonstrated no significant preference for a particular approach (Arra & Bahr, 2005). Rather, they found cognitive, behavioral, and traditional remedial math interventions to be acceptable. Conversely, intervention descriptions focusing on natural, logical consequences were more acceptable to teachers than descriptions using behavioral or humanistic terminology (Witt, Moe, et al., 1984). Finally, teachers indicated more positive ratings for humanistic or pragmatic intervention descriptions than for descriptions containing behavioral terminology (Witt, 1986).

While existing literature has proven the importance of language used in consultation on consultees' judgments of intervention acceptability, fewer studies have examined the impact of terminology on perceptions of consultation outcomes and willingness to implement interventions. Accurate perceptions of effectiveness are important to successful consultation. Previous research indicated that effectiveness of interventions was positively associated with level of teacher acceptability (Elliott, 1988; Pisecco, Huzinec, & Curtis, 2001; Tingstrom, McPhail, & Bolton, 1989). Nonetheless, teachers' judgments of acceptability were not based solely on intervention effectiveness (Pisecco, et al., 2001). In fact, effectiveness may not even be the most important factor in treatment

acceptability. Commonly, intervention effectiveness has been measured through teacher report with no comparison to an objective measure (Papalia-Berardi, 2007). This is a noteworthy limitation of the existing literature as treatment integrity has not typically been measured (Papalia-Berardi, 2007). When interventions are delivered with low integrity the source of the outcome data shifts from the intervention to the implementation of the intervention. Thus, willingness to implement interventions is a variable worth examining in connection to language used in consultation, consultees' judgments of intervention acceptability, and perceptions of consultation outcomes. Previous research has shown that teacher intent to use interventions was strongly associated with intervention acceptability ratings (Amato Zech, Hoff, & Doepke, 2006; Jones & Lungaro, 2000). Additionally, consultant control of the conversation was associated with an increase in willingness of the consultee to implement an intervention (Witt, et al., 1991).

As indicated above, the consultation process has been more effective and efficient when differences between consultants and consultees have been reduced (Busse, et al., 1999). In fact, matching rationale for an intervention to a teacher's reported beliefs about problem definition, problem origin, and his or her own theory of change positively influenced acceptability of the intervention compared to a mismatched rationale (Conoley, 1991). Thus, gathering information about the teacher's views of the problem, the child, and possible solutions were of the most importance as opposed to focusing solely on the behavioral consultation approach of using the teacher interview to define the problem (Conoley, 1991). Accordingly then, modification of the consultant's language to match the teachers' beliefs is an important tool for consultation success. Teacher beliefs seem to fall on a continuum with Direct Instruction and constructivism forming the dichotomy within educational theory. The constructivist perspective is based upon the language of cognitive psychology and Direct Instruction uses the language of behavioral psychology (Jones & Southern, 2003). Behavioral jargon includes terms such as operant conditioning, control, appropriate/inappropriate, reinforcement/punishment procedures, reinforcers, contingency, opportunity to respond, and probability (Hyatt & Tingstrom, 1993). Conversely, vocabulary that is associated more often with a

constructivist approach includes words such as plan, habit, teach, more/less likely, correct, technique, cause, reward, and learn.

An effort to adapt consultation, specifically consultee-centered consultation, to the constructivist perspective has begun within the literature (Sandoval, 1996). The specific guidelines for consultation from a constructivist perspective were similar to descriptions of constructivist classrooms, including the need for the consultee to be an active participant and for both consultant and consultee to participate in a collaborative discovery and construction of new understandings. In this type of consultation, Sandoval (1996) asserted that two main outcomes determine success. First, the consultee would learn a productive way to serve the current client. Second, the consultee would gain the knowledge and skills to address future students with similar needs. The final solution for the target concern could either be suggested by the consultant, the consultee, or generated by a collaborative construction (Sandoval, 1996).

Although some studies have indicated that teachers' theoretical orientation has an impact on intervention acceptability, virtually no studies have compared teachers' reported orientation with beliefs endorsed to ensure a match. The reality may be that teachers do not teach from a theoretical basis (Pinnegar & Carter, 1990). Rather, teachers use an eclectic approach (Baumann, Hoffman, Moon, & Duffy-Hester, 1998). Thus, it may be unreasonable to expect teachers to accurately identify the theoretical approach they use in the classroom. In fact, conventional elementary teachers indicated indecision on statements of teaching philosophy and procedure, not agreeing with either child-centered or Direct Instruction approaches (Snider & Schumitsch, 2006). Conventional teaching was defined by a reliance on individual teaching beliefs based on intuition, teaching experience, and the characteristics of students in the class. Moreover, they indicated that teaching experience was more important than teacher education and training and placed much more importance on the art, rather than the science, of teaching. Taken together, these results indicated that many conventional teachers do not have a strong foundation on which to make decisions about the best ways to teach.

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Purpose and Hypotheses

The current study was designed to expand previous research on the effects of language used in consultation on ratings of intervention acceptability. In contrast to previous research that focused on consultant interpersonal and problem-solving skills, consultee demographics, and characteristics of interventions, this study manipulated the terms used for key words in descriptions of an intervention. What is more, this study investigated the impact of teacher beliefs associated with theoretical orientation as a possible mediating factor. Given that previous research has demonstrated that terminology has some sort of impact on intervention acceptability and, therefore, reports of effectiveness (Hyatt & Tingstrom, 1993; Rhoades & Kratochwill, 1992; Witt, 1986; Witt, Moe, et al., 1984), this study attempted to determine if the manipulation of key terminology in an intervention description had an effect on evaluation of objective outcome data. Furthermore, the current study investigated the impact of terminology on teacher willingness to invest time and effort in learning to implement an intervention. The movement toward teacher implementation of interventions for at risk and special education students makes it important to examine the impact of consultation variables on objective outcome data analysis and teacher motivation to carry out an intervention as planned. The current study investigated the relationship between terminology used to describe interventions and ratings of intervention acceptability, evaluations of intervention outcomes, and teacher willingness to invest time and effort in learning to implement an intervention. Secondarily, the current study examined teacher variables, primarily teacher beliefs related to educational theories, likely to impact responses.

Method

Written vignettes with corresponding videos and graphical outcome data were utilized to examine the influence of intervention terminology on ratings of intervention acceptability, evaluations of intervention outcome data, and teacher willingness to implement. The scenarios varied on terminology and successfulness of outcome data. Teachers rated intervention acceptability,

evaluated intervention successfulness, indicated willingness to learn more about implementation, and identified theoretical orientation.

Participants and Procedure

The sample for this study included 75 elementary teachers from six school districts in central Iowa (64 women, 11 men, M_{age}=42.8 years, SD=11.8). Participants currently teaching grades pre-kindergarten through sixth were recruited through email invitation to participate in the study. The email invitations were sent to teachers' individual district email addresses and data was collected via online surveys. Participation was voluntary, however participants were offered a chance to win one of three cash prizes of ten dollars. Participants first completed the demographic questionnaire and the modified Teacher Orientation Rating Scale (TORS). Then they viewed one of the four vignette conditions, the matching version of the video embedded on the page, and a graph of the outcome data. There were an equal number of participants assigned to the vignette with behavioral terminology and effective outcome data, behavioral terminology and ineffective outcome data, constructivist terminology and effective outcome data, and constructivist terminology with ineffective outcome data. Participants then completed the Intervention Rating Profile (IRP), answered five dichotomous yes/no questions examining judgments of outcome, intervention use, and willingness to implement, and indicated their teaching orientation.

Research Design and Experimental Conditions

The effects of the independent variables were evaluated using a univariate analysis of variance and group differences were assessed using independent samples *t*-tests. Consultant language (behavioral vs. constructivist) and intervention outcome (successful vs. unsuccessful) were independent variables. Teacher judgments of intervention acceptability, judgments of the intervention outcome data, and willingness to implement the intervention were separate dependent variables. A written vignette and video described a math fluency intervention and was paired with a line graph of outcome data, which constructed the combinations of the independent variables. The vignettes and video varied the terminology used to describe characteristics of the intervention

(behavioral vs. constructivist) and the line graphs varied the pattern of intervention outcome data

(effective vs. ineffective). The combination of variables resulted in the four experimental groups

(behavioral/successful, behavioral/unsuccessful, constructivist/successful and

constructivist/unsuccessful) and teacher participants were assigned to the four groups in equal

numbers.

CHAPTER II

Review of Literature

Consultation

Consultation has been broadly defined as a process by which a consultant provides psychological and educational services by establishing a cooperative working relationship with a consultee to prevent or remediate academic struggles and behavior of a student or group of students (Erchul & Martens, 2002). Typically, consultation has been based on the problem-solving model, which consists of the stages of problem identification, problem analysis, plan implementation, and plan evaluation (Bergan & Kratochwill, 1990). This model has been used by numerous studies in the literature, which have demonstrated considerable evidence that consultation is efficacious. The concept of efficacy has been defined and measured in the literature by teacher reports of outcomes and satisfaction with consultation. In over half of consultation cases teachers indicated student improvement in the area of concern (Lepage, et al., 2004). In addition, teachers indicated overall satisfaction with the consultation process as well as the consultant. Furthermore, when the objectives of consultation emphasized a focus on the teacher and collaboration between professionals, teacher ratings pre- and post-implementation indicated overall acceptance of the consultation process (McDougal, Clonan, & Martens, 2000). Teachers also reported decreases in problem severity following consultation, indicating efficacious outcomes. Post-consultation perceptions of the consultation process and outcomes reported by teacher consultees were similar to ratings reported by school psychologist consultants (Noell, et al., 1999).

Consultation has been demonstrated successful for improving academic success across subject areas as well as decreasing problem behavior. Overall, teachers were more likely to seek consultation services for behavioral concerns (Hughes, Grossman, & Barker, 1990; Noell, et al., 1999). When teachers sought consultation for academic concerns, reading skill deficits were the most common referral (Noell, et al., 1999). In general, both consultants and consultees rated problems addressed in consultation as relatively severe, indicating a delay in the initiation of consultation services (Noell, et al., 1999). Correspondingly, consultees rated consultation as more acceptable and effective for elementary age children exhibiting severe problem behaviors (Sheridan, Eagle, Cowan, & Mickelson, 2001). However, if the students were older consultation was more acceptable for less severe problem behaviors.

The success or failure of consultation has often been attributed to the actions of one party (Noell, et al., 1999). Consultants largely attributed success or failure of consultation to consultees. Likewise, teacher consultees credited consultation success or failure to the actions of consultants. Although consultee ratings of goal attainment have been a common measure of consultation success, convergence between subjective and objective outcome measures has been inconsistent in the literature. In one study, data from client observations and consultee ratings of goal attainment showed that the majority of clients met or came close to meeting their treatment goals by the end of the consultation process (Lepage, et al., 2004). This finding demonstrated convergence between objective and subjective outcome data. Conversely, another study found teachers' reports of consultation outcome effectiveness were not supported by objective direct observation outcome data (Sheridan et al., 2001). In fact, teachers reported overall consultation effectiveness even though the objective data revealed varying degrees of effectiveness.

Structure of consultation. The structure of consultation influences perceived, as well as actual, outcomes. Communication behaviors and leadership during consultation interviews are two variables that have been examined to determine which aspects contribute to the success or failure of consultation. Consultant control in a consultation relationship has been shown to be

preferred by teachers, according to a review of research on verbal interactions (Witt, 1990).

Likewise, leadership on the part of the consultant has been shown to be positively related to

consultation outcome effectiveness (Gutkin, 1996). Analyses of behavioral consultation

interviews revealed that consultees did the majority of talking (Busse, et al., 1999; Gutkin, 1996).

Even so, consultants were viewed to be in control of the conversation. Control was perceived

when consultants asked more questions to elicit information than did consultees. Analyses

revealed that most of the consultees' verbalizations fell into the category of providing information

or expressing an opinion. In other words, consultees were responding to consultant questions

(Busse, et al., 1999). On the contrary, consultants sought out and delivered information about

student behaviors, environmental settings, and plans for intervention. Consultants also led the

flow of the conversation by determining the focus of conversation, change of topic, and by

validating consultee statements (Martens, Erchul, & Witt, 1992). Furthermore, consultants

summarized and highlighted selected information (Gutkin, 1996). Although consultants exhibited

nearly all of the verbal leadership, consultees were generally accepting of the topics and guidance

and rarely disagreed. When the consultant was in charge of determining the topics of

conversation across all interviews, both consultant and consultee perceived more positive

consultation outcomes (Witt, et al., 1991). In addition, consultant leadership established by topic

determination in the interview was associated with an increase in positive long-term outcomes,

specifically the consultees' willingness to implement an intervention.

Teacher preferences in consultation. Teacher preferences in consultation are linked to

factors that increase acceptability of the consultation process. Teacher acceptability of

consultation was predicted by a focus on family school partnership, including promoting

strengths, identifying and accessing resources, and skill building (Garbacz, 2008). One purpose

of consultation was to reduce the number of referrals for diagnostic assessment. In general,

teachers reported a slight preference for consultation over traditional diagnostic referral services

(Gutkin, & Bossard, 1984). In school systems it has often been consultees, or teachers, that

initiate consultation for individual cases. Accordingly, access to a building school psychologist

has been shown to be one of the best indicators of teachers' participation in consultation (Stenger,

Tollefson, & Fine, 1992). Not surprisingly, the school environment has impacted teacher

attitudes toward consultation. Although teachers have been expected to seek out and initiate

consultation services, they were more likely to become involved in the consultation process when

the consultant offered assistance (Stenger, et al., 1992). Furthermore, rigid structure and

organization regarding the process of consultation initiation negatively impacted teachers'

perceptions of consultation (Gutkin, & Bossard, 1984). In fact, the teachers viewed such

structure as controlling, demonstrating teacher preference for consultation services in an open,

collaborative school environment.

There has been much debate on whether consultation should be conducted from an expert

or collaborative model. In fact, each approach has been successful depending on the situation.

Teachers preferred a collaborative model of consultation when they viewed video of an

overwhelmed teacher expressing a vague request for assistance, but preferred the expert model

when they saw a calm and collected teacher make a clear statement of the problem and specify

what had already been tried (Graham, 1998).

Several additional variables have contributed to teachers' participation in and preference

for consultation services. Teachers who felt control over presenting problems in their classrooms

were more likely to prefer consultation to traditional diagnostic referral services (Gutkin &

Ajchenbaum, 1984; Gutkin & Hickman, 1988). Teachers were also more open to consultation

when they perceived that the school psychologist had specialty training in problem solving

(Hughes, et al., 1990; Stenger, et al., 1992). In addition, less experienced teachers were more

likely to prefer and participate in consultation (Gutkin, & Bossard, 1984; Stenger, et al., 1992).

In fact, teachers' preference for consultation over referral decreased the more years they had been

teaching, unless they had continued teaching at their original school (Gutkin, & Bossard, 1984).

In other words, more experienced teachers continued to prefer consultation over traditional

referral if they taught in the same school for the duration of their careers. What is more, when consultation was novel to teachers, they preferred and benefitted more from specific information and direction than from general, theoretical information (Pedron, 1990).

In general, teachers expected consultation to be valuable and effective, especially for behavioral concerns (Hughes, et al., 1990). Indeed, teacher consultees sought consultation for behavioral problems more frequently than for academic problems. Although teacher expectations for consultation were positive overall, teachers with a high self-efficacy for solving problems in their classrooms had low expectations for consultation and did not believe consultation would benefit them. When these teachers with high problem-solving self-efficacy entered consultation, they reported fewer changes in their own behavior as a result. Conversely, teachers with a low self-efficacy for problem-solving in their classrooms had high expectations for consultation outcomes and reported a greater number of changes in their behavior as a result of consultation (Hughes, et al., 1990).

Perceptions of consultant effectiveness. The characteristics of consultants have a great impact on the perceptions of consultation outcomes. Teachers expect consultants to be highly efficient, professional, intelligent, and display high levels of interpersonal skills, such as being tactful, collaborative, pleasant, and respectful of personal distance (Harris, Ingraham, & Lam, 1994). In addition, efficiency of communication influenced consultation outcomes in that an excess of consultant statements regarding student behavior and treatment planning was associated with negative treatment outcomes (Busse, et al., 1999). Ratings of consultant effectiveness indicated that the factors of interpersonal skills, problem-solving skill, consultation process skills, and ethical skills were associated with high effectiveness (MacLeod, 2001). A similar study found that two of these factors, interpersonal and problem-solving skills, were the most important factors in predicting high ratings of consultant effectiveness (Hughes & DeForest, 1993). Specifically, consultee ratings were high when the consultant demonstrated interpersonal skills, including encouragement, support, and praise of the consultee's contributions to the discussion.

Also, consultants' use of open-ended questions, rather than closed questions, seemed to facilitate the desired collaborative, supportive atmosphere. In contrast, after viewing videotapes on consultation interactions, consultees rated the consultant using the instrumental, or directive, style of consultation as more effective and preferred over the interpersonal style (Duncan & Pryzwansky, 1993). As for consultants' problem-solving skills, consultee ratings were high when the consultant demonstrated expertise by presenting hypotheses about the function of the problem behavior (Hughes & DeForest, 1993). Additionally, consultants' ability to create and follow through with intervention plans and evaluate the outcome data was rated highly by teachers and was perceived to impact behavior change in the students (MacLeod, 2001).

One study examined the relationship between consultant use of questions in an initial interview and teacher ratings of consultant effectiveness (Hughes, Erchul, Yoon, Jackson, & Henington, 1997). Consultation sessions in the problem identification stage were transcribed and coded to identify the questions used by the consultants, according to three dimensions: format, process, and response. Format specified open versus closed questions, process referred to the function of the questions, and response indicated the consultee's reaction to the consultant question. Findings indicated that positive consultee evaluations of consultant effectiveness were associated with questions that were derived from factual knowledge and those that were accepted (responded to appropriately) by the consultee (Hughes, et al., 1997). Limitations of this study made it unclear whether it was actually the consultants' questions that impacted the effectiveness rating or some other characteristics of the consultees that influenced the interactions and evaluations. The types of questions may be less important than whether the consultee agrees with what the consultant is communicating. Consultees' responses that indicated agreement with consultant statements were found to predict ratings of consultant effectiveness (Busse, et al., 1999).

Perceptions of consultation do not appear to be influenced by demographic variables of the consultant, consultee, or student. For example, no gender differences were found in the

consultees' expectations of the consultant (Harris, et al., 1994). Additionally, there were no significant differences on preference or ratings of consultant effectiveness or credibility when consultant race was varied (Duncan & Pryzwansky, 1993; Naumann, 1996).

In addition to examining the impact of consultant-related variables on perceptions of consultant effectiveness, variables associated with teachers have been investigated. In the literature, the relationships between teachers' self-efficacy for problem solving within their classroom, expectations for consultation outcomes, and ratings of consultant effectiveness have been inconsistent. As discussed above, teachers' problem-solving self-efficacy was negatively correlated with expectations of consultation outcomes (Hughes, et al., 1990). Yet, high expectations for consultation outcomes were related to high ratings of consultant effectiveness. Thus, teachers with low problem-solving self-efficacy would likely have rated consultant effectiveness as high. On the other hand, studies have found a positive correlation between teachers' self-efficacy and ratings of consultant effectiveness (DeForest & Hughes, 1992; Gutkin & Ajchenbaum, 1984). Effectiveness, then, may be influenced by teacher variables not measured in previous studies. Indeed, older teachers with higher degrees and more teaching experience rated the variables of consultation knowledge and organization as more important to effectiveness than did teachers early in their careers (Knoff, 1995). On the other hand, all teachers, regardless of age, education, and experience, rated consultants' interpersonal, professional, and problem-solving skills high. Teacher responsibility for decision-making in consultation did not influence teacher ratings of consultant effectiveness (DeForest & Hughes, 1992).

Resistance to the consultation process. Resistance to the consultation process is complex and several variables influence the source, degree and likelihood of resistance. In one study, consultants completed questionnaires on each case reporting their perceptions of consultee, consultant, and organizational characteristics, plus consultee resistance, and overall success of the consultation (Gutkin, & Hickman, 1990). The consultants' reported perceptions of consultee resistance separated into three factors that were significantly related to consultee resistance from

the perspective of the consultants: consultee, consultant, and organizational characteristics. Although all three types of variables were associated with resistance, the consultee-related variables were the most strongly correlated. An additional finding was that when consultants perceived resistance, consultation was rated as unsuccessful. Likewise, if the consultants perceived no resistance they reported being successful (Gutkin, & Hickman, 1990). On the whole, administrative support has been a key factor in the success of consultation services, particularly in the domain of teacher training (McDougal, et al., 2000). Teachers' discomfort with the consultation process stemmed from their lack of skills and training in intervention design and progress monitoring.

Social psychology research has also been discussed in relation to resistance in school consultation. One review of the social psychology literature discussed the constructs of cognitive dissonance, reactance, attribution, influence or power, and modeling (Tingstrom, Little, & Stewart, 1990). The main conclusion of that review was similar to the conclusions of the school psychology consultation literature, which was that consultant characteristics that reduced resistance in consultation included being knowledgeable, well trained and competent, and having good interpersonal skills.

To ensure clarity on what type of professional interactions fall into the category of consultation, participants were given a definition of consultation prior to answering questionnaires (Gonzalez, 2004). Teachers indicated their level of agreement with variables in four domains: teacher-related, school psychologist-related, organizational, and situational factors. Results indicated that the number of consultations that teachers reportedly participated in was not significantly related to the variables in the aforementioned domains. Moreover, the amount of time that a school psychologist was present in the school predicted the number of consultations the teachers participated in. The authors noted that several teachers wrote comments on the questionnaires indicating their desire to have increased access to their school psychologist (Gonzalez, 2004). Dependent variables and demographic information collected included number

of consultations the teacher participated in, gender, age, postsecondary degree, community type, number of years teaching at present school, total number of years teaching, number of students in the building, and number of hours per week a school psychologist was in the building. Only two significant correlations were found between dependent variables and demographic variables. First, the number of hours a school psychologist was in the building and the number of consultations teachers reported participating in were positively correlated. Second, the number of consultations reported and years teaching at present school were negatively correlated.

To provide added clarity to participants, written and videotaped vignettes were used to demonstrate consultation interactions during problem identification and problem analysis (Gorges, Elliott, & Kettler, 2004). The vignettes each described one of two types of consultee resistance, either overt or covert resistance. Experienced and novice school psychology consultants were asked to identify resistance, if any, and its source in each vignette. Participants were also asked to identify how they would manage the resistance they detected from the consultee. On the video, only the consultant's back was visible, while the consultee was fully visible. This perspective was designed to encourage the participants to envision themselves as the consultant. Results of the study indicated that the experience level of the consultant viewers did not significantly impact identification of resistance in either the overt or covert vignettes. Nevertheless, both experienced and novice consultants identified more instances of overt resistance behaviors than covert behaviors. Regardless of the type of resistance displayed, all consultants identified consultees, rather than consultants, as the source of resistance. The one variable that experienced and novice consultants differed on was the number and uniqueness of strategies they listed to manage overt resistance (Gorges, Elliott, & Kettler, 2004).

Intervention Acceptability

Intervention effectiveness. A number of factors have influenced teacher reports of intervention acceptability, including the severity of the problem, time and level of skill required to implement and maintain the intervention, intervention type, risk, and effects on other students

(Witt, Elliott, & Martens, 1984; Witt, Martens, & Elliott, 1984). Additionally, previous research

has investigated the relationship between teachers' perceptions of intervention acceptability and

effectiveness (Elliott, 1988; Erchul, et al., 2007; Erchul, et al., 2009; Pisecco, et al., 2001;

Tingstrom, et al., 1989). By and large, effectiveness of interventions was found to be positively

associated with level of teachers' acceptability ratings. Indeed, favorable pretreatment

acceptability ratings were positively correlated with perceptions of treatment effectiveness

(Elliott, 1988). Interventions that targeted consultees' stated concerns were more likely to

alleviate those concerns, an indication that the interventions had been effective. This experience

led to teachers' perception of the interventions as acceptable. On the other hand, interventions

that were perceived to not address the original concerns seemed to increase the level of concern

(Pedron, 1990). Overall, low ratings of acceptability were associated with knowledge that the

intervention had not been effective in the past (Tingstrom, et al., 1989).

In contrast to direct interventions, consultation services have also been examined as an

intervention (Martens, et al., 1986). Teachers rated consultation as somewhat effective, which

was equivalent to their effectiveness ratings of time-out strategies. However, teachers also

reported that utilization of consultation services was more difficult than using time-out

procedures. Nevertheless, consultation was used more frequently than time-out procedures

(Martens, et al., 1986).

Specific interventions preferred by teachers have pointed toward which components of

interventions have the greatest influence on teacher perceptions. In one study, teacher

acceptability of four commonly used interventions targeting behavior associated with ADHD was

examined (Pisecco, et al., 2001). The four interventions included in the study were a daily report

card, a response cost technique, stimulant medication, and a classroom lottery. Teachers judged

the daily report card as the most acceptable and quickest to result in behavioral change of the four

interventions. Stimulant medication was judged as effective and quick to produce behavior

change, but as less acceptable than the daily report card. In fact, medication was rated as the least

acceptable intervention of the four even though it was judged as effective as the daily report card and more effective than the response cost technique or the classroom lottery. Thus, teachers' judgments of acceptability were not based solely on intervention effectiveness (Pisecco, et al., 2001). In actuality, effectiveness may not be the most important factor in treatment acceptability. Similarly, acceptability of differential reinforcement of incompatible behaviors, which has been shown to be a highly acceptable intervention, has also been rated as significantly more acceptable than other interventions even when it was reported to be ineffective (Tingstrom, et al., 1989).

On a post-consultation questionnaire, teacher consultees and school psychologist consultants gave similar ratings on perceptions of intervention outcome (Noell, et al., 1999). Even so, several studies have relied upon teacher report of intervention effectiveness with no comparison to an objective measure (Papalia-Berardi, 2007). This is a noteworthy limitation of the existing literature. A chief constraint to assessing teacher perception of effectiveness through the use of self-report was that treatment integrity may be low (Papalia-Berardi, 2007). When an intervention is delivered with low integrity the source of the outcome data shifts from the intervention to the implementation of the intervention.

Complexity and control over implementation. Intervention complexity is one of the main components that has been shown to influence teachers' acceptability ratings (Elliott, Witt, Galvin, & Peterson, 1984). Complexity in this context refers to amount of time it takes to implement an intervention, level of difficulty to learn and implement an intervention, and/or the match with social principles. Time is particularly critical for educators. Accordingly, teachers gave higher satisfaction ratings to interventions that were less time-consuming and lower satisfaction ratings to more time-consuming interventions (Noell, et al., 1999). Furthermore, teachers rated interventions requiring less of their time as more acceptable than those requiring more time (Witt, Martens, & Elliott, 1984). The least acceptable interventions overall were those that were the most time-consuming to implement and maintain, though time was a mediating variable for acceptability of positive versus negative interventions.

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Negative interventions were most acceptable when they required moderate amounts of time (Witt, Elliott, et al., 1984). This preference for more time-consuming interventions was likely due to the fact that low levels of involvement on the part of the teacher were not acceptable if the problem behavior was severe. Again, the most acceptable interventions to teachers were the ones that were positive and required little time to implement and maintain. Interventions requiring more of the teachers' time were not less acceptable solely because of the time they require, but because teachers also believed that the progress of the other children in the class was negatively impacted (Witt, Elliott, et al., 1984).

Without a doubt, the relationship between teacher time and acceptability is not uncomplicated. In fact, the amount of teacher time and effort required for an intervention interacted with other variables to impact acceptability, namely problem severity, type of intervention, and control over implementation (Martens, Witt, Elliott, & Darveaux, 1985). For example, a time-consuming response cost intervention was rated as more acceptable for severe behavior than was a quick and simple office referral. This finding was inconsistent with other findings in the literature that have reported less acceptability for more time-consuming interventions (e.g., Noell, et al., 1999; Witt, Martens, et al., 1984). One explanation for this incongruity was that teachers may have preferred to have control over implementation of an intervention even if that required some additional time (Martens, et al., 1985). Indeed, teachers indicated preference for interventions that can be delivered within the classroom (Witt, Elliott, & Martens, 1984; Witt, Martens, & Elliott, 1984). In fact, teachers rated removal from the classroom as the least effective and least frequently used type of intervention (Martens, et al., 1986). Similarly, interventions implemented by teachers within their own classrooms have been rated much more acceptable than those implemented by other school professionals, such as the principal, outside the classroom (Witt & Robbins, 1985). Thus, control over the intervention did seem to influence acceptability. However, once an intervention was perceived as requiring an

extensive amount of time or effort on the teachers' part then ratings of acceptability decreased (Martens, et al., 1985).

Collectively, teacher acceptability ratings were strongly associated with intent to use the intervention (Amato Zech, et al., 2006; Jones & Lungaro, 2000). Likewise, interventions that were rated the most difficult to use were also rated highly unacceptable (Martens, Peterson, Witt, & Cirone, 1986). For example, corporal punishment was rated as difficult to use and highly unacceptable (Witt & Robbins, 1985). Though in that case, the rating likely did not indicate complexity so much as risk to the child, personal disagreement with the intervention, or incompatibility with social principles (Martens, et al., 1986; Witt & Martens, 1983).

Teacher ratings of commonly used interventions have often been studied using brief written descriptions and self-report questionnaires. Target variables have included overall ratings of acceptability, ratings of how frequently different types of interventions were used in classroom settings, teachers' ratings of how easy they were to use, and the reported effectiveness of each type of intervention (Martens, et al., 1986; Witt & Robbins, 1985). Interventions falling into the categories of redirection and tangible rewards were rated by teachers as most frequently used, easiest to use, and most effective (Martens, et al., 1986). This finding is consistent with evidence that teachers preferred less time-consuming, simpler interventions to complex interventions as well as reinforcement-based to punishment-based interventions (Martens, et al., 1986; Witt, Martens, et al., 1984). Indeed, interventions incorporating differential reinforcement of other behaviors were rated much more acceptable than interventions based upon reprimands, time-out, staying after school, and differential reinforcement of low rates of responding (Witt & Robbins, 1985).

Differential positive reinforcement interventions were used to compare peer attention, teacher attention, or tangible reinforcers, however, teachers rated acceptability low for all three types of reinforcement (Jones & Lungaro, 2000). Despite the low ratings, teachers may have actually preferred interventions based on peer attention over those based upon teacher attention or

tangibles. Although data indicated such a preference, limitations of the study prohibited

conclusions about teachers' general preferences for interventions (Jones & Lungaro, 2000).

Intervention type. The type of intervention, the seriousness of the presenting problem,

and the process by which the intervention was developed are among the main factors that

influenced teacher ratings of acceptability. As previously mentioned, intervention type

(reinforcing or non-reinforcing) did influence teachers' acceptability ratings (Elliott, et al., 1984).

Positive interventions were rated as more acceptable than negative, although acceptability of

negative interventions increased if the interventions were developed collaboratively (Elliott,

1988; Kutsick, Gutkin, & Witt, 1991; Tingstrom, et al., 1989). In fact, all interventions were

more acceptable to teachers if they were developed collaboratively than if they were developed

solely by the school psychologist or solely by the teacher. Even so, acceptability of the positive

interventions was higher than all other interventions (Tingstrom, et al., 1989). This finding even

remained true when teachers were told that the intervention was ineffective. Negative

interventions were not only rated as less acceptable, but also more risky than positive

interventions (Witt, Elliott, et al., 1984). In summary, reinforcement-based interventions were

preferred over punishment-based interventions across all conditions, similar to findings in other

studies (Hyatt & Tingstrom, 1993). Furthermore, acceptability ratings were higher for

reinforcing over reductive interventions and higher for low complexity over high complexity

interventions, unless the target behavior was severe (Witt & Robbins, 1985).

Problem severity and modality of presentation. Regarding the relationship between

intervention acceptability and the severity of the problem, findings have been inconsistent in the

literature. One study found no significant difference in acceptability of interventions for severe

behavior problems (Kutsick, et al., 1991). In contrast, some results have indicated that teacher

ratings of intervention acceptability varied significantly depending on the severity of the behavior

problem (Elliott, et al., 1984). More specifically, intervention acceptability was positively

associated with severe problem behavior (Martens, et al., 1985; Witt, Moe, Gutkin, & Andrews,

1984). In fact, interventions that effectively diminished severe behaviors were rated significantly more acceptable than when those same interventions were applied to mild behaviors (Witt & Robbins, 1985).

For the problem severity variable, there is some evidence that observational and outcome data support results from self-report measures. Acceptability of a behavioral contract intervention for severe externalizing behaviors was consistent on both pre- and post-treatment ratings (Wilkinson, 1997). Specifically, teachers gave the highest ratings to items related to overall acceptability, fairness and reasonableness, absence of negative effects, and willingness to implement within the classroom. Moreover, observational data indicated improvement in behavior for all of the students with severe problem behavior (Wilkinson, 1997).

The modality of presentation within a study has also been manipulated to determine the effect on intervention acceptability (Martens, et al., 1985). More specifically, written descriptions of problem behavior and possible interventions were compared to videotapes explaining the interventions. Each teacher rated two intervention options for two different problem behaviors. Half of the teachers read the written descriptions and the other half viewed video of the problem behaviors and interventions. Results indicated there were no differences between the two modalities of case presentation (Martens, et al., 1985).

Teacher and student variables. The impact of teacher and student characteristics on intervention acceptability has also been considered in the literature. Teacher experience was found to be associated with intervention acceptability (Witt, Moe, et al., 1984; Witt & Robbins, 1985). Specifically, teachers with fewer years of experience rated interventions as more acceptable, regardless of the type. Additionally, intervention acceptability was influenced by the teachers' level of teaching self-efficacy (DeForest & Hughes, 1992). In fact, high teaching self-efficacy teachers rated interventions as more acceptable. Logically, however, teaching self-efficacy would increase with experience. Thus, it seems that findings have been inconsistent in that both inexperienced and experienced teachers have given high ratings of intervention

acceptability. DeForest and Hughes (1992) manipulated level of involvement and responsibility for decision-making in an effort to examine differences between inexperienced and experienced teachers. However, teacher ratings of acceptability did not differ on those two variables.

Student variables have not generally been found to affect teacher ratings of effectiveness, acceptability, or rate of change (Pisecco, et al., 2001). Specifically, age of the child and student race were not significantly related to acceptability of the intervention (Naumann, 1996; Tingstrom, et al., 1989). The only significant gender-related finding in the consultation literature was that teachers disagreed more strongly with the use of medication for girls than for boys when there was a behavioral intervention alternative (Pisecco, et al., 2001).

Consultant variables. A review of intervention acceptability literature focusing on behavioral treatments revealed three psychologist–related variables influencing acceptability: jargon used to describe interventions, rationale provided for the use of interventions, and involvement in treatment (Elliott, 1988). The description of interventions, including jargon used, is discussed in detail in the next section. As for rationale for the use of interventions, presentation of assessment information to support the selection of an intervention was associated with increased acceptability (Jones & Lungaro, 2000). Furthermore, the consultant's knowledge of intervention planning, as perceived by teachers, was related to effective outcomes (Noell, et al., 1999). Additionally, the literature revealed a positive relationship between pretreatment ratings of acceptability and perceived treatment effectiveness (Elliott, 1988; Elliott, Witt, & Gresham, 1988). Conclusions of this review were consistent with other studies in the literature, which indicated that positive interventions receive higher ratings of treatment acceptability than reductive interventions.

Consultants also influence teachers' acceptability of interventions by the way the request is presented (Martens, Kelly, & Diskin, 1996). When consultants asked teachers to complete a simple initial task before the presentation of a more complex intervention, teacher ratings of pretreatment acceptability and rates of compliance remained high. On the other hand, when the

initial request was very difficult and a simpler intervention was proposed second, teacher ratings

of pretreatment acceptability were low (Martens, et al., 1996). Presentation of a punishment-

based intervention prior to presentation of a reinforcement-based intervention also increased

acceptability of the positive intervention (Hyatt & Tingstrom, 1993). Incidentally, consultant

race did not have a significant effect on consultee ratings of intervention acceptability (Naumann,

1996).

Description of Interventions. The language used to describe interventions may

influence teacher behavior in several ways. For example, although teachers preferred positive

over negative interventions, as discussed previously, the use of behavioral jargon to describe

punishment-based interventions may have made them more acceptable to teachers (Hyatt &

Tingstrom, 1993). While this finding pointed to a relationship between behavioral terminology

and intervention acceptability, results have been inconsistent in the literature. Some findings

indicated no direct effect while other results pointed to a significant direct effect (Rhoades &

Kratochwill, 1992; Witt, Moe, et al., 1984). In reality, the relationship between terminology and

intervention acceptability has proven more complex. For instance, use of behavioral jargon to

describe interventions was associated with higher ratings of acceptability for negative

interventions, but had virtually no effect on acceptability of positive interventions (Hyatt &

Tingstrom, 1993). What is more, the effect of the consultant using technical or nontechnical

terminology was mediated by the degree to which the consultant directed the interaction and level

of involvement of the consultee (Rhoades & Kratochwill, 1992).

The type of terminology preferred by teachers has also been inconsistent in the literature.

Teacher candidates demonstrated no significant preference for a particular approach (Arra &

Bahr, 2005). Rather, they found cognitive, behavioral, and traditional remedial math

interventions to be acceptable. Likewise, students also found all three approaches acceptable

even if they had only been exposed to one type of intervention. Conversely, intervention

descriptions focusing on natural, logical consequences were more acceptable to teachers than

descriptions using behavioral or humanistic terminology (Witt, Moe, et al., 1984). Finally,

teachers indicated more positive ratings for humanistic or pragmatic intervention descriptions

than for descriptions containing behavioral terminology (Witt, 1986).

Intervention Implementation

Intervention acceptability and implementation are separate, though related, components

of the consultation process. In fact, teacher acceptability ratings of interventions were strongly

associated with intent to use those interventions (Jones & Lungaro, 2000). In general, several of

the factors that impacted intervention acceptability also influence intervention implementation.

For example, consultant leadership, or topic determination, during consultation interviews was

associated with an increase in consultees' willingness to implement an intervention (Witt, et al.,

1991). Implementation of interventions was negatively impacted by initial requests that were

inconvenient, time-consuming, and required a lot of effort on the part of the teacher (Martens, et

al., 1996).

As discussed previously, many studies have relied upon teacher report of intervention

effectiveness with no comparison to an objective measure (Papalia-Berardi, 2007). Thus, low

treatment integrity could have influenced the results, shifting the source of the outcome from the

intervention to the implementation of the intervention. Incorporating objective measures of

evaluation throughout the process, data-based decision making, and using empirically-supported

interventions may help to increase implementation integrity (Papalia-Berardi, 2007).

Resistance. Teachers resist using interventions in their classrooms for a multitude of

reasons. Consultee resistance has been linked to unwillingness to participate in a process of

change, intolerance of change, opposition to change, fear of loss, fear of the unknown, and

miscommunication (Margolis, Fish, & Wepner, 1990). A review of the literature identified four

overarching factors associated with teachers' use of interventions: intrusiveness in the classroom,

amount of time and resources required to implement and maintain the intervention, effectiveness,

and theoretical orientation of the intervention (Witt, 1986). Each of these four factors was

discussed above in relation to intervention acceptability. With regard to resistance, the literature

does not differentiate between intervention acceptability and intervention implementation.

Therefore, the results of the literature on resistance will not be repeated in detail in this section. It

is important, however, to clarify that fourth factor identified, theoretical orientation of the

intervention generally referred to the language used to describe the intervention (Witt, 1986).

Teacher Beliefs

Although theory and beliefs are the foundation for action, it seems teacher beliefs have

not been shaped by formal education in instructional approaches. In fact, many teacher education

programs may not emphasize theoretical foundations at all. For example, there is a lack of

behavioral training in teacher education programs despite decades of research that has

demonstrated its effectiveness for change in academic and social domains (Begeny, 2006;

Skinner & Hales, 1992). Additionally, conventional elementary teachers indicated indecision on

statements of teaching philosophy and procedure, not agreeing with either child-centered or

Direct Instruction approaches (Snider & Schumitsch, 2006). Conventional teaching was defined

by a reliance on individual teaching beliefs based on intuition, teaching experience, and the

characteristics of students in the class. Moreover, conventional teachers indicated that teaching

experience was more important than teacher education and training and placed much more

importance on the art, rather than the science, of teaching. The reality may be that teachers do not

teach from a theoretical basis (Pinnegar & Carter, 1990). Rather, they use an eclectic approach

(Baumann, Hoffman, Moon, & Duffy-Hester, 1998). Thus, it may be unreasonable to expect

teachers to accurately identify the theoretical approach they use in the classroom. Taken

altogether these results indicated that many conventional teachers do not have a strong foundation

on which to make decisions about the best ways to teach. Rather, it seems memory of their own

experiences in school or messages about children's learning touted by media, society, or

curriculum marketing have shaped teachers' beliefs. Some elementary schools prescribe teacher

adherence to a certain instructional approach, such as constructivism or Direct Instruction

(Snider, 2006). These institutions may help provide the theoretical foundation that many teachers seem to be lacking. However, it is unclear whether teachers seek out those jobs because they match their philosophical beliefs about teaching and learning or they learn the prescribed approach as they work in the schools (Snider, 2006).

The literature on teaching beliefs and practices has indicated inconsistency and confusion among teachers. Conventional teachers were more unified on statements asserting that student achievement is associated with teaching to individual learning styles, using eclectic instruction, and maintaining small class sizes than they were on any of the items about teaching practices (Snider, 2006). None of the concepts that were collectively endorsed have been supported in research, although they are popular ideas in society. Lower and upper elementary teachers were surveyed about their beliefs regarding effective mathematics instruction and half of the first grade teachers believed that if students discovered ideas and strategies on their own they would develop a strong understanding of mathematical concepts (Correa, 2008). Additionally, nearly every first grade teacher surveyed reported the importance of using concrete representations, or manipulatives, to develop greater understanding. On the contrary, the majority of the fourth and fifth grade teachers believed in the use of manipulatives only when students' learning styles required them. Although the upper elementary teachers believed in the importance of catering to students' individual learning styles in their approach to instruction, they also expressed the necessity of practice and repetition in the mastery of math skills (Correa, 2008).

A review of literature on teacher beliefs and practices concluded that the consistency with which teachers implemented classroom practices in accordance with their theoretical beliefs is variable (Fang, 1996). Many teachers viewed student behavior in the classroom from developmental, physical, or psychodynamic perspectives and, accordingly, attributed misbehavior to developmental stage, a physiological cause, or the student's underlying emotions (Skinner & Hales, 1992). This variability may stem from a variety of classroom or administrative variables, such as classroom management, differing student ability levels, or district mandates (Fang, 1996).

The review also revealed that many studies had either poor construct validity on the research measures or other methodological issues may have influenced the findings.

Constructivism. Many early elementary teachers approach education in their classrooms from a cognitive constructivist standpoint (Staub & Stern, 2002). Constructivism is defined and practiced in many different ways. In fact, stating a clear, descriptive definition of constructivism has proven to be frustrating and nearly impossible for researchers because the meaning of the term varies depending on who is defining it (Cobern, 1993; Jones & Southern, 2003). As an alternative, researchers have typically provided a vague definition followed by descriptions of the assortment of practices that have stemmed from the constructivist theory. One such vague definition found in the literature defined constructivism as a model to describe the phenomenon of learning (Cobern, 1993). Another definition explained constructivism as a philosophical system resting on the main belief that students construct their own learning in accordance with the changes in their cognitive schema at various developmental stages (Sandoval, 1996). A review of literature on constructivism also provided a summary of the concept, which emphasized the role of the teacher as facilitator and the importance of students' active engagement in the discovery of relationships and multiple solutions (Jones & Southern, 2003).

There were four major identifiable constructivist perspectives: Piagetian, Vygotsky's perspective, social, and holistic (Green, 2002). Two concepts were common to these four perspectives, which were that students are active learners constructing their own understanding and teachers must have expert level knowledge on the subject matter taught within the classroom. On the remaining requirements of constructivism, including goals, assumptions about learners, and essential teacher skills, the four major standpoints differ. Piagetian and Vygotsky's perspective share an emphasis on outcome goals, whereas social and holistic focus on process goals (Green, 2002). Piagetian, social, and holistic constructivism share the assumption that learners are self-aware and self-directed. These three perspectives also converge on the point that teachers must have expertise in continuous judgment of group interactions. The social

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constructivist perspective is distinctive in requiring teacher expertise in establishing classroom

discussion. The holistic perspective is unique in requiring the teacher to be responsible for

diagnosis of individuals' academic needs (Green, 2002). Across all variations, there were

identified weaknesses present in constructivist classrooms. The main disadvantage to the

constructivist approach was ineffectiveness for students with learning difficulties or impoverished

prior knowledge. More specifically, students with low ability and those from minority cultures or

low socioeconomic status environments are thought to have much more difficulty participating in

a constructivist classroom environment (Green, 2002).

Elementary teachers who strongly subscribed to constructivist teaching practices

presented more conceptual understanding tasks for learning basic mathematics than tasks

requiring factual knowledge or procedures (Staub & Stern, 2002). They also presented students

with more word problems. For third graders with cognitive constructivist teachers, this emphasis

on mathematical word problems resulted in higher achievement gains in word problems than the

gains seen in the classrooms of teachers who had less of a constructivist orientation. Even with

the constructivist teachers' emphasis on word problems, there were no differences in achievement

on factual arithmetic tasks between classrooms with a cognitive constructivist orientation and a

direct instruction orientation (Staub & Stern, 2002).

Direct instruction. Direct Instruction falls under the umbrella of instructivist approaches

to learning (Kozioff, 2000). Broadly, the instructivist approach dictates that teachers have two

main responsibilities. First, teachers use research on learning principles and instruction to design

lesson material and instructional strategies that match student competencies, needs and interests.

Second, they track student learning and/or behavior to assess progress and evaluate instruction.

More specifically, the term Direct Instruction refers to instructional procedures that focus on

teacher and classroom variables with an aim to increase students' academic achievement

(Gersten, 1985).

There are three underlying assumptions of the Direct Instruction Model (Engelmann, Becker, Carnine, & Gersten, 1988). The first is that all children can learn. The second is that learning basic skills and how to apply them to higher-order skills should be the main focus of education. The third assumption states that disadvantaged students need to be taught at a rate fast enough to catch them up with their more advantaged peers. Direct Instruction is explicit, teacher led, highly structured, and efficient (Engelmann, et al., 1988; Jones & Southern, 2003). Skills and concepts are integrated through use of generalizable strategies and sufficient review of previously learned material (Stein, 1998). Support is also ongoing throughout the learning process to ensure the student is practicing the newly acquired skills successfully (Magliaro, 2005). The Direct Instruction curriculum is specifically designed to increase academic teaching time, ensure the efficiency of teaching techniques, and increase teachers' expectations. New skills are learned to mastery, meaning the skill can be performed accurately and fluently (Kozioff, 2000).

In the 1960's and 1970's, a longitudinal study was conducted with low income students all around the United States (Kinder & Carnine, 1991). Several instructional approaches ranging from a Direct Instruction orientation to a constructivist orientation were compared based on short- and long-term academic gains. Direct Instruction was the only model to produce positive outcomes across academic areas consistently, both in basic and higher-order skills (Engelmann, et al., 1988). In fact, the students who received Direct Instruction made significantly better initial academic gains than did students who received any of the other approaches (Kinder & Carnine, 1991). Moreover, the academic advantages of the children who received Direct Instruction were maintained in follow-ups three and eight years later. In addition, at the final follow-up the Direct Instruction students were found to have higher rates of college acceptance than the students who received the other approaches (Kinder & Carnine, 1991).

Economically disadvantaged general education students were not the only population shown to benefit from Direct Instruction techniques. A review of six studies concluded that

Direct Instruction was also the most effective approach for increasing the academic skills of children in special education (Gersten, 1985). In fact, Direct Instruction was effective for students with disabilities ranging from mild to severe in the areas of reading, math, language, and daily living skills (Kinder & Carnine, 1991). Students with mild disabilities receiving Direct Instruction have also been shown to acquire and master skills at higher levels of difficulty than students receiving instruction from other approaches.

If a student is failing to acquire a new skill, it can be deduced that the teacher is not effectively adapting the curriculum to the student's needs or else the teacher is not implementing the curriculum with integrity due to insufficient training or support (Kozioff, 2000; Stein, 1998). In rare cases the ineffectiveness may be attributable to the curriculum. However, there is a large body of research demonstrating the effectiveness of various Direct Instruction curricula (Engelmann, et al., 1988; Gersten, 1985; Kozioff, 2000; Magliaro, 2005; Stein, 1998).

When students were learning skills specifically related to the scientific method, the Direct Instruction approach produced significant gains in student performance on short-term assessments (Dean, 2006; Klahr & Nigam, 2004). On long-term assessments, however, Direct Instruction alone did not give students a performance advantage (Dean, 2006). Rather, the groups that received weekly practice with or without Direct Instruction had the best performance and the best generalization on delayed assessments.

The incorporation of behavioral instruction practices, academic assessment strategies, and instructional programs in teacher training has been limited (Begeny, 2006). In fact, students in elementary, secondary, and special education master's degree training programs reported little didactic or experiential exposure to behavioral instruction practices. Moreover, elementary and secondary education students reported even less training and exposure to academic assessment and instructional programs, such as Direct Instruction. On the other hand, special education teachers-in-training reported receiving training in academic assessment strategies like curriculum based assessment (Begeny, 2006). The reason for this lack of exposure may be associated with

misconceptions of the term Direct Instruction, which in turn may have led to more negative attitudes toward the approach. Indeed, teachers with more positive attitudes toward Direct Instruction were also knowledgeable about the components of the approach and a possessed an understanding of the term beyond "drill and kill" (Demant, 2003). Furthermore, teachers with more experience rated Direct Instruction more favorably.

Teachers at Direct Instruction schools indicated distinct agreement with statements aligned with the Direct Instruction approach to teaching (Snider, 2006). For example, nearly all of the teachers agreed that curriculum programs must be well designed and include explicit and systematic teaching practices to optimize student learning. Moreover, they favored education, training, and research in the development of professional skills. The Direct Instruction teachers also indicated belief that all students can learn and student success and motivation are maximized by grouping students according to ability and skill level. In addition to supporting statements aligned with Direct Instruction, teachers in Direct Instruction schools indicated low levels of support for non-research-based classroom issues commonly supported by conventional teachers, including the relevance or importance of learning styles, eclectic instruction and small class size on student achievement (Snider, 2006).

Consultation and Teacher Beliefs

The consultation process has been more effective and efficient when differences between consultants and consultees have been reduced. Indeed, whether the consultee agrees with what the consultant is communicating predicted ratings of consultant effectiveness (Busse, et al., 1999). In effort to reduce differences, modification of several variables has been studied, including consultee training in behavioral principles, increased consultant awareness of differences, modification of the language used by the consultant, and increased consultant willingness to allow consultees to adapt recommended procedures to their classrooms (Skinner & Hales, 1992). One study matched rationale for an intervention with the teacher's previously reported beliefs about problem definition, problem origin, and his or her own theory of change in

order to influence acceptability of the intervention (Conoley, 1991). Results indicated that matching the rationale with the teacher's beliefs increased the teacher's acceptance of the intervention compared to a mismatched rationale. Thus, gathering information about the teacher's views of the problem, the child, and possible solutions were of the most importance as opposed to focusing solely on the behavioral consultation approach of using the teacher interview to define the problem (Conoley, 1991). Accordingly then, modification of the consultant's language to match the teachers' beliefs is an important tool for consultation success. Teacher beliefs seem to fall on a continuum with Direct Instruction and constructivism forming the dichotomy within educational theory. The constructivist perspective is based upon the language of cognitive psychology and Direct Instruction uses the language of behavioral psychology (Jones & Southern, 2003). Behavioral jargon includes terms such as operant conditioning, control, appropriate/inappropriate, reinforcement/punishment procedures, reinforcers, contingency, opportunity to respond, and probability (Hyatt & Tingstrom, 1993). Conversely, vocabulary that is associated more often with a constructivist approach includes words such as plan, habit, teach, more/less likely, correct, technique, cause, reward, and learn.

An effort to adapt consultation, specifically consultee-centered consultation, to the constructivist perspective has begun within the literature (Sandoval, 1996). The specific guidelines for consultation from a constructivist perspective were similar to the descriptions of constructivist classrooms and included the need for the consultee to be an active participant and for both the consultant and the consultee to participate in a collaborative discovery and construction of new understandings. In this type of consultation, Sandoval (1996) asserted that two main outcomes may determine success. First, the consultee would learn a productive way to serve the current client. Second, the consultee would gain the knowledge and skills to address future students with similar needs. The final solution for the target concern could either be suggested by the consultant, the consultee, or generated by a collaborative construction (Sandoval, 1996).

Sandoval (1996) also emphasized that in consultation from a constructivist framework, it is important in for the school psychologist to learn about the teacher's classroom activities and goals. According to Green (2002), that information, in conjunction with knowledge of the types of constructivism, can help identify potential problems within the classroom. Some evidence-based strategies that may be useful include interventions that target student effort, motivation, and other positive classroom behaviors (errorless learning, goal setting, self-monitoring, etc.) (Green, 2002). Observation specifically noting whether the child is able to participate in activities and meet classroom expectations (e.g., group discussion or self-regulation) seems congruent with both constructivist beliefs and traditional best practices, which call for observation to assist in ruling out lack of instruction as a cause for academic problems. In addition, constructivists place importance on assessing and acknowledging students' strengths and interests, which is also typically inquired about in behavioral interviews conducted by the school psychologist (Green, 2002). Preliminary results indicated several factors that appear to be critical to the success of consultation from a constructivist framework (Truscott, 2004). These factors include choice, control, collaboration, and contextual validity. In summary, the literature has described four types of constructivism and highlighted some evidence-based practices in intervention, consultation, and assessment that correspond to important ideas in a constructivist framework (Green, 2002).

Purpose and Hypotheses

Previous studies have demonstrated the effect of language, or terminology, on intervention acceptability and, therefore, on reports of effectiveness (Hyatt & Tingstrom, 1993; Rhoades & Kratochwill, 1992; Witt, 1986; Witt, Moe, et al., 1984). Additionally, effects of perceptions of intervention effectiveness on acceptability have been shown (Elliott, 1988; Pisecco, et al., 2001; Tingstrom, et al., 1989). The current study was designed to not only expand on previous research examining the effect of terminology used in consultation on ratings of intervention acceptability, but to investigate the effects of terminology on judgments of outcome

and teacher willingness to implement. In other words, this study attempted to determine if the manipulation of key terms in an intervention description had an effect on judgment accuracy of objective outcome data and teacher willingness to invest time and effort in learning to implement an intervention.

Consistent with the outcome in Witt (1986), teachers in this study were expected to report higher ratings of intervention acceptability after reading the intervention descriptions with constructivist key terms than after reading the behavioral vignettes. In fact, teachers who received constructivist vignettes, regardless of whether they were paired with successful or unsuccessful outcome data, were hypothesized to report greater intervention acceptability than teachers who viewed behavioral vignettes. Additionally, consistent with previous findings that ratings of intervention effectiveness were positively associated with intervention acceptability (Elliott, 1988; Pisecco, et al., 2001; Tingstrom, et al., 1989), it was hypothesized that teachers who indicated high levels of intervention acceptability would also evaluate the outcome data as successful. In other words, teachers who received constructivist vignettes were expected to evaluate the outcome data as successful, regardless of whether the graphical outcome data indicated improvement or not. Thus, participants who read behavioral intervention descriptions were hypothesized to evaluate the outcome data more accurately while those who read constructivist descriptions were expected to rate all outcome data as successful even if their answers were inconsistent with the graph of the data. Consistent with Amato Zech and colleagues (2006) and Jones & Lungaro (2000), teacher willingness to use the intervention was expected to be positively associated with intervention acceptability ratings. That is, because teachers were expected to rate the constructivist intervention description as more acceptable than the behavioral description, teachers were also expected to be more willing to implement the intervention after reading the constructivist description than after reading the behavioral intervention description.

Secondarily, the current study explored differences on dependent variables between teachers with Direct Instruction, constructivist, and combination beliefs and instructional styles. In congruence with the results of Baumann et al. (1998), a large number of teachers in this study were expected to score highly on both scales of the modified TORS, indicating an eclectic approach to instruction. More distinctively, in line with the viewpoints of Begeny (2006) and Cobern (1993), most of the participants were expected to score high on the constructivist scale, with more variation in the level of endorsement on the direct instruction scale. In other words, the majority of the teachers were expected to fall into either constructivist or combination orientation. This project also recognized the lack of emphasis and clarity in teacher training programs on theoretical foundations for teaching styles and the alignment of classroom and instructional strategies (Begeny, 2006; Skinner & Hales, 1992; Snider & Schumitsch, 2006). What is more, Pinnegar & Carter's (1990) findings suggested that teachers' self-reported teaching style was expected to be incongruent with their orientation. Thus, an additional secondary purpose of this study was to determine whether teachers' self-reported teaching approaches matched their scores on the modified TORS, indicating a match between their teaching beliefs and self-reported teaching style. Teachers' self-reported teaching style was not expected to match the set of teaching beliefs they endorsed on the modified TORS.

CHAPTER III

Method

Participant Recruitment and Sampling Procedures

The sample for this study included 75 elementary teachers from six school districts in central Iowa (64 women, 11 men, M_{age} = 42.8 years, SD = 11.8). Participants currently teaching grades pre-kindergarten through sixth were recruited through email invitation to participate in the study (see Table 1, for demographics). The email invitations were sent to teachers' individual district email addresses and data was collected via online surveys. Participation was voluntary, however a chance to win one of three cash prizes of ten dollars each was offered to participants. Survey invitations were sent to a total of 249 teachers and 101 (40.6%) responded by completing all or part of the questionnaires. Of the 101 teachers who began the study questionnaires, 75 (74.3%) answered nearly every question to complete the study. Ethical approval was obtained from the Institutional Review Board at Oklahoma State University and the comparable research review board at the area education agency in Iowa. The purpose and goals of the study, the intended use of the information, and the expectations of the subjects was outlined in a participant information sheet that each participant viewed prior to beginning the survey.

Materials

A brief demographics questionnaire was created for this study. Questions of age, gender, race, current grade taught, number of years spent teaching, number of years taught in current building, and level of education completed were included.

Table 1

Participant Characteristics

Item	Response	*n*	%
Gender	Female	64	85.3
	Male	11	14.7
Race	White	74	98.7
	Native American	1	1.3
Type of class	General Education	54	72
	Special Education	21	28
Grade	Lower elementary (pre-K - 3rd)	24	32
	Upper elementary (4th - 6th)	23	30.1
	Multiple grades	28	37.3
Years of experience	0-4	5	6.7
	5-10	26	34.7
	11-20	20	26.7
	21-30	20	26.7
	31-40	4	5.3
Years in current building	0-4	32	42.7
	5-10	20	26.7
	11-20	14	18.7
	21-30	7	9.3
	31-40	2	2.7
One building for duration of career		10	13.3
Highest level of education	Bachelor's degree	16	21.3
	Some graduate	14	18.7
	Master's degree	45	60

Modified teacher orientation rating scale. A modification of the Teacher Orientation
Rating Scale (TORS) was used in the current study. The original TORS was a survey made up of
items reflecting teacher beliefs to assess the degree to which those beliefs align with the
principles of constructivism, Direct Instruction, both, or neither (Snider, 2006). The scale
consisted of 14 pairs of statements presented in a semi-forced choice format to prevent agreement
with both direct instruction belief statements and constructivist belief statements. The belief
statement pairs presented were mutually exclusive so the respondents had to ally either with the
constructivist, Direct Instruction, or balanced belief statements. The survey items were also
counterbalanced to protect against patterned responding. Participants were asked to circle 1 or 2
to represent their degree of agreement with the statement on the left and 4 or 5 to denote

agreement with the statement on the right. Circling option 1 or 5 indicated the statement is "exactly what I believe," while circling 2 or 4 represented "somewhat like what I believe". There was also a middle option, circling 3, to indicate "I'm balanced between these beliefs" (Snider & Schumitsch, 2006).

In an effort to permit variation in teacher beliefs for meaningful analysis of the data, two important modifications were made to the TORS for the current study. First, the 14 item pairs were separated into 28 separate belief statements to allow participants to respond to each statement independently. The statements were placed in a semi-random order, ensuring statement counterparts were not placed adjacent to one another. These modifications changed the TORS scale into two scales, a direct instruction scale and a constructivist scale. Second, the answer choices were changed to fit a 5-point Likert scale ranging from 1, which represented "not at all what I believe" to 5, indicating "exactly what I believe". These modifications were made to more accurately capture the range of teacher beliefs. The mutually exclusive statement pairs in the original TORS may have forced participants into false categories, which were labeled constructivist and direct instruction. The modified TORS allowed teacher participants to endorse mainly constructivist belief statements, direct instruction belief statements, both types of belief statements, or no belief statements.

Intervention Rating Profile. The Intervention Rating Profile (IRP) was used to assess intervention acceptability. The IRP is made up of 20 statements, which participants rate on a 6-point Likert scale ranging from "strongly disagree" to "strongly agree". The resultant scores range from 20 to 120, with higher scores corresponding to greater intervention acceptability. The IRP has been shown to be sensitive to the presence of several factors that influence teachers' perceptions of interventions and has demonstrated reliability and validity (Witt, Elliott, et al., 1984; Witt & Martens, 1983). In fact, the IRP has been shown to have reliability as high as .98 (Martens, et al., 1985; Witt, Elliott, et al., 1984).

Written vignettes. Two versions of a written vignette were created to construct the two language conditions of the study. The written vignettes described a school psychologist explaining the details of an academic intervention to a teacher with graphical outcome data from the implementation of that intervention. The two versions differed in the terms used to describe the intervention. One vignette described the intervention and results in language characteristic of a behavioral approach while the second vignette described the intervention and results in language characteristic of a constructivist approach (see Table 2, for corresponding terminology). The behavioral description contained words and phrases (e.g., positive reinforcement, explicit timing, drill practice, etc.) that represented behavioral or Direct Instruction terminology (Hyatt & Tingstrom, 1993). Because there is such variation in how constructivist principles are interpreted and applied, there was no one set of key words to be used for the vignette description. Thus, the constructivist scenario words and phrases (e.g., discovery of concepts, engaging intrinsic motivation, self-esteem enrichment, etc.) were developed to correspond with the behavioral key words used and align with terms used in constructivist perspectives (Green 2002; Jones & Southern, 2003). The terms used for each of the vignettes were reviewed and approved by professionals with expertise in educational psychology research.

Additionally, a written script of the intervention video was included with the vignette. The video script was made available in to prevent technological difficulties from impeding a participant's ability to complete the survey. The intervention components were labeled in the written script to mirror the timing of when the terms were presented in the video.

Table 2

Corresponding Vignette Terminology

Behavioral	Constructivist
Fluency	Responsibility for learning
Facts	Strategies
Drill practice	Discovery of math concepts
Explicit timing	Engaging intrinsic motivation
Positive reinforcement	Self-esteem enrichment

Exemplar Video Clips. To minimize inference in the interpretation of the terms used to

describe the intervention, the written vignettes were paired with brief videos for this study. The

video showed an adult implementing a math fluency intervention with a student in order to

provide a visual for the behavioral or constructivist terms in the written vignette. One video was

recorded for this study and then the key terms from the behavioral and constructivist vignettes

were added to the corresponding screen shots depicting each term to create two versions of the

video (see Table 2, for terminology used). The typewritten labels connected the terms from the

vignettes with the visual exemplars. For example, the scene when the adult gives the student a

sticker for beating his previous score was accompanied by the term, "positive reinforcement" for

the behavioral vignette or "encouragement of active learning" for the constructivist vignette. The

interventionist and student actor in the videos were the primary researcher and an elementary age

child whose parent gave consent for him to appear in the video.

Graphical data. The written vignettes concluded with a statement that, according to the

outcome data, the intervention was either effective or ineffective. Participants were also

presented a line graph depicting the fictional intervention outcome data. That is, two versions of

a line graph were created for this study. One graph showed the results of the intervention as

successful, or effective, with data points in a positive linear pattern. The other graph depicted the

results as unsuccessful, or ineffective, with the data points remaining at the same level over time.

Intervention questions. The written vignette and video clips were followed by a few

yes/no dichotomous questions to determine participants' assessment of the intervention. The first

question established whether the participant had ever used an intervention similar to the one

described in the vignette. The second question assessed willingness to implement the

intervention by asking whether the participant would like to sign up for a brief follow-up training

session to learn to implement the intervention described in the vignette. Three additional items

were included to measure teachers' accuracy of intervention outcome interpretation: (1) Did the

skill improve?; (2) Were the goals of the intervention accomplished?; and (3) Did the student function better? Responses from the three dichotomous measures of teachers' judgment of intervention outcomes were totaled to reflect the accuracy of teacher responses to each of these questions. This was accomplished by evaluating the response to each question as accurate or inaccurate based on the information provided within each condition. A response was considered accurate if it matched the data presented on the outcome graph the teacher viewed. Each accurate response was assigned one point.

      Orientation question. Participants were asked one final question to determine whether they reported their teaching orientation to be constructivist, direct instruction, a combination of the two, or unsure. Each participant's answer to this question was compared to the score she or he received on the modified TORS to determine whether there was a match between reported orientation and the pattern of responding.

Procedure

      School district and building administrators were contacted via email, given a brief explanation of the purpose and procedures of the study, and asked to grant permission to contact elementary teachers via email with the survey link. Elementary school teachers in participating buildings received an email explaining the purpose of this study and were asked to volunteer to participate by clicking on a hyperlink and completing a survey estimated to take about 10 minutes. Each email also included an incentive offer indicating a chance for each participant to win one of three ten-dollar cash prizes. The teachers who clicked on the survey link were presented with a participant information sheet to read and those who agreed to participate were directed to the first page of the online survey. All participants began the survey by completing the demographic questionnaire and modified Teacher Orientation Rating Scale (TORS). Following the final question of the modified TORS participants viewed one of the four vignette conditions. Four survey versions were created, each containing one of the four vignette conditions, and each email invitation contained a link to one version of the survey. Participants

were randomly assigned to the vignette conditions. The vignette page of the online survey consisted of the written description of the intervention, the matching version of the video embedded on the page, and a graph of the fictional outcome data. In other words, there were an equal number of participants assigned to the vignette with behavioral terminology and effective outcome data, behavioral terminology and ineffective outcome data, constructivist terminology and effective outcome data, and constructivist terminology with ineffective outcome data. All participants then completed the IRP, answered three intervention effectiveness questions, answered two questions about intervention implementation, and indicated teaching orientation. At the conclusion of the survey questions, participants were thanked for contributing their responses to the study and viewed a debriefing statement about the nonexistence of a follow-up intervention training session. They were also presented with details of how to participate in the incentive offer. In order to ensure that their names would not be connected to their responses, participants were directed to send an email containing first and last name and school building information to an email address created by the researcher for this study. Three participants were randomly selected to receive one of the three ten-dollar cash prizes, which were delivered to the appropriate schools and placed in the teachers' mailboxes.

Research Design and Experimental Conditions

The effects of the independent variables were evaluated using a 2 x 2 factorial design and analyses. Consultant language (behavioral vs. constructivist) and intervention outcome (successful vs. unsuccessful) were independent variables. Teacher judgments of intervention acceptability, judgments of the intervention outcome data, and willingness to implement the intervention were separate dependent variables. A written vignette described a math fluency intervention paired with a line graph of outcome data, which constructed the combinations of the independent variables. The combinations were presented in equal numbers to teacher participants. The vignettes varied the terminology used to describe characteristics of the intervention (behavioral vs. constructivist) and the line graphs varied the pattern of intervention

outcome data (effective vs. ineffective). Each of the four vignettes was identical with the

exceptions of the written terminology (key words) typed in bold font to emphasize the features of

the intervention, the corresponding version of the video, and the graph of outcome data. The

combination of these variables resulted in the four experimental groups (behavioral/successful,

behavioral/unsuccessful, constructivist/successful and constructivist/unsuccessful).

CHAPTER IV

Results

Thirty-six (48.0%) participants completed questionnaires with behavioral terminology in
the vignette, which slightly less than the 39 (52.0%) participants who completed questionnaires
with constructivist terminology in the vignette. Thirty-eight (50.7%) participants viewed
successful outcome data within the vignette, which was equal to the 37 (49.3%) participants who
saw unsuccessful outcome data.

Reliability of Instruments

Modified Teacher Orientation Rating Scale (TORS). For data analysis, the scores on
the modified TORS were examined. Half of the questions on the modified TORS signified
alignment with Direct Instruction, or behavioral, teaching beliefs and the other half denoted
agreement with a constructivist orientation, creating two subscales with 14 items each. The
Likert scale responses to the questions on each scale were summed to yield two numeric total
scores, one for the constructivist subscale and one for the direct instruction subscale. The
teachers' orientations were classified based on the scores for each subscale. Participant scores
that were high on the constructivist scale (43-70) and low on the direct instruction scale (14-42)
were placed in the constructivist orientation group, while participants high on the direct
instruction scale (43-70) and low on the constructivist scale (14-42) were placed in the direct
instruction orientation group. Participants who scored high on both constructivist and direct
instruction scales were placed in the combination group. According to these scoring guidelines,

one (1.3%) teacher was placed in the direct instruction group, 21 (28%) were labeled

constructivist, and 53 (70.7%) scored high on both scales to compose the combination group.

Cronbach's alpha for the direct instruction and constructivist subscales was .55 and .18,

respectively, indicating poor reliability for both subscales. An item-by-item analysis was

performed to determine whether coefficient alpha could have been improved by removing items.

The deletion of single items on either scale would not have improved reliability.

> **Intervention Rating Profile for Teachers (IRP).** A preliminary analysis of the IRP was

conducted using the data from the current sample to determine whether the reliability of the scale

was consistent with previously reported psychometric qualities and whether the IRP could be

used with confidence in the current study. The IRP consisted of 20 items and Cronbach's alpha

for the total scale was .96, which indicates acceptable reliability consistent with previous

literature. A total score was calculated for each participant by summing the raw scores for each

item. High scores on the IRP indicate high acceptability while low scores indicate low

acceptability. The range of possible scores is 20 to 120. The total mean score on the IRP was

68.13, $SD = 20.33$.

> **Judgments of outcome data.** The three items designed to evaluate intervention outcome

were used to examine the teachers' judgments of the intervention outcome data presented in the

study: (a) Did the behavior improve?, (b) Were the goals of the intervention accomplished?, and

(c) Did the student function better? The score on each of these items was then recoded to reflect

the accuracy of the teachers' responses to each of these questions. The response to each question

was coded as accurate or inaccurate according to the graphical outcome data in the experimental

condition to which the participant was exposed. Thus, the item response was coded accurate if it

corresponded with the level of intervention effectiveness presented in the vignette. For example,

participant responses to each of the questions when exposed to the successful outcome vignettes

were considered accurate if they indicated "Yes" to each of the three questions and considered

inaccurate if they indicated "No". Participants were given a total accuracy score ranging from

completely inaccurate (0) to completely accurate (3). Cronbach's alpha for the three recoded

judgment accuracy items was .96, indicating acceptable reliability. This result indicates the three

questions designed to examine judgments of outcome data were measuring a single factor.

Effects of Terminology and Outcome Data

First, the hypothesis that teachers would report higher ratings of acceptability after

reading an intervention description with constructivist terminology than one with behavioral

terminology was examined. A univariate analysis of variance was conducted to test for

significant differences between independent variable means on intervention acceptability. The

effect of terminology on intervention acceptability was not significant, $F(1, 75) = 2.71$, $p = .104$,

$\eta_p^2 = .037$. The mean acceptability score of the participants who read a constructivist intervention

description was 64.87, $SD = 21.19$, while the mean for those who read the behavioral description

was 71.67, $SD = 19.01$. On the other hand, the main effect of the second independent variable,

outcome data, was significant, $F(1, 75) = 14.07$, $p < .001$, $\eta_p^2 = .165$. The mean acceptability

score of the teachers who viewed the successful outcome data condition was 76.11, $SD = 18.12$,

while the mean for those who saw the unsuccessful condition was 59.95, $SD = 19.39$. In other

words, the participants who viewed the graph of successful outcome data rated the intervention as

more acceptable than those who viewed the graph of unsuccessful outcome data. The

terminology by outcome data interaction was not significant, $F(1, 75) = 1.058$, $p = .307$, $\eta_p^2 =$

.015.

Next, the hypothesis that teachers who received behavioral vignettes would evaluate the

outcome data accurately, while those who read the constructivist intervention descriptions would

evaluate outcome data as successful, regardless of the accuracy of the judgment, was tested.

Overall, 63 teachers (84.0%) answered all three outcome evaluation questions accurately. Two

(2.7%) teachers answered one question accurately, one (1.3%) answered 2 questions correctly,

and nine (12.0%) teachers answered none of the questions accurately. Due to the lack of variance

in the responses, this variable was not included in the analysis. Of the teachers who received a

constructivist vignette, 33 (84.6%) answered all three outcome questions accurately, one (2.6%) answered only one of the three questions correctly, and five (12.8%) answered none of the questions correctly. Results were similar for the teachers who received the behavioral vignettes, as 30 (83.3%) answered all three outcome questions accurately, one (2.8%) answered only two of the three questions accurately, one (2.8%) answered only one of the three questions correctly, and four (11.1%) answered none of the questions correctly.

Subsequently, the hypothesis that teachers who reviewed constructivist interventions would be more likely to report willingness to implement the intervention than those who read behavioral intervention descriptions was investigated. In response to the one item asking whether the participant had ever used an intervention similar to the one described in the vignette, 43 (57.3%) participants answered yes, while 32 (42.7%) indicated that they had not used a similar intervention. Willingness to implement the intervention was measured by one dichotomous item about whether the participant would like to attend a brief training session to learn more about the intervention. Overall, four (5.3%) teachers indicated they were willing to attend the training, while 71 (94.7%) teachers were not willing to attend. This variable was excluded from the analysis due to a lack of variance in the responses.

Teacher Orientation and Teaching Style

Secondarily, the hypothesis that the majority of teacher participants would score high on both the constructivist and direct instruction subscales of the modified TORS, with nearly all teachers scoring high on the constructivist subscale was examined. In fact, 53 (70.7%) participants scored high on both subscales of the modified TORS, placing them in the combination group. Twenty-one (28.0%) teachers scored in the high range on the constructivist subscale only while just one (1.3%) teacher scored in the high range on the direct instruction subscale only. In other words, 99% of teachers endorsed the majority of the items on the constructivist scale. Additionally, the hypothesis that teachers' self-reported teaching style would not match the frequency statistics for the orientation scores was investigated. In response to one

item created to determine the participants' self-reported teaching style, four (5.3%) teachers indicated alignment with the constructivist teaching style, 19 (25.3%) reported following the Direct Instruction approach, 48 (64%) endorsed a constructivist/Direct Instruction combination, and 4 (5.3%) were unsure. Thus, the results indicated a different distribution within the Direct Instruction and constructivist categories, though overall the majority still identified with the combination approach, consistent with the results on the modified TORS.

Beyond the frequency statistics, an independent samples t-test was used to compare the mean scores of the participants assigned to the constructivist and combination groups, according to the modified TORS, on intervention acceptability. There was no significant difference on acceptability scores between the two groups, $t(72) = .258$, $p = .797$. The mean acceptability score for teachers in the constructivist group was 68.95, $SD = 16.43$, while the mean score for teachers in the combination group was 67.58, $SD = 21.93$. An additional independent samples t-test was conducted to compare the intervention acceptability ratings of teachers who reported using a Direct Instruction teaching style and those who indicated using constructivist/direct instruction combination teaching style. There was a significant difference between the two groups, $t(65) = 2.055$, $p = .044$. The mean acceptability score for teachers who reported using the Direct Instruction style was 76.84, $SD = 18.06$, while the mean score for teachers using a combination approach was 65.5, $SD = 21.18$. In other words, regardless of terminology, the participants who reported teaching with a Direct Instruction approach rated the intervention as more acceptable than those who reported teaching with a combination of Direct Instruction and constructivist style.

CHAPTER V

Discussion

The purpose of this research was to not only expand on previous research examining the

effect of terminology used in consultation on ratings of intervention acceptability, but to

investigate the effects of terminology on accuracy of outcome judgments and teacher willingness

to invest time and effort in learning to implement. Additionally, the current study examined

teaching orientation and self-reported teaching style. Previous studies have explored the effects

of consultant terminology, intervention acceptability, intervention effectiveness, intervention

implementation, and teacher beliefs. However, no study reviewed has examined all of these

variables together, manipulated outcome data to examine accuracy of judgments of intervention

effectiveness, or measured willingness to implement by suggesting an actual commitment.

Additionally, this study uniquely contributes to the literature by exploring teacher beliefs as

indicated on a rating scale, self-reported teaching style, and the degree of match between the two.

The results indicated that the effect of the manipulation of terminology on ratings of

intervention acceptability was not significant, which was inconsistent with the outcome in Witt

(1986). According to Busse and colleagues (1999), efficiency of communication was associated

with positive treatment outcome ratings. Thus, the terminology with which teachers were

proficient would have been expected to be associated with higher intervention acceptability

ratings. Indeed, it may be that the sample of teachers surveyed in this study were experienced

and comfortable with both behavioral and constructivist terminology. Behavioral terms are

commonly used within Response to Intervention (RtI) framework and in communication between

teachers and area education agency (AEA) consultants, including school psychologists. On the other hand, constructivist terms are commonly used in teacher education programs (Begeny, 2006). Constructivist terminology also fits with popular ideas in society.

The effect of the manipulation of outcome data on teacher ratings of intervention acceptability indicated that acceptability was higher when teachers viewed a graph of successful outcome data than when they saw a graph of unsuccessful outcome data. This finding was consistent with results of previous literature (Elliott, 1988; Pisecco, et al., 2001; Tingstrom, et al., 1989). That is, the participants in this study relied on the graphical outcome data when rating the acceptability of the intervention. Moreover, the outcome data had a larger impact on the teachers' ratings of acceptability than did the terminology used in the intervention description.

The results indicated that the effect of the manipulation of terminology on judgment accuracy and teacher willingness to implement an intervention could not be analyzed due to the lack of variance in the judgment and willingness variables. According to frequency data, the majority of teachers evaluated the outcome data accurately, regardless of the terminology used in the vignette. In other words, it seems the teachers' accuracy in reading graphs was not influenced by the key words used to describe the intervention. This level of accuracy was consistent with Noell and colleagues (1999), in which teacher ratings of intervention outcomes were similar to school psychologist consultant ratings. In addition, nearly all of the teachers declined attending a brief follow-up session to learn more about the intervention, indicating unwillingness to implement. One reason for the lack of willingness may have been that many of the teachers reported having used an intervention similar to the one described. Thus, those teachers likely did not think they needed to learn more about the intervention. Furthermore, the majority of school districts included in this project employ interventionists, meaning the teachers are not always the people responsible for implementing interventions. Alternatively, the resistance may have been due to perceived inconvenience related to the investment of time and effort, consistent with Martens and colleagues (1996).

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The results related to the secondary hypotheses showed that the direct instruction and constructivist subscales on the modified TORS had poor reliability, particularly the constructivist subscale, which indicated that each subscale was likely measuring more than one factor. In spite of the poor internal consistency, the main secondary hypothesis was supported. According to frequency data, the majority of the teachers who participated in this study endorsed teacher beliefs on both the constructivist and direct instruction subscales. Furthermore, nearly all participants scored highly on the constructivist scale while virtually no teachers scored highly on just the direct instruction subscale. These results are congruent with Snider (2006) and support the assertion that the constructivist items on the TORS are popular ideas in society, at least among teachers.

By separating the item pairs and removing the semi-forced choice continuum to create the modified TORS, this study revealed that the indecision teachers indicated on the TORS in the Snider (2006) study was likely due to the fact that they did not have a way to endorse both constructivist- and Direct Instruction-related items. Although some item pairs on the TORS represented antithetical ideas, many statement pairs were not mutually exclusive beliefs. For example, the belief that "ability grouping is inequitable and destructive to motivation" is the opposite of "ability grouping is necessary to foster success and motivation." On the other hand, "a great teacher cares about students and makes learning fun and interesting" is not incompatible with the paired statement, "a great teacher cares about students and produces high student achievement outcomes." Thus, it may be that some of the items on the modified TORS are more a measure of being a caring teacher or a compassionate person than a measure of theoretical beliefs. This explanation provides a reason as to why the scale reliability was so poor for the two subscales of the modified TORS, particularly the constructivist scale. What is more, the explanation clarifies why constructivist principles are popular in society, as Snider (2006) found.

The results associated with the additional secondary hypothesis indicated that, indeed, self-reported teaching style yielded different classification results than did the scores on the

modified TORS. The results were similar in that the majority of teachers identified a

constructivist/Direct Instruction combination teaching style; however, according to self-labeling,

fewer teachers are strictly constructivist, more teach from a Direct Instruction perspective, and a

few are unsure. Notably, when given the choice to indicate a combination approach or indecision

(unsure of approach), the overwhelming majority of teachers who participated in this study

indicated a combination approach. One explanation for this pattern of responding may have been

that the teachers truly believe in and teach according to the combination approach, which would

be inconsistent with the findings in Snider (2006). Alternatively, teachers may have chosen the

combination teaching style over the unsure option because choosing a style is a more desirable

response than indicating that one is unsure.

Additional results indicated that teacher ratings of intervention acceptability did not differ

according to teaching orientation, as determined by the responses on the modified TORS.

However, intervention acceptability did differ according to self-reported teaching style.

Interestingly, the teachers who reported a Direct Instruction approach rated the intervention as

more acceptable, regardless of the terminology, than those who reported a combination teaching

style. These results indicate that the style teachers believe they are using influenced their ratings

of intervention acceptability more so than the teaching beliefs they endorsed on the modified

TORS. In addition, these results are consistent with the finding in this study that the two

subscales on the modified TORS do not reliably measure the factors of constructivism and Direct

Instruction teaching orientation. An alternative explanation for the relationship between reported

teaching style and acceptability might be that manipulating the terminology used to describe the

intervention was not enough to mask the fact that the intervention components aligned with the

Direct Instruction approach. Consequently, the teachers who identified their style as adhering to

the Direct Instruction approach may have considered the intervention to be similar to their

instructional practices regardless of the terminology used to describe the intervention.

Limitations and Conclusions

As discussed previously, the internal consistency of the subscales on the modified TORS was poor. The poor reliability indicates that the teaching belief items on each subscale do not measure distinct constructs. Thus, the subscales may not measure or fully assess Direct Instruction and constructivist teaching orientations. Future studies examining teaching beliefs should utilize or develop a scale with acceptable reliability. Alternatively, direct observations of teachers in the classroom could be used to reliably identify teaching orientation.

The teachers who participated in this study worked in the Midwest within an area education agency (AEA) system with a long history of emphasizing data-based instructional decision-making, or RtI. The intervention used in the vignette was simple and focused on a narrow problem. The teachers in the AEA system are accustomed to complex interventions with strong instructional components and may have viewed the intervention used in this study as inadequate or incomplete. Future projects in this geographical region should consider depicting a more complex intervention with a clear instructional component.

In addition, the sample was not wholly representative of the general population in that the respondents were almost exclusively White and a high percentage had master's degrees. Thus, the results may only generalize to White, highly educated teachers in the Midwest. These sample characteristics may help explain findings incongruent with those in the existing literature. For example, perhaps the education level of the teachers in this study precluded finding an effect of terminology on the dependent variables. Although teacher education programs predominantly present constructivist-type instructional strategies, these teachers may have been better able to recognize the components of the intervention as coming from a Direct Instruction model. A broader, more representative sample of subjects should be used in order to be able to generalize the results to a larger population.

Based on the findings of this study, it appears that manipulating terminology does not impact intervention acceptability, but self-reported teaching style is associated with level of

acceptability. These results may be due to familiarity with behavioral terminology within the

AEA framework and constructivist terminology through teacher education programs. Although

the findings seem promising in light of the accepted and longstanding use of behavioral

terminology by consultants, they cannot be generalized to the population of elementary teachers

as a whole. Thus, awareness and education focused on research-based instructional practices may

still be needed for many teachers.

Future research should be conducted to further examine the relationship between teaching

beliefs on intervention acceptability and willingness to implement the intervention. The

intervention used in future projects should be complex and have a strong instructional component.

Additionally, direct observation of teachers in the classroom would be a more valid and reliable

method of assessing teaching orientation rather than self-report measures. Furthermore,

willingness to implement an intervention could be measured by asking participants to set up a

time for consultants to come into the classroom and model/teach the intervention. This method of

assessing willingness would reduce the inconvenience for the teacher while maintaining the

implied commitment level. If these results are replicated with a more representative sample and a

reliable measure of teacher orientation, perhaps the match between teacher and consultant

orientation is not as great a barrier as it seems as constructivist principles gain popularity in

education.

In summary, this project emphasized the importance of looking at the effect of

terminology used in consultation on ratings of intervention acceptability, accuracy of outcome

judgments and teacher willingness to invest time and effort in learning to implement. The

inconsistent effects of terminology in the literature may be indicative of the differences in

instructional practices and consultation in diverse educational systems. The Response to

Intervention (RtI) models that have been slowly permeating the way educators view student

progress are ultimately changing the field of education. Schools that are farther along in the

process of implementing RtI eventually realize that research-based and evidence-based

instructional practices are the most efficient and effective use of limited time and resources. Although this is the end goal, reducing differences between the consultant and consultee has been shown to impact the success of consultation. Overall, consultants must be able to work with the teachers where they are in the process while helping move the system forward to a more efficient, effective RtI model.

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APPENDIX A

DEMOGRAPHIC QUESTIONNAIRE

What is your age? _____

What is your gender?   Female   Male

Which group best describes your race?

                                             Hispanic/Latino

                                             Native American

                                             White

                                             Black/African American

                                             Asian

                                             Pacific Islander

                                             Other_____

What type of class do you teach? (circle one)

       General Education   Special Education

What grade do you teach? _____

How many years have you been a teacher? _____

How long have you taught in your current building? _____

What is the highest level of education that you have completed? (circle one)

       Some high school   Some graduate school
       High school graduate   Master's degree
       Some college   Doctorate
       College graduate

APPENDIX B

QUESTIONNAIRES

Revised Teacher Orientation Rating Scale

Read each statement and circle the answer that most closely matches your beliefs about teaching. Please read carefully and try to answer honestly without skipping any.

1. Following a prescriptive, but well-designed, curriculum provides the best opportunity for effective instruction.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

2. The concept of learning style has little relevance for deciding how and what to teach.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

3. Ability grouping is inequitable and destructive to motivation.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

4. There is no best way to teach all students; an eclectic or balanced approach to instruction is best.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

5. Small class size in the early grades is the primary factor leading to higher academic achievement.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

6. Teachers should teach directly, rather than just facilitate.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

7. Self-esteem impacts academic achievement.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe

1	2	3	4	5

8. Factors (e.g., home life, dyslexia) can prevent children from becoming functionally literate and mathematically competent, regardless of the school's best efforts.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

9. The best way to ensure success for all students is to teach critical skills and concepts directly and systematically.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

10. A great teacher cares about students and produces high student achievement outcomes.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

11. Accuracy and fluency in basic skills and factual knowledge form the foundation for conceptual understanding and critical thinking.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

12. Instruction should start with teacher modeling and guided practice followed by practice and review.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

13. Experience is more important than education and training for becoming an effective teacher.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

14. Individual learning styles should be an important factor in deciding how and what to teach.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

15. Small class size in the early grades is not the primary factor leading to higher academic achievement.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

16. Ability grouping is necessary to foster success and motivation.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

17. There is a best way to teach that will be effective with most students.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

18. Conceptual understanding and critical thinking should be emphasized even when students lack proficiency in basic skills or factual knowledge.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

19. The best way to ensure success for all students is to provide authentic learning experiences.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

20. Teaching is more of an art than a science.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

21. Instruction should be organized around meaningful activities and projects.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

22. All children (excluding those with severe disabilities) can become functionally literate and mathematically competent.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

23. Scientifically conducted research is the best guide for determining what and how to teach.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

24. Teachers should facilitate learning, rather than teach directly.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

25. Academic achievement impacts self-esteem.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

26. A great teacher cares about students and makes learning fun and interesting.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

27. Education and training are more important than experience for becoming an effective teacher.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

28. Following a prescriptive curriculum stifles teacher creativity and reduces student motivation.

Not at all what I believe	Somewhat different from what I believe	Not sure/Don't know	Somewhat like what I believe	Exactly what I believe
1	2	3	4	5

Intervention Rating Profile (IRP)

Directions: Thinking of the scenario you just read, please answer the following questions using a scale ranging from 1 (*Strongly Disagree*) to 6 (*Strongly Agree*).

1._____ Most teachers would find this approach to math instruction helpful for students with learning challenges.

2._____ Most teachers would find this instructional approach appropriate for various math problems.

3._____ The student's math problem is severe enough to warrant the use of this instructional approach.

4._____ This instructional approach should prove effective in helping the student with their math difficulties.

5._____ This would be an acceptable instructional approach for the student's math difficulties.

6._____ Overall, this type of instruction would be beneficial for the student.

7._____ I would be willing to use this instructional approach in the classroom.

8._____ This instructional approach would be appropriate to use before making a referral.

9._____ This instructional approach would not negatively affect a student's math performance.

10.____ This instructional approach would not result in risk to the student.

11.____ This instructional approach would not be considered a last resort.

12.____ This instructional approach is practical in the amount of time required for parents who may assist the student in their math assignments.

13.____ This instructional approach is practical in the amount of time required for teachers.

14.____ This instructional approach is appropriate in the amount of time necessary for a teacher to record the student's progress.

15.____ This instructional approach is practical in the amount of out-of-school time required for the student to use the intervention.

16.____ This instructional approach would not be difficult to implement in a classroom with 30 other students.

17.____ This instructional approach would not be disruptive to other students.

18.____ It would not be difficult to use this instructional approach and still meet the needs of other students.

19.____ Teachers are likely to use this instructional approach because of its simplicity.

20.____ Teachers are likely to use this instructional approach because of its ease of use.

Post Intervention Questions

Directions: Please think of the scenario that you read and answer the following questions.

1. Did the skill improve?   Yes / No

2. Were the goals of the intervention accomplished?   Yes / No

3. Did the student function better?   Yes / No

4. Have you ever implemented an intervention similar to this one in your classroom?   Yes / No

5. Would you like to attend a brief training session in the next few days (scheduled at your

   convenience) to learn to implement this intervention?   Yes / No

6. Which option most closely matches the teaching style you use in your classroom? (circle one)

      Constructivist

      Direct Instruction

      Constructivist/Direct Instruction Combination

      Unsure

APPENDIX C

VIGNETTES

Please read the following scenario:

A student was referred to the school psychologist because his/her math skills were well below grade level. After meeting with the classroom teacher and assessing the student's skills, the school psychologist designed a brief intervention to help the student increase **fluency** with basic math **facts**. The intervention focused on **drill practice, explicit timing,** and **positive reinforcement** to achieve this goal. The following short video will show the intervention.

Progress from the daily intervention was recorded and graphed to determine whether the student's math skills improved. Here is the graph of the intervention data collected over 10 sessions.

[Video]

If you had trouble hearing the audio, the following is an approximate script of the intervention with the components of the scenario labeled:
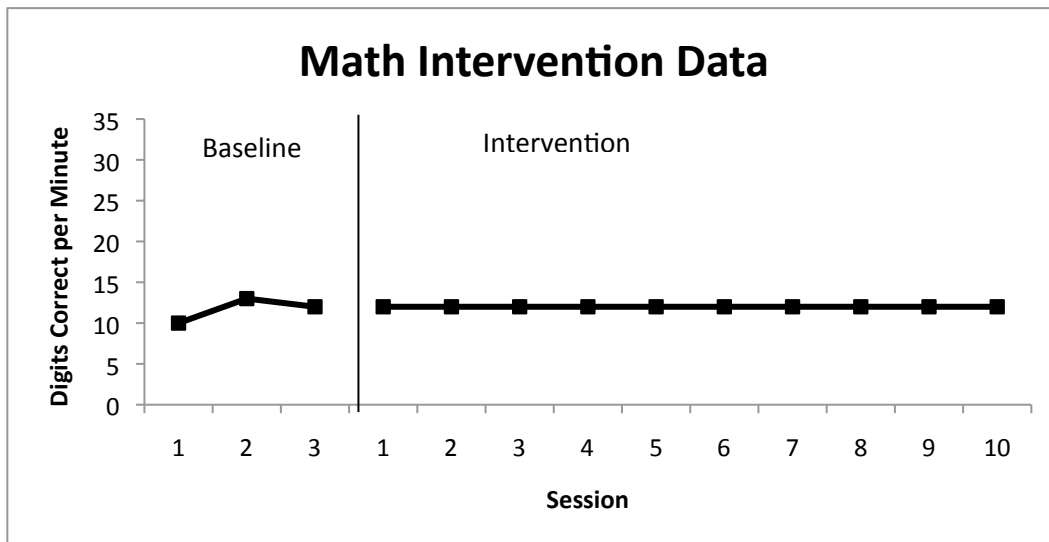
"This sheet has some addition problems on it. **[basic math facts]** When I say 'start,' turn the paper over and try to answer each problem. If you come to a problem you do not know the answer to you can skip it. You have two minutes to complete as many problems as you can." **[fluency]** "Ready? Start." **[timer = explicit timing]**

"Stop. Okay, let's see how you did. You scored 50 digits correct in two minutes! Great job! You beat your last score. **[drill practice]** You can pick out a sticker." **[positive reinforcement]**

Please read the following scenario:

A student was referred to the school psychologist because his/her math skills were well below grade level. After meeting with the classroom teacher and assessing the student's skills, the school psychologist designed a brief intervention to help the student increase **fluency** with basic math **facts**. The intervention focused on **drill practice, explicit timing,** and **positive reinforcement** to achieve this goal. The following short video will show the intervention.

Progress from the daily intervention was recorded and graphed to determine whether the student's math skills improved. Here is the graph of the intervention data collected over 10 sessions.

[Video]

If you had trouble hearing the audio, the following is an approximate script of the intervention with the components of the scenario labeled:
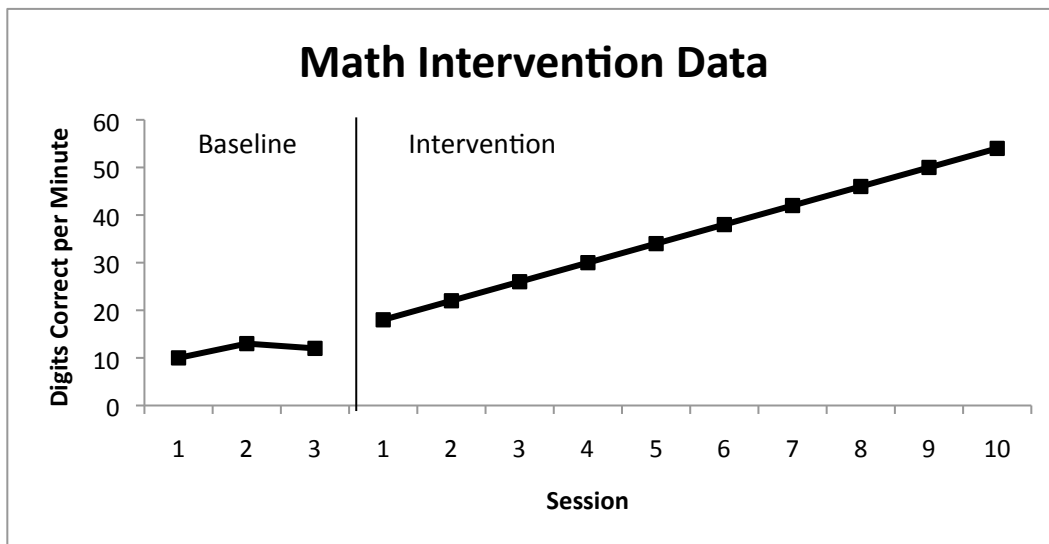
"This sheet has some addition problems on it. **[basic math facts]** When I say 'start,' turn the paper over and try to answer each problem. If you come to a problem you do not know the answer to you can skip it. You have two minutes to complete as many problems as you can." **[fluency]**
"Ready? Start." **[timer = explicit timing]**

"Stop. Okay, let's see how you did. You scored 50 digits correct in two minutes! Great job! You beat your last score. **[drill practice]** You can pick out a sticker." **[positive reinforcement]**

Please read the following scenario:

A student was referred to the school psychologist because his/her math skills were well below grade level. After meeting with the classroom teacher and assessing the student's skills, the school psychologist designed an intervention to help the student increase **responsibility for learning** basic math **strategies**. The intervention focused on **discovery of math concepts, engaging intrinsic motivation,** and **self-esteem enrichment** to achieve this goal. The following short video will show the intervention.

Progress from the daily intervention was recorded and graphed to determine whether the student's math skills improved. Here is the graph of the intervention data collected over 10 sessions.

[Video]

If you had trouble hearing the audio, the following is an approximate script of the intervention with the components labeled:

"This sheet has some addition problems on it. **[basic math strategies]** When I say 'start,' turn the paper over and try to answer each problem. If you come to a problem you do not know the answer to you can skip it. You have two minutes to co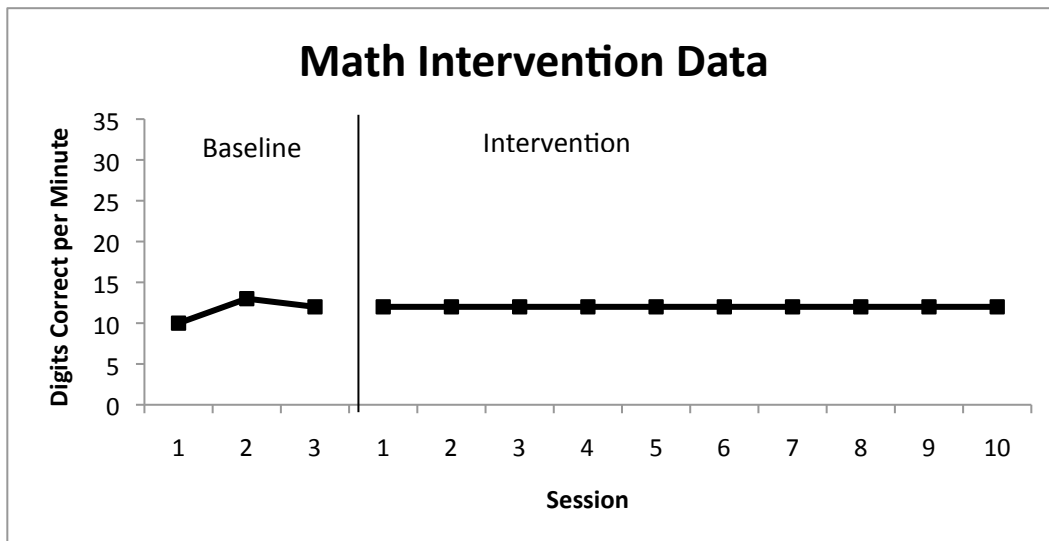mplete as many problems as you can." **[responsibility for learning]** "Ready? Start." [timer = **engaging intrinsic motivation**]

"Stop. Okay, let's see how you did. You scored 50 digits correct in two minutes! Great job! You beat your last score. **[discovery of math concepts]** You can pick out a sticker." **[self-esteem enrichment]**

Please read the following scenario:

A student was referred to the school psychologist because his/her math skills were well below grade level. After meeting with the classroom teacher and assessing the student's skills, the school psychologist designed an intervention to help the student increase **responsibility for learning** basic math **strategies**. The intervention focused on **discovery of math concepts, engaging intrinsic motivation,** and **self-esteem enrichment** to achieve this goal. The following short video will show the intervention.

Progress from the daily intervention was recorded and graphed to determine whether the student's math skills improved. Here is the graph of the intervention data collected over 10 sessions.

[Video]

If you had trouble hearing the audio, the following is an approximate script of the intervention with the components labeled:

"This sheet has some addition problems on it. **[basic math strategies]** When I say 'start,' turn the paper over and try to answer each problem. If you come to a problem you do not know the answer to you can skip it. You have two minutes to complete as many problems as you can." **[responsibility for learning]** "Ready? Start." [timer = **engaging intrinsic motivation**]

"Stop. Okay, let's see how you did. You scored 50 digits correct in two minutes! Great job! You beat your last score. **[discovery of math concepts]** You can pick out a sticker." **[self-esteem enrichment]**

APPENDIX D

INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

Oklahoma State University Institutional Review Board

Date: Thursday, November 17, 2011

IRB Application No   ED1092

Proposal Title: The Relationship between Teacher Orientation and the Language Used in Consultation Intervention Acceptability, Intervention Effectiveness and Willingness to Implement

Reviewed and   Exempt
Processed as:

Status Recommended by Reviewer(s): Approved   Protocol Expires: 11/16/2012

Principal
Investigator(s):
Robin Heuser   Terry Stinnett
12215 Florida Ave, #401   445 Willard
Ames, IA 50014   Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.
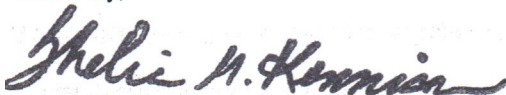
☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Shelia Kennison, Chair
Institutional Review Board

VITA

Robin Rachelle Heuser

Candidate for the Degree of

Doctor of Philosophy/Education

Thesis: THE RELATIONSHIP BETWEEN TEACHER ORIENTATION AND
CONSULTATION TERMINOLOGY, INTERVENTION ACCEPTABILITY,
EVALUATION OF EFFECTIVENESS, AND WILLINGNESS TO
IMPLEMENT

Major Field: Educational Psychology

Biographical:

Education:

Completed the requirements for the Doctor of Philosophy/Education in
Educational Psychology at Oklahoma State University, Stillwater, Oklahoma in
July 2012.

Completed the requirements for the Master of Science in Educational
Psychology at University of Utah, Salt Lake City, Utah in 2006.

Completed the requirements for the Bachelor of Science in Psychology at Iowa
State University, Ames, Iowa in 2003.

Experience:

Employed as a School Psychologist for Heartland Area Education Agency 11 in
Ames, Iowa (2011-2012).
Completed a School Psychology internship at Heartland Area Education
Agency 11 in Newton, Iowa (2010-2011).

Professional Memberships:

National Association of School Psychologists

Name: Robin Rachelle Heuser   Date of Degree: July, 2012

Institution: Oklahoma State University   Location: Stillwater, Oklahoma

Title of Study: THE RELATIONSHIP BETWEEN TEACHER ORIENTATION AND
CONSULTATION TERMINOLOGY, INTERVENTION
ACCEPTABILITY, EVALUATION OF EFFECTIVENESS, AND
WILLINGNESS TO IMPLEMENT

Pages in Study: 82   Candidate for the Degree of Doctor of Philosophy

Major Field: School Psychology

Scope and Method of Study: The current study was designed to expand on previous
research examining the effect of terminology on ratings of intervention
acceptability and to investigate the effects of terminology on judgments of
outcome data and willingness to implement. Secondarily, this study explored
teacher beliefs and instructional style. The sample for this study included 75
elementary (pre-K through 6th) teachers from six school districts in central Iowa
(64 women, 11 men, M_{age} = 42.8 years, SD = 11.8). Vignettes varied on
terminology and successfulness of graphical outcome data. Teachers rated
acceptability on the Intervention Rating Profile (IRP) and answered dichotomous
yes/no questions to evaluate intervention successfulness and indicate willingness
to learn more about implementation.

Findings and Conclusions: The main effect of outcome data was significant, $F(1, 75)$ =
14.07, p < .001, η_p^2 = .165. Teachers who reported using a Direct Instruction
teaching style rated the intervention as more acceptable than those who indicated
a constructivist/direct instruction combination teaching style. There was a
significant difference between the two groups; $t(65)$ = 2.055, p = .044. The
variables of judgment of outcome data and willingness to implement were
excluded from the analysis due to a lack of variance in the responses.
Manipulation of terminology does not impact intervention acceptability. The
findings seem promising in light of the accepted and longstanding use of
behavioral terminology by consultants, though they cannot be generalized to the
population of elementary teachers as a whole. Thus, awareness and education
focused on research-based instructional practices may still be needed for many
teachers. Consultants should be cognizant of the multiple factors influencing
intervention acceptability and thus, school-based services for children. In
particular, consultants need to understand how communication of an intervention
can impact the likelihood of acceptability and implementation.

ADVISER'S APPROVAL: Terry Stinnett