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SUPPORTING AND HINDERING STUDENTS' BASIC NEEDS: AN ANALYSIS OF
INVOLVEMENT DURING STANDARDS- BASED MATHEMATICS HOMEWORK
THROUGH THE LENS OF PARENTS AND STUDENTS

by

Hanin S. Rashid

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ABSTRACT OF THE DISSERTATION

Supporting and hindering students' basic needs: An analysis of involvement during standards- based mathematics homework through the lens of parents and students

by Hanin S. Rashid

Dissertation Directors:

Toni Kempler Rogat and Clark A. Chinn

Motivation research may help explain the reasons behind home-based parental involvement's mixed relations with achievement (Pomerantz & Eaton, 2001), given the mediating role it plays in the relationship between parent involvement and children's educational outcomes (Grolnick & Slowiaczek, 1994). Children's perceptions of parental support of their basic psychological needs for autonomy, competence, and relatedness has implications for motivation, engagement, and learning (Grolnick, Ryan & Deci, 1991). Past research on Self-Determination Theory (SDT) has focused on differentiating autonomy-supportive from controlling practices, with few examining competence and relatedness-relevant practices. Research has largely been quantitative, with qualitative studies having reduced data to ratings or frequencies while assessing parent practices during laboratory tasks. A consequence of this methodology is that the conceptualizations of supporting basic needs has remained unelaborated, decontextualized from authentic school and homework experiences, and narrowly focused on Caucasian parents in suburban districts. Moreover, previous studies have focused on autonomy support independently, with limited access to how parents use autonomy, competence and relatedness-supportive practices in combination. This study is aimed at richly describing

home-based parent practices that are perceived as supportive and inhibitive of children's basic needs, and contextualized by parents' practice selection, quality enactment, and an urban district employing a standards-based mathematics curriculum.

Seven parent-child dyads from two fourth grade classrooms in an urban city in New Jersey were observed completing mathematics homework and then interviewed about homework practices. The home environment afforded access to more natural parent-child interactions, enriched characterizations of parent's basic needs practices, and how practices are used in combination. These analyses coalesce in three qualitative cases representing high, mixed, and low motivational support characterizing how parents employ motivational practices in combination. The highest quality parent involvement was evidenced through the complimentary support of children's autonomy, competence and relatedness. However, autonomy inhibitive practices overshadowed supportive practices, a result illuminated by parent practice profiles. Findings indicate that children's interpretations of a practice as unresponsive mismatched parents' reported intent as influenced by their role construction and self-efficacy for the standards-based mathematics curriculum. Parental intentions may have import given implications for selection and enactment quality as facilitative and inhibitive of children's needs.

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Dedication

I dedicate this dissertation to my parents

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Chapter 1: Introduction

Parent involvement during homework plays a significant role in student learning considering that it influences children's attitudes toward homework and school (Hoover-Dempsey, Bassler & Burrow, 1995). Parent involvement is even a prevalent piece of policies (NCTM, 1989; NCLB, 2001) and reformed curriculum (Carroll, 2001) which highlights the importance of understanding parent involvement. Parents' involvement in homework has been associated with mixed results for achievement with studies showing positive (Pomerantz & Eaton, 2001), neutral (Halle, Kurtz-Costes & Mahoney, 1997), and negative relations (Chen & Stevenson, 1989) with academic achievement. Despite the mixed results with achievement, research suggests that parent involvement promotes persistence, self-regulation, improved study skills, and greater homework completion, among other adaptive outcomes (Patall, Cooper & Robinson, 2008; Pomerantz, Moorman & Litwak, 2007; Xu & Corno, 1998). Accordingly, it is important to understand the role of parental support during homework.

Previous literature on home-based parent involvement revealed that the issue with achievement was not about the quantity of parents' involvement, but the quality of parent practices. Parents may engage in inappropriate involvement strategies such as doing homework for the child or overcomplicating homework (Cooper, Lindsay, & Nye, 2000). Motivational research may help elaborate on this explanation for the mixed results in home-based parent involvement. Research suggests that motivation plays a role in mediating the relationship between parents' involvement and educational outcomes (Grolnick, Ryan & Deci, 1991; Grolnick & Slowiaczek, 1994). Variation in the quality of parent involvement has implications for students' motivation, engagement, and learning.

This paper employs a Self-Determination Theory (SDT) framework to assess parents' influence on their child's motivation given its prevalence in the parent involvement literature (Deci & Ryan, 1985). Previous research drawing on a SDT perspective, has suggested that the social environment fosters well-being through the satisfaction of an individual's basic psychological needs for autonomy, competence, and relatedness and the extent to which these needs are satisfied facilitates their behavior.

The support or inhibition of children's psychological needs influences students' motivation. SDT distinguishes intrinsic from extrinsic motivation. Intrinsic motivation involves participating in the activity because it is inherently enjoyable, with the aim of developing one's capabilities. Extrinsic motivation is an orientation toward attaining a separate outcome. Overall, intrinsic motivation has been positively associated with student achievement (Ryan & Deci, 2000). There is evidence for the motivational benefits of home-based parent involvement for children's intrinsic motivation (Gonzalez-DeHass, Willems, Holbein, & Doan, 2005; Pomerantz, et al., 2007). In addition, research has demonstrated a relationship between the satisfaction of these basic needs and performance in school, because of the benefit for intrinsic motivation (Deci, Vallerand, Pelletier, & Ryan; 1991). Children's perceptions of their parent's support for their basic psychological needs have implications for consequent motivation, engagement, and learning (Pomerantz et al., 2007). As a result, it is important to consider the environment that parents create at home during homework, which may impact students' intrinsic motivation to the extent to which it facilitates or hinders their basic needs for autonomy, competence and relatedness.

The extent to which parents use practices during homework that promote children's psychological needs can support intrinsic motivation and ultimately achievement (Ryan & Deci,

2000). High quality parent involvement is conceptualized as that which supports children's autonomy, provides structure in order to promote competence, and affords emotional support (Dumont, Trautwein, Ludtke, Neumann, Niggli, & Schnyder, 2012; Grolnick & Slowiaczek, 1994; Grolnick et al., 1991; Hoover-Dempsey, Battiato, Walker, Reed, DeJong, & Jones, 2001; Patall et al., 2008; Pomerantz et al., 2007). The benefits of autonomy supportive practices are extensive, promoting intrinsic motivation, self-regulation, achievement, and a greater sense of competence (Ginsburg & Bronstein, 1993; Grolnick et al., 1991; Ryan & Deci, 2000). Previous research on competence-supportive practices is limited with research focusing on structure and revealing a positive relationship with intrinsic motivation (Gurthie, Wigfield, & Von Secker, 2000; Grolnick, 2009), engagement (Farkas & Grolnick, 2010) and academic achievement (Hoover-Dempsey et al., 2001; Pomerantz & Ruble, 1998). Limited research has investigated competence support beyond structure or practices that may inhibit competence. Moreover, little research on relatedness support or inhibiting practices has been conducted. Without a thorough description of the practices that support and inhibit each of the children's basic needs and quality variation for these needs-relevant practices, it is difficult to understand how parents foster the extant benefits of promoting students' basic needs. In addition, qualitative research on SDT has not looked at the outcome of intrinsic motivation when basic needs are supported and inhibited simultaneously. Assessing patterns within profiles of parents engaging in student perceived practices that are primarily supportive, primarily inhibitive, or a mixture of supportive and inhibitive of basic needs may help extend research on parent involvement in homework and identify patterns of involvement that yield more adaptive outcomes.

Given that some children may experience a practice as controlling when the intention is supportive suggests that assessing students' perceptions as well as parents' intentions may help

to provide an explanation for the mixed relations between parent involvement and academic outcomes with homework. Therefore, this dissertation explores other motivational theories beyond SDT that may also contribute to more broadly conceptualizing high quality parent involvement, such as self-regulation, self-efficacy, goal theory, expectancy-value theory, and intelligence beliefs. As a result, an integration of these theoretical perspectives may identify other motivational practices that enrich our detailing of practices unaccounted for within a SDT lens.

The literature is still limited in its description of parents' practices for supporting or inhibiting each of these needs during homework which is compounded by the lack of qualitative research. The predominant focus of this research has been on survey analyses linking quality parent involvement to satisfying children's basic needs (Dumont et al., 2011; Grolnick & Slowiaczek, 1994; Grolnick, Ryan, & Deci, 1991; Hoover-Dempsey et al., 2001; Patall et al., 2008; Pomerantz et al., 2007). Even studies that have obtained qualitative data have reduced the data down to ratings, frequencies, or other numerical representations for conducting quantitative analyses (Grolnick et al., 1991; Grolnick, Gurland, DeCoursey, & Jacob, 2002; Grolnick & Ryan, 1989; Pomerantz & Ruble, 1998; Pomerantz et al., 2005). Moreover, the few studies that have maintained the qualitative nature of the data do so largely in the context of laboratory practices as opposed to their natural setting during homework (Grolnick et al., 2002; Grolnick, Price, Beiswenger, & Sauck, 2007; Ng, Kenney- Benson, & Pomerantz, 2004). Despite the valuable examination of the relations between parent involvement, motivation, and academic outcomes, the quantitative analysis in these studies lacks the rich and thick description of parents' practices in a natural home setting that is needed to elucidate how parent practices during homework may have implications for children's psychological needs.

A natural home setting also affords the benefits of exploring the reasons *why* parents may vary in their quality of homework involvement in light of their characteristics and contextual features (Hoover-Dempsey & Sandler, 1995, 1997, 2005). It is therefore important to investigate the role of factors which influence the quality of parents' involvement since they may subsequently impact students' achievement. This dissertation therefore considers contextual indicators, such as an urban context and the curriculum, which have been primarily overlooked in the literature on parent involvement during homework. Motivational research on parents' involvement tends to focus on primarily middle-class Caucasian parents in suburban settings. This may lead to theories of parental support for psychological needs that are less generalizable to parents in urban districts and of minority backgrounds. In addition, previous research has not considered the difficulty of the curriculum and how this may influence parents' practice enactment. Moreover, some homework contexts may pose a high degree of challenge which may lower parents' sense of self-efficacy and, as a result, form the practices they employ. This dissertation examines parental involvement during standards-based mathematics curriculum tasks, which is a homework context that has notably presented a challenge for parents as a product of being cognitively complex (Jackson & Remillard, 2005; Remillard & Jackson, 2006). There is limited description of how a challenging context may impact the quality of parents' involvement. It is therefore essential to have a rich description of parents' involvement practices that are facilitative or inhibitive of children's psychological needs within the context of a standards-based mathematics curriculum and an urban context, represented during actual homework interactions.

Accordingly, this dissertation richly characterizes the range of autonomy, competence, and relatedness practices employed by parents of elementary school children within a standards-

based mathematics homework context to account for how this particular context mediates involvement practices. In order to update prior research on the mixed results for parent involvement during homework and achievement, this dissertation employs a motivational perspective as an explanation for those findings. Therefore, the goal of this research is to identify and characterize how in this context, students perceive parent practices that support and inhibit their basic needs for autonomy, competence, and relatedness. In addition, this research aims to investigate how parents' supportive and inhibitive practices combine to impact the quality of their involvement. As a result, this study identifies the profiles of parents who were primarily supportive or inhibitive of their child's basic needs and those that were equally mixed, resulting in parent profiles of high, low, and mixed quality involvement.

Chapter 2: Literature Review

2.1: Parent Involvement

For the first time, policy makers have given a definition to parent involvement. NCLB, defines what they believe constitutes parent involvement stating that:

- The term parental involvement means the participation of parents in regular, two-way, and meaningful communication involving student academic learning and other school activities, including ensuring-
- (A) that parents play an integral role in assisting their child's learning;
 - (B) that parents are encouraged to be actively involved in their child's education at school;
 - (C) that parents are full partners in their child's education and are included, as appropriate, in decision making and on advisory committees to assist in the education of their child;
 - (D) the carrying out of other activities, such as those described in section 1118.
- <http://www.ed.gov/programs/titleiparta/parentinvguid.doc>

When parents are involved in their child's education, children display greater achievement (Hoover-Dempsey & Sandler, 1995; Paulson, 1994; Eccles & Harold, 1996) and are more

motivated in school (Grolnick & Slowiaczek 1994). Parental involvement is also associated with greater math achievement (Sheldon & Epstein, 2005).

While parent involvement has broadly been associated with positive benefits for children's motivation and achievement in school, the literature makes a clear differentiation between school-based and home-based parent involvement (Hoover-Dempsey, Bassler, & Brissie, 1987), which when differentiated, leads to varying results with achievement. This dissertation defines parental involvement as the action of applying educational "resources" to the child (Grolnick & Slowiaczek, 1994) with a distinction between school-based and home-based parent involvement (Pomerantz et al., 2007). While school-based involvement pertains primarily to attending school functions, volunteering at the school, or engaging with the child's teacher; home-based parent involvement entails establishing an environment for homework, helping with homework, or engaging in discussion about the child's day at school (Hoover-Dempsey, et al., 1995). Prior research on parent involvement indicates a positive relationship between school-based involvement and achievement, with achievement findings for home-based involvement being more mixed (Pomerantz, et al., 2007).

More specifically, research suggests some forms of parental involvement during homework may impede children's achievement (Patall et al., 2008). Assessing how homework involvement yields beneficial student outcomes may be especially important for elementary schoolers who may benefit most from homework involvement as they are still developing the skills necessary to foster their own learning (Hoover-Dempsey, et al., 1995; Grolnick & Slowiaczek, 1994). As such, this research will focus on parent homework involvement.

Parent Involvement in Homework

Research indicates that there is variation in the amount and quality of parent involvement (Grolnick & Slowiaczek, 1994; Hoover-Dempsey & Sandler, 1995). A large amount of the parent involvement literature focuses on explaining the influence of parent involvement for student outcomes such as attitudes, affect, motivation, and achievement. This purpose of this section is to explain how parents' involvement impacts student outcomes. Toward this end, this section will start by reviewing how parents are involved during homework. Next, I review the outcomes of these practices. Finally, I discuss the literature on the mixed results with achievement followed by a review of the potential explanations for the mixed results as explained by the literature on parent involvement. I draw conclusions from these findings regarding what may constitute high and low quality involvement in light of benefits for children's outcomes.

Parent involvement research recognizes that parents employ a range of varying strategies when providing support during homework. Hoover-Dempsey's empirical research and reviews suggest that parents differ in their employed strategies during homework (Hoover-Dempsey et al., 1987; Hoover-Dempsey et al., 1995; Hoover-Dempsey et al., 2001; Hoover-Dempsey & Sandler, 1995, 1997, 2005). These findings indicated different strategies such as providing instruction, modeling, establishing a homework environment, providing feedback, responding to requests for help, and checking homework. Parents reported responding to children's questions, providing structure through rules and arranging an environment for homework, providing praise in order to motivate performance, coordinating for help from others, monitoring, quizzing their children on the material, and providing instructional support. In terms of active parent involvement, monitoring, defined as surveillance of homework, was most prevalent (72%)

followed by efforts to motivate performance through praise or rewards (55%). They reported that when parents helped with math homework (49%), they reported engaging in “teaching” which meant helping the child get the correct answer or helping them learn their facts.

Other studies about parents’ involvement in homework reported similar practices, with some studies providing more detail about enactment. For example, instructional support during homework takes many shapes in different studies. Some studies described instructional support as scaffolding (i.e., guided instruction that fits between task demands and children’s level of ability) (DeBaryshe, Buell, & Binder, 1996; Shumow, 1998), others described it as helping the child drill, memorize or learn facts (Huntsinger, Jose, & Larson, 1998), breaking down a problem (Shumow, 1998), or responding to student questions (Delgado-Gaitan, 1992). Other studies operationalized monitoring as supervision or surveillance, which affords parents the opportunity to identify student errors, monitor students’ motivation level, or familiarize themselves with student homework (Delgado-Gaitan, 1992; Ginsberg & Bronstein, 1993; Paulson, 1994). Many other studies identified homework involvement as checking, reviewing, and correcting homework (Callahan, Rademacher, & Hildreth, 1998; Delgado-Gaitan, 1992).

A second focus of parent involvement concerns the influence of varying homework practices for children’s attitudes and affect. This prior research yields generally positive results. Children reported taking pleasure in and enjoying homework (Shumow, 1998) and having more positive attitudes about learning and education in general (Leone & Richards, 1989) when their parents were involved. For instance, Leone and Richards (1989) studied students’ experiences with homework. Four-hundred-one students carried a pager that would randomly page them to complete a questionnaire about where they were, who they were with, and what they were doing and thinking. Results revealed that when students were doing homework, their affect and

attention was overwhelmingly negative. However, students reported being most attentive during homework if they were completing their homework with a parent. Moreover, students who were with a parent during homework spent more time on homework and were higher achievers. This suggests that parent involvement during homework can be incredibly important in promoting success.

Parent involvement also enhances the development of self-regulated learning as well as improved study skills (Xu & Corno, 1998). In addition, providing reinforcement and feedback on student performance is associated with personal competence as well as increased self-regulation (Hoover-Dempsey et al., 2001). Cooper and his colleagues (2000) found that parent involvement also promoted persistence in homework completion, and increased effort in homework. Despite the generally positive results, some studies revealed that parent involvement could lead to negative affect such as tension between the parent and child as well as pressure to perform (Cooper et al., 2000; Levin, Levy-Shiff, Appelbaum- Peled, Katz, Komar, & Meiran, 1997).

Despite benefits for affect, persistence, and self- regulation, home-based parent involvement demonstrates mixed results with achievement. In the following paragraphs, I present a review of research evidencing positive and then negative relations with achievement. Within this review, explanations for these varying results are presented. Several studies report positive results regarding parent involvement with homework and academic achievement. The positive relation is explained in light of parent monitoring and helping the child with homework (Callahan et al., 1998; Hoover-Dempsey & Sandler, 1995). Deslandes and colleagues administered questionnaires to 637 students asking them to report on the level of their parents' involvement at home. They found that setting a place and time for homework, providing praise and encouragement, as well as responding to children's questions can enhance achievement

(Deslandes, Royer, Potvin, & Leclerc, 1999). When a parent has ample knowledge of the homework assignments and the processes needed to perform the task, they can be extremely useful, subsequently improving students' academic achievement (Frome & Eccles, 1998). Callahan and colleagues (1998) focused on students in educational outreach programs and measured students' homework completion rate and the quality of homework on a scale based on set criteria for the program's staff. They found that parent involvement with homework improved children's homework completion rate, the quality of their homework, and subsequently their achievement in mathematics. These results are consistent with other parent involvement homework studies (e.g., Hutsinger et al, 1998; Peng & Wright, 1994).

In contrast, studies have found that parent involvement can actually have a negative impact on student achievement. Trivette and Anderson (1995) investigated four types of parent involvement (parent expectations, parent and child communication, at home-based involvement, and school-based involvement) as determined in a national study in 1988, indicating a negative association with home-based involvement and achievement. More specifically, they found that an overly structured home environment, based on strict rules about homework, was associated with lower achievement. Higher levels of homework help were associated with frustration and greater fatigue as well as disappointment for the parent (Levin et al., 1997). Ginsburg and Bronstein (1993) asked parents to report their level of monitoring by indicating how often they: supervised homework, reminded their child to do their homework, and insisted the child do the homework. They found that the more parents engaged in monitoring during homework, the more their children relied on their parents to direct their behavior and the lower their achievement scores were. In addition to the impact on achievement, these children were rated by their teacher as showing less persistence, less initiation, and less enjoyment with their work.

In 2000, Cooper and colleagues surveyed 709 parents about their involvement practices and found that two thirds of parents admitted to engaging in inappropriate forms of involvement such as doing the homework themselves or just giving the child the answers. Cooper validated these results again in 2006 - with a review indicating that many of these studies may not have accounted for the inappropriate involvement strategies that parents may have been engaging in during homework, such as doing the homework for the child or overcomplicating homework (Cooper, Robinson, & Patall, 2006). For instance, parents' inappropriate strategies may be a product of their inability to help, because it may influence how effective their involvement is during homework (Van Voorhis, 2003). Parent assistance with homework can be confusing to the child if the parent uses a different method from the teacher (Cooper & Valentine, 2001). Van Voorhis (2003) found that some parents rushed children in order to finish more quickly or helped in a way that made the work actually more difficult for the child. This finding is consistent with other studies on parent involvement and homework (e.g., Cooper, 1989).

Reviews on parent involvement and homework have tried to interpret the mixed achievement by accounting for grade level, SES, or subject matter. These reviews reflect the above review, revealing mixed relations with achievement for elementary, middle school, and high school students, parent involvement in urban and suburban contexts, as well as for different subjects in school (Cooper et al., 2006; Dumont et al., 2011; Jeynes, 2003, 2005b; Patall et al., 2008). In order to further examine the mixed results for parent involvement in homework, Patall and colleagues (2008) conducted a meta-analysis which revealed that the issue with achievement was not about the quantity of parents' involvement, but the quality of parent practices.

Taken together, the literature on parent involvement has attempted to flush out the mixed results between parent involvement in homework and achievement. This body of research

suggests that while parent involvement with homework can be beneficial, the type and quality of practices parents employ may be at fault for the mixed results with achievement if it hinders students' ability to ultimately be able to understand how to do their homework successfully (Cooper, 2007; Cooper & Valentine, 2001; Van Voorhis, 2003). Variation in the quality of parent involvement has implications for students' motivation, engagement, and learning which may help to elucidate or provide varying explanations for the mixed relations between parent involvement and academic outcomes with homework. As such, this dissertation research posits that parent involvement either has an undermining or beneficial influence on motivation by facilitating children's basic needs, which may subsequently promote academic achievement.

2.2 Self-Determination Theory

This current study relies on a motivation lens to help explain the mixed relations between home-based parent involvement and achievement as well as characterize quality variation in parent homework involvement. In order to analyze parents' influence on their child's motivation with implications for achievement, this dissertation study employs a Self-Determination Theoretical (SDT) framework, given its prevalence in the parent involvement literature. SDT conceptualizes parent practices as having an impact on children's outcomes via facilitating or inhibiting basic psychological needs. High quality parent involvement is conceptualized as that which supports children's autonomy and provides structure to the environment in a manner that makes their child feel more competent and emotionally supported (Dumont et al., 2011; Grolnick & Slowiaczek, 1994; Grolnick et al., 1991; Hoover-Dempsey et al., 2001; Patall et al., 2008; Pomerantz et al., 2007). Given that some students may perceive help during homework as intrusive while others may perceive it as caring, an SDT perspective suggests that variation in parent support of basic psychological needs has implications for motivation, engagement, and

learning. The following sections will describe self-determination theory and its subsequent benefits on student outcomes.

Self-Determination theory (SDT) recognizes the importance of the conditions of an environment in fostering motivation via support for psychological needs of autonomy (need for feeling a sense of agency, control or choice), competence (need for feeling capable) and relatedness (need for feeling closeness to another) (Deci & Ryan, 1985) (each is defined in more detail in a subsection below). These needs are universal innate needs that are essential for promoting well-being and psychological health, and if not satisfied, can promote ill-being (Ryan & Deci, 2000). Ryan and Deci (2000) describe these psychological needs as “essential nutrients” and they explain that “individuals cannot thrive without satisfying all of them, any more than people can thrive with water but not food (p.14).” Thus, an individual’s environment can either support or inhibit their growth and psychological development. Furthermore, this theory posits that these psychological needs are universal to all human beings regardless of their race, gender, or SES (La Guardia, Ryan, Couchman, & Deci, 2000). Ryan and Deci (2000) address concerns about cultural differences by explaining that people are likely to express autonomy, competence, and relatedness differently as it more appropriately aligns with their different cultural values. In sum however, the social environment is critical to fostering a greater well-being through the satisfaction of an individual’s basic psychological needs and the extent to which these needs are satisfied shapes their behavior.

Ultimately, the support or inhibition of children’s psychological needs has impact on students’ motivation. SDT recognizes that the most central forms of motivation can be separated into intrinsic, extrinsic motivation, and amotivation. Intrinsic motivation refers to engaging in an activity on one’s own accord to learn or for one’s own satisfaction, engaging in a creative

manner, and seeking challenge (Deci & Ryan, 1985). Extrinsic motivation is engaging in a task for external reasons that are not inherently personally endorsed, such as for a reward or avoiding punishment (Deci & Ryan, 1985). One theoretical assumption is that many actions are initially externally regulated, over time they may become internalized by the individual and that action may be internally regulated (Deci & Ryan, 2000). As individuals internalize a behavior, they may become more self-determined in their action. As such, extrinsic motivation has been separated into four types distinguished along the continuum of lower to higher levels of self-determination: (a) external regulation, behavior that is controlled by an external demand (b) introjected regulation, behavior that is not fully accepted as their own (c) identified regulation, behavior that is valued and accepted as their own (d) integrated regulation, behavior that is fully assimilated to the self (Ryan & Deci, 2000). Amotivation is a lack of motivation to engage in an activity as a result of not perceiving a relationship between behavior and the subsequent outcome of that behavior (Deci & Ryan, 1985).

Whether parents promote amotivation, extrinsic motivation, and/or intrinsic motivation on the part of their children is important given implications for subsequent outcomes. Amotivation is associated with negative outcomes such as boredom and lower engagement (Vallerand, Pelletier, Blais, Briere, Senecal, & Vallieres, 1993) as well as more stress and psychological distress while studying (Baker, 2004). Students who are amotivated also have a higher dropout rate (Vallerand & Bissonnette, 1992). In addition, amotivation has a strongly negative correlation with academic achievement (Vallerand et al., 1993). On the other hand, extrinsic motivation is associated with more mixed outcomes, given the degree to which the form of external regulation is experienced as autonomous to the individual. Some earlier studies found that extrinsic motivation is associated with lower academic achievement (Grolnick & Ryan,

1987; Becker et al., 2010; Lepper, Corpus, Iyengar, 2005; Wolters, Yu, Pintrich, 1996). Extrinsic motivation has also been found to foster greater anxiety (Wolters et al., 1996) and negative emotions (Ryan & Connell, 1989). Some studies have found that extrinsic motivation can have positive affects depending on the subtype of regulation (Vallerand et al., 1993). Vallerand & Bissonnette (1992) found that students who are extrinsically motivated through the more autonomous forms of identified and integrated regulation are associated with greater persistence and had a lower dropout rate. In addition, students with this same type of extrinsic motivation also report having higher effort and positive affect (Ryan & Connell, 1989).

Intrinsic motivation consistently leads to positive student outcomes such as competence (Gottfried, 1985), greater interest (Harackiewicz, 1979), persistence (Vallerand & Bissonnette, 1992), and creativity (Koestner, Ryan, Bernieri, & Holt, 1984), while negatively related to anxiety (Gottfried, 1985) and procrastination (Senecal, Koestner, & Vallerand, 1995). In addition, intrinsic motivation is associated with greater achievement (Gottfried, 1985; Vallerand et al., 1989). In a study by Cordova and Lepper (1996), elementary students were asked to work with an educational computer program that taught them mathematical content. The control condition presented the material in an abstract manner while the experiential conditions presented the material in a more meaningful manner (the presentation was either personalized to the students' preferences or more generically appealing). Half of the students in these groups were then also offered choices about the method of instruction. The results revealed that strategies designed to increase intrinsic motivation had a large impact on student outcomes. Children who were intrinsically motivated were more deeply involved in the math activities, they tried more complex problems, and they learned more from the material in a shorter amount of time. In addition, these students showed a greater sense of competence and ambition for learning

the material. As a whole, intrinsic motivation is the ideal level of motivation and contributes to the greatest amount of success (Gottfried, Gottfried, Morris, Cook, 2008). Given the numerous benefits of intrinsic motivation, it is important to identify the possible factors that promote intrinsic motivation.

SDT recognizes that decisions emanate from the self and identify three psychological needs that promote intrinsic motivation: autonomy, competence, and relatedness (Deci & Ryan, 1985). Research has demonstrated a relationship between the satisfaction of these basic needs and performance in school, because of the benefit for intrinsic motivation (Deci et al., 1991). The following sections will detail the conditions for satisfying and inhibiting each of these needs as well as the outcomes associated with each.

Autonomy. Autonomy is the psychological need to perceive one's behavior as deriving from the self. Individuals experience autonomy satisfaction when they feel a sense of choice or when they fully endorse their own actions (Deci & Ryan, 1985). Individuals who feel autonomous tend to experience greater emotional well-being (Hortop, Wrosch, Gagne, 2013; Sheldon, Ryan, Deci, & Kasser, 2004; Vallerand, 2012). Autonomy has been associated with academic achievement (Guay, Ratelle, Roy, Litalien, 2010; Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005), positive affect (Ryan & Grolnick, 1986), persistence (Black & Deci, 2000; Vansteenkiste & Deci, 2003), intrinsic motivation, and greater engagement (Miserandino, 1996). Parental autonomy support promotes greater self-regulation and achievement (Ginsburg & Bronstein, 1993; Grolnick et al., 1991; Soenens and Vansteenkiste, 2005). Previous research also indicates a positive relationship between autonomy supportive environments and intrinsic motivation (Ginsburg & Bronstein, 1993; Grolnick & Ryan, 1989; Pomerantz & Eaton, 2001; Cooper et al., 2000; Ryan & Deci, 2000), a mastery orientation towards learning (Grolnick,

Benjet, Kurowski, Apostoleris, 1997), as well as a greater sense of competence (Vallerand, Fortier, & Guay, 1997).

In contrast, a situation perceived to be controlling by being imposing and oppressive diminishes intrinsic motivation because autonomy is thwarted (Deci & Ryan, 2002; Gottfried, Fleming, & Gottfried, 1994). A low sense of autonomy is associated with negative affect (Smith, Sinclair, & Chapman, 2002), performance-avoid goals, (Elliot & McGregor, 2001), and lower achievement (Guay et al., 2008; Vansteenkiste et al., 2005). In addition, Pomerantz and Eaton (2000) suggested that controlling practices can thwart feelings of competence, finding that students believed when their parents helped, monitored, or made decisions for them, these actions were indicative of parents' perceptions of their low ability or incompetence. Barber (1996) found that controlling parents' behaviors had an impact on relatedness when parents withdrew affection from children for not complying with their demands.

Competence. Competence is the psychological need to perceive oneself as capable and effective (Deci & Ryan, 1985). When children feel highly competent, they tend to report greater intrinsic motivation (Eccles & Wigfield, 1995) and their academic achievement is positively impacted (Grolnick, et al., 1991; Wigfield, Eccles, Yoon, Harold, Arberton, Feedman- Doan, & Blumenfeld, 1997). Competence beliefs are also related to greater effort, persistence, and self-regulation (Zimmerman, 2000) as well as greater engagement (Schunk, 1995). Competence support is associated with intrinsic motivation (Guthrie, Wigfield, & Von Secker, 2000; Grolnick, 2009), engagement (Farkas & Grolnick, 2010) and academic achievement (Hoover-Dempsey et al., 2001; Pomerantz & Ruble, 1998).

Relatedness. Relatedness is the need for feelings of closeness and connectedness with other human beings (Deci & Ryan, 1985). Research suggests that relatedness can have an impact on student engagement and ultimately performance (Furrer & Skinner, 2003). Having a sense of relatedness can have a positive impact on educational outcomes (Chen & Jang, 2010). Relatedness has also been associated with greater persistence (Hausmann, Schofield, & Woods, 2007). Despite being a “distal” need, relatedness does have an important association with intrinsic motivation, especially in an environment that supports autonomy and competence (Ryan & Deci, 2000). Supporting relatedness may help facilitate children’s needs for competence and autonomy (Pomerantz, Grolnick, & Price, 2005) which can help to support engagement as well as achievement (Skinner, Johnson, & Snyder, 2005).

Taken together, SDT posits that contextual features such as parent behaviors have an influence on children’s intrinsic motivation by facilitating three basic psychological needs for autonomy, competence, and relatedness (Deci & Ryan, 1985). Therefore, it is important to identify parent practices that have proven to support and inhibit each basic need. The following sections review the theoretical pieces hypothesizing how parents support or inhibit basic needs, the benefits and consequences, as well as the empirical research of how parents support basic needs.

Autonomy support. Autonomy supportive and controlling environments have become a dominant topic of research when considering home environments, because of their significant association with students’ motivation and achievement in school (Deci & Ryan, 1985; Ginsburg & Bronstein, 1993; Grolnick et al., 2002; Pomerantz & Eaton, 2001; Pomerantz et al., 2007). Autonomy supportive environments are conceptualized as promoting choice, giving students a role in the decision making (Cooper & Valentine, 2001; Grolnick & Ryan, 1989), and allowing

them to initiate their own behavior (Pomerantz et al., 2005). More specific to the context of this dissertation research, supporting autonomy during homework can be conceptualized in a number of ways including taking the child's view in the task or homework (Grolnick et al., 2002), supporting the child's effort and willingness to take the lead (Grolnick, 2009), and encouraging the child to generate answers to a problem and work on their own (Pomerantz et al., 2005).

Another way parents can support autonomy is by helping the child establish homework procedures by encouraging them to develop their own homework schedule (Cooper et al., 2000).

In contrast to autonomy supportive environments, controlling environments limit choice and inhibit children's initiative (Grolnick, 2009; Grolnick & Ryan, 1989). Previous research has described controlling parent strategies as inhibiting independent problem solving such as solving problems for children, taking the lead during problems, and ignoring their child's opinion (Garn, Mathews, & Jolly, 2010; Grolnick, 2009). Controlling practices are also those perceived by the child to be imposing, such as monitoring or surveillance, checking, and helping the child without being asked and making decisions for the child (Pomerantz & Ruble, 1998). Parents' responses to failure or low grades can also result in controlling repercussions such as implementing punishments (Ginsburg & Bronstein, 1993). By controlling rewards, threatening punishment, or implementing deadlines, parents control their children's educational environment at home and subsequently promote extrinsic motivation (Cooper, et al., 2000).

Most studies on parental autonomy support or control have been quantitative, measuring parental autonomy support through surveys assessing children's perceptions (Grolnick et al., 1991; Grolnick et al., 2000, Grolnick et al., 2002; Pomerantz & Eaton, 2001; Pomerantz & Ruble, 1998; Soenens & Vansteenkiste, 2005). Grolnick and colleagues' work has looked at autonomy versus controlling practices of parents when working with their children. In their 1991

study, students had to fill out the POPS (perception of parents scale) questionnaire which is a 4 point scale that asks the child to choose between two types of parents and then indicate if that is sort of or really true for them. One sample item stated, “some mothers are always telling their children what to do but other mothers like their children to decide for themselves what to do.” Students then had to select which mother was most like their mother and then indicate if that was really true or sort of true for them. In their 2000 study, they used another questionnaire of parent autonomy support. Grolnick and colleagues (2000) used an 8-item scale that measured the degree to which mother’s provided choice as opposed to control or pressure. For example one item was, “when it comes to school, my mother is always telling me what to do.” Children then had to rate on a scale indicating not at all true (1) to very true (4). This type of quantitative focus afforded the examination of the relations between parent involvement, motivation, and academic outcomes. In addition, these surveys help to convey students’ perceptions of parents’ autonomy supportive or inhibitive practices. However, these studies have not provided rich and thick description of parents’ practices and strategies for fostering students’ needs during homework.

While a majority of studies have relied on surveys to assess children’s perceptions of autonomy support, there are qualitative studies that rely on parent reports. Pomerantz and Eaton (2001) and Pomerantz and Ruble (1998) employed a daily checklist to assess parents’ use of autonomy supportive and controlling behaviors. For helping and monitoring, the distinction between controlling and autonomy supportive practices were differentiated by whether or not the action was initiated by the child or imposed by the parent. Making the decision for the child was highly controlling whereas encouraging the child to make a decision on their own was identified as autonomy supportive. For praise, promising a reward for an accomplishment was controlling, while telling the child that he or she is smart or must enjoy their work was autonomy supportive.

In terms of discipline, taking away privileges was considered highly controlling while discussing the issue with the child was identified as autonomy supportive. They found that controlling practices were interpreted by children as indicative of incompetence.

Other studies have observed mother-child interactions during activity. Grolnick and colleagues (2002) found that controlling mothers actually inhibited their children's ability to do work on their own. In their experimental study, mothers worked with their children on poem and map tasks. Half of the mothers were assigned to the high pressure condition which conveyed to them that their role was to ensure their child could write a poem, because they would be tested to ensure that they would perform 'well enough'. The other half of the mothers were assigned to the low- pressure condition where they were told to help their child learn how to write a poem and then told that their child would be asked questions afterwards, but there was no specific level as to which they needed to perform. Interactions between parent and child were observed. Observations were coded for controlling and autonomy supportive verbal and nonverbal codes. Controlling verbal codes included directives like 'do this now' or asking leading questions, taking over the task, giving answers, and unsolicited checking. Nonverbal controlling codes included leading behavior like pointing, erasing a child's answers, showing the answers, and unsolicited checking. Autonomy supportive verbal codes included providing feedback, encouragement, information hints, strategies, and solicited checking. Autonomy supportive nonverbal codes included waiting for the child to ask for assistance, clapping for the child, and holding the child's place at request. These codes were quantified for each parent and reduced to a 5 point scale in order to indicate each mothers' level of control for use in subsequent analyses. They found that children whose mothers were more controlling wrote less creative poems when

they were on their own (Grolnick et al., 2002). Grolnick et al (2007) and Grolnick and Ryan (1989) also quantified their findings using the same analysis as Grolnick et al (2002).

Similarly, Ng and colleagues 2004 set up a semi-structured homework simulation for mothers and their children in order to observe parents' involvement practices. The interaction was videotaped and then coded for controlling or autonomy supportive practices. Control was operationalized through behaviors such as taking the pencil from the child, giving directives to the child like "take your hand off the page," and completing parts of the problem on the child's behalf. Autonomy support was conceptualized through behaviors such as sitting on their hand, giving silent nods to demonstrate approval, and withholding their opinion. Behaviors were considered more controlling if they were not initiated by the child and less controlling if they were. This allowed for a differentiation of the intensity of each practice and subsequently parents' behaviors were given a rating from 1 (extremely low or never) to 5 (extremely high or very). The results revealed that controlling practices inhibited engagement while autonomy supportive practices increased achievement for low achieving students.

Research on autonomy versus controlling behaviors is abundant; however qualitative behaviors have been reduced to quantitative indicators. In addition, this research has been limited to laboratory settings meant to simulate the homework environment. Although the findings of these studies help to provide a description of the practices that may indicate controlling or autonomy supportive practices of parents, the results remain limited when considering parents' behaviors in the homework context.

Competence support. Competence, as previously defined, is having belief in one's own capabilities. Parents can provide competence support by providing clear feedback and assistance that can help students understand how to achieve success in school (Grolnick, 2009). In her book

about parenting, Grolnick (2003) suggests that providing assistance in a manner that encourages skill building will allow parents to support their child's competence during involvement. During homework, this can be fostered through scaffolding and direct instruction. Limited research has investigated competence inhibitive practices. Studies on parent involvement during homework, rather than SDT literature, suggest that parent practices that confuse or complicate homework or a lack of help during homework can undermine competence (Cooper, 2007). In addition, negative responses to failure may also impede competence support (Ryan & Deci, 2000).

While research on autonomy supportive practices is comprehensive, research on parents' competence supportive practices has focused on structure. Studies on parents' involvement during homework conceptualize structure as a form of involvement that can potentially support competence through providing clear and attainable expectations in the form of guidelines and encouraging their child to persist (see review in Hoover-Dempsey et al., 2001). While the vast majority of research on structure has not been specific to homework, several studies have characterized the benefits of parents' provision of structure for competence support (Cleveland & Reese, 2005; Cleveland, Reese, & Grolnick, 2007; Farkas & Grolnick, 2010; Grolnick & Ryan, 1989; Skinner et al., 2005). Within a self-determination theory lens, parents provide structure by supporting children in understanding how to better achieve success and avoid failure (Grolnick & Ryan, 1989). Moreover, structure is identified as the way in which parents can support competence, defining it as a key parenting dimension for satisfying a child's basic need for competence (Farkas & Grolnick, 2010; Grolnick & Ryan, 1989).

Structure has been discussed through a self-determination lens most often in the classroom (Reeve & Jang, 2006; Reeve, Jang, Carrell, Jeon, Barch, & 2004; Sierens Vansteenkiste, Goossens, Soenens, & Dochy, 2009). Bridging the competence supportive

benefits of structure in the classroom with the operationalization of structure at home provides a theoretical conceptualization of the competence supportive practices of employing structure during homework. Farkas and Grolnick (2010) conceptualize structure as competence supportive through six components: (a) clear and consistent expectations, rules, and guidelines (b) clearly conveyed consequences (c) task focused feedback (d) arranging opportunities and resources to meet expectations (e) providing rationale for rules and expectations (f) parents take a leadership role and function as authorities. This definition of structure, especially the final component, may suggest that structure is controlling. Jang, Reeve, and Deci (2010), however, found that structure was actually positively associated with autonomy support. In their classroom research on teacher's autonomy support and provision of structure, Jang and his colleagues (2010) rated teacher's autonomy support, teacher's structure, and students' engagement using a likert scale (1-7). Structure was rated from 1-7 on three behaviors: clear directions, guidance during the lesson, and feedback. Findings revealed that students were most engaged when their teacher provided both autonomy support as well as structure. This supports the theoretical suggestions that by providing a work environment that is consistent for the child, parents can convey their expectations to their child, therefore allowing these expectations to become routine and internalized by the child (Pomerantz et al., 2005). By internalizing their routine, children may feel less like they are being controlled and more like they are choosing to follow this structure (Grolnick, 2009).

Few studies have looked at the parental provision of structure during parent and child interactions. Cleveland and Reese (2005) investigated structure as a competence supportive practice of parents in children's ability to remember a prior topic. Fifty mother and child dyads were videotaped discussing their past experiences when the child was 40 months old. Maternal

structure and autonomy support were observed. Videos were coded for structure through utterances of open-ended elaborative questions that allowed the child to elaborate on a memory and modeled the presentation of new information. Autonomy was rated on a scale of 1-5 ranging from controlling behaviors that engaged the child to highly autonomy supportive practices that helped to expand the child's conversation. Parents and their child were observed again when the child was 65 months. Children whose mothers were provided high provision of structure had a greater memory of the previous conservation regardless of the level of autonomy support. Parents who were both autonomy and competence supportive yielded the highest results. Mothers who were highly elaborative provided the structural support needed for children to recognize appropriate methods for personal remembering with implications for independent reminiscing. This study supports the implication that children whose parents provide structure know how to achieve success more than those whose parents do not provide structure (Grolnick & Ryan, 1989) through guidance and the provision of necessary tools for success (Pomerantz, et al., 2005).

Skinner and colleagues (2005) also measured parent structure. They broadened their definition of structure beyond clear expectations and rules to include the extent to which the environment provides children with information about how to achieve their desired outcome. They contrast structure, which is competence supportive, with chaos which refers to parenting practices that are more unpredictable and interfere with providing a path to achieve a desired outcome and therefore may represent practices that inhibit competence. Parents were given a questionnaire that measured different dimensions of parenting including structure versus chaos. Structure items included, "I make it clear what will happen if my child does not follow our rules" and "I make it clear to my child what I expect from him/her" (p.205). Chaos items included, "I

let my child get away with things I really shouldn't allow", "When my child gets in trouble, my reaction is not very predictable," "I change the rules a lot at home," and "My child doesn't seem to know what I expect from him/her" (p.206). Children reported on items about structure like, "When I want to do something, my parents show me how" and "If I ever have a problem, my parents help me to figure out what to do about it" (p.218). They also reported on items about chaos such as, "When my parents make a promise, "I don't know if they will keep it" or "When my parents say they will do something, they don't really do it" (p.219). Structure was associated with perceived control, engagement, and self-worth.

Farkas and Grolnick (2010) interviewed children and asked them to describe their home and homework environment. Then they were asked six follow up questions that touched on the six dimensions of structure that they identified (see review above). The follow-up questions asked about the rules and expectations around homework, how consistent their parents were at maintaining the rules, what the consequences are for not following the rules, how parents convey information about how to better follow rules, whether anything in the home makes it hard to follow rules, and whether their parents tell them why they have rules. Each of these six follow-up questions was assessed on a 7-point likert scale reflecting the level of structure. The results revealed that the six components of structure were moderately correlated and supported this operationalization of structure as multi-faceted. Structure was also associated with competence, engagement, and achievement.

Overall, research has primarily focused on parents' competence support as structure. This narrow focus may not entirely capture parents' competence supportive practices. For instance, SDT researchers have not explored parents' instructional and scaffolding practices that may support competence.

Relatedness support. Relatedness is the need for feelings of closeness and connectedness with other human beings. It has been described throughout previous research as the most distal of the basic needs when associated with intrinsic motivation (Ryan & Deci, 2000). This may be as result of the fact that environments that support autonomy and competence are described as fostering choice and encouragement in a manner that promotes relatedness in the process, and therefore relatedness exists alongside the support of autonomy or competence (Gagne, 2003). Little research on relatedness support has been conducted, but theoretical conceptualizations describe caring, supportive, and encouraging environments as satisfying the need for relatedness (Grolnick, 2009). An autonomy supportive environment by definition indicates that parents care about their children's opinions enough to allow them to voice those opinions; therefore this type of parent involvement can also foster a caring and supportive environment which helps to satisfy students' need for relatedness (Grolnick, 2009). Parents can support their child's relatedness during homework by considering their personal interests or by taking their child's perspective into account during problem solving, therefore helping to make the child feel valued and supported (Grolnick, 2002). Acknowledging the child's feelings about an activity or their feelings about the rules established at home can also support children's relatedness needs (Cooper & Valentine, 2001). Parent involvement can also support relatedness as a product of the collaboration that takes place when parents work and communicate with their children about the homework assignment (Guthrie et al., 2000). On the other hand, little research has been conducted on relatedness inhibiting practices. As mentioned in the controlling section, an example of a practice that might be perceived as relatedness inhibiting is the withdrawal of affection when children did not comply with rules in a controlling home environment (Barber, 1996).

Very few studies have empirically studied relatedness, in the classroom or at home. One exception is Skinner and his colleagues (2005) who conducted a study on the six dimensions of parenting which represent the extremes of each of the basic needs. They use Barber's (1996) conceptualization of relatedness support, which is defined as a warm and loving environment between parent and child. They describe the polar opposite of relatedness support as rejection or hostility. Parents reported on the six dimensions of parenting through a 25-item scale. Items that represented warmth for example were, "I know a lot of what goes on for my child" and "I really know how my child feels about things." Items representing rejection were, "My child needs more than I have time to give him/her" and "I don't understand my child very well." Children reported on their sense of relatedness through items about how they feel when they are with their mother or father: (a) "I feel accepted," (b) "I feel like someone special," (c) "I feel unimportant," and (d) "I feel ignored." The results revealed that parents' warmth and rejection was the highest predictor, either positive or negative, of children's reported relatedness. Warmth and rejection were also associated with greater engagement and achievement (high for warmth and low for rejection).

Limited empirical research has identified specifically how parents can support or inhibit their children's relatedness need during homework. This may be especially important when considering the benefits of relatedness support in fostering the internalization of autonomy and competence (Ryan & Deci, 2000; Skinner et al., 2005).

Summary. While the vast majority of research on parent involvement through a self-determination theory lens has been quantitative, the few studies that have conducted qualitative analysis have reduced the data down to ratings, frequencies, or other numerical representations of the data for conducting quantitative analyses (Cleveland & Reese, 1995; Ginsburg et al., 2005;

Grolnick et al., 1991; Grolnick et al., 2002; Grolnick & Ryan, 1989; Pomerantz & Ruble, 1998; Pomerantz et al., 2005). Therefore, instead of using the rich data of the videotaped observations to describe the practices they observed, results were reduced to a scale. In addition, these studies did not take into account students' perceptions which are highly valued by SDT (Grolnick et al., 1991; Ryan & Grolnick, 1986). Utilizing student perceptions while maintaining the qualitative nature of the data could contribute to this literature by providing a rich description of students' perceptions of parents' practices and strategies for fostering their needs during homework.

The benefits of promoting children's basic needs during homework are extensive. By supporting their children's basic needs, parents can foster intrinsic motivation, greater enjoyment, interest, persistence, effort, and achievement (Ryan & Deci, 2000).

Therefore assessing the role of students' motivation may help to provide an explanation for the mixed relations between parent involvement with homework and academic outcomes. While the goal of this study is to identify and vividly describe the parent practices that may support or inhibit children's basic needs given the primacy of SDT in home-based parent involvement literature, other motivational theories may also contribute to more broadly conceptualizing high quality parent involvement.

2.3 Broadening a conceptualization of parent involvement

Beyond Self-Determination Theory, parent involvement may be more largely conceptualized through other motivational frameworks. The following sections introduce each of the motivational theories, review the subsequent outcomes for children's motivation, and finally each section reviews the literature on how the constructs from these theories may be supported by parent involvement

Self-regulation. Self-regulation refers to self-initiated learning that is cognitively, motivationally, and behaviorally directed through planning, monitoring, and regulation (Pintrich, 2000; Zimmerman, 1986). Students who are self-regulated set goals for themselves, adopt appropriate learning strategies, maintain motivation, and monitor and evaluate their progress (Zimmerman, 2000). This is especially critical in mathematics learning wherein problem solving requires goal setting, the selection of appropriate learning strategies, monitoring and evaluating progress, and sustaining motivation (De Corte, Mason, Depaepe, & Verschaffel, 2011; Schoenfeld, 1992). Self-regulation allows students to feel that they can manage their schoolwork on their own (Grolnick, 2009; Ryan and Deci, 2000) and is associated with competence (Zimmerman, 2002) and academic achievement (Pintrich & DeGroot, 1990). Parent involvement can help to promote self-regulated learning which is essential when students are working by themselves (Bembenutty, 2011).

Homework can help children develop skills for self-regulated learning and in return self-regulation is important for success during homework (Bembenutty, 2011; Ramdass & Zimmerman, 2011). Homework can help foster self-initiated and directed studying (Zimmerman, 2002). Children, however, are not instinctively self-regulated learners (Schunk & Zimmerman, 1998) and therefore parents can promote self-regulation by modeling behaviors that promote greater learning through the provision of structure (Grolnick, 2009). Moreover, parent involvement during homework can foster self-regulation skills like goal setting, managing their time during homework, and maintaining engagement during homework (Zimmerman, 2000).

In their study with six-graders, McCaslin and Murdock (1991) interviewed parents and their children about homework. Results suggested that parents were able to support self-regulation during involvement by modeling and reinforcing behaviors for how to control

negative emotions. Children in this study reported internalizing their parents' strategies for regulating their negative emotions and level of motivation during homework and described that they learned to calm their own anger and persist in the midst of frustration. Xu and Corno (1998) examined six parents' involvement during homework through a case study with third-grade children in which they identified potential parent practices for support of self-regulation during homework. They conducted interviews with children and their parents, videotaped two homework sessions, and conducted a follow-up interview with parents wherein they watched the tape of their homework session. They found that parents helped to promote self-regulation by structuring the homework environment and helping to regulate negative emotions and redirect motivation. Students whose parents were involved in promoting these forms of self-regulation reported more frequently managing their own homework space and being more mindful about controlling their emotions.

Self-efficacy. Self-efficacy refers to students' beliefs about their ability to complete or succeed in an academic activity (Bandura, 1986). While competence beliefs reflect one's overall concept of capability, self-efficacy beliefs can be conceptualized at the task and domain level (ie., geometry problems assigned in homework; mathematics). Bandura (1986) explains that students build their self-efficacy beliefs through four sources: mastery experience, vicarious experience, social persuasions, and psychological states. Mastery experience, the interpretation of one's prior performance, is the most prominent source of self-efficacy (Usher & Pajares, 2008). Vicarious experience is gained from the observation of other's accomplishments. Social persuasions are the interpretation of the judgment of others. One's mood, anxiety, or stress are the psychological states that provide information about self-efficacy beliefs. When children feel highly efficacious, they tend to report greater intrinsic motivation (Deci & Ryan, 1985) and their

academic achievement is positively impacted (Schunk & Pajares, 2002; Wigfield et al. 1997). Self-efficacy beliefs are also related to greater effort, persistence, and self-regulation (Schunk & Zimmerman, 2006; Zimmerman, 2000). More specific to the context of this dissertation is math self-efficacy which is one's judgment of their capability to perform math related tasks (Betz & Hackett, 1983). Children's mathematical efficacy is predictive of problem solving ability and anxiety for mathematics (Pajares & Miller, 1994). It has been found to mediate the effects of children's attitudes towards math and their achievement in math (Randhawa, Beamer, & Ludwig, 1993).

Limited research has studied parents' support for math self-efficacy during homework. However, Meece (1997) and Bandura (1997) suggest that a warm and responsive home environment can promote self-efficacy through curiosity and enhanced learning. In addition, they indicate that parents who promote optimal challenge and encourage effort will also foster greater self-efficacy beliefs. Bandura (1997) also explains that since children acquire knowledge through observation of others, parents can promote self-efficacy by modeling behaviors that can inform students' instructional practices.

Achievement Goal Theory. Achievement goal theory describes the different purposes or reasons that direct behaviors when engaging in an activity (Dweck & Leggett, 1988; Harackiewicz, Barron, & Elliot, 1998). A mastery goal, also called a learning or task goal, is conceptualized as aiming to learn, improve, and understand a given task (Pintrich, 2000; Midgley, Kaplan, & Middleton, 2001). Students who espouse performance goals may either endorse performance-approach goals, being motivated to engage in an activity to demonstrate their competence in comparison to others, or performance-avoidance goals, being motivated to avoid failing or looking incompetent in front of others (Pintrich & Schunk, 2002). Students who

are mastery oriented persist when encountering a difficult task, employ deep-level learning strategies, and seek out challenging problems (Dweck & Leggett, 1988). In addition, students with a mastery goal orientation, are more persistent, show greater effort during difficult tasks, and report greater self-efficacy (Ames, 1992; Midgley & Urdan, 1995; Pintrich & Schunk, 1996; Urdan, 1997). Although some research states that performance goals are largely maladaptive (Midgley, et al., 2001), some research on performance goals indicates that the distinction between performance- approach and performance- avoid goals clarifies that it is performance- avoid goals that are associated with the maladaptive outcomes (Church, Elliot, & Gable, 2001; Harackiewicz et al., 1998). Performance-approach goals have been associated with achievement (Harackiewicz et al., 1998). Research on promoting mastery goals has focused on the classroom. Through certain tasks or classroom rules, teachers may convey a specific goal structure in the classroom (Ames, 1992). Classrooms that support mastery goals tend to have teachers who stress understanding and acknowledge effort in the classroom (Ames, 1992).

Little research has been conducted on the influences of parent involvement on students' goal orientation, but some studies have extended beyond the classroom and into the home. Friedel, Cortina, Turner, and Midgley (2007) assessed parents' mastery goal emphasis through survey items that asked if children believed that their parents wanted them to understand math concepts, try challenging problems, learn from their mistakes, and really work hard at math. They found that children's perceptions of their parents' goal emphases were associated with children's own personal goals. Moreover, they found that children were more strongly influenced by the goals emphasized by their parents relative to their teachers, especially performance goals. Gutman (2006) studied the effects of student and parent goal orientations on mathematics grades and self- efficacy. Parents' goal orientations were assessed through a single open-ended question,

“what do you think are the most important goals for your child to reach in school this year?” (p.52). Parents who defined a focus on understanding and mastering their academics were identified as mastery oriented while parents who emphasized a focus on demonstrating grades and performing better than others were identified as performance oriented. Gutman found that students whose parents encouraged mastery goals at home were more likely to have higher academic achievement. Gonzalez and colleagues (2001, 2002) found that controlling home environments that emphasized obedience and conformity were associated with performance goal orientations in children, while less controlling home environments that emphasized autonomy were associated with mastery goal oriented children (Gonzalez, Gordon, Jin, 2001; Gonzalez, Holbein, Quilter, 2002).

Expectancy x Value Theory. The model of expectancy x value theory indicates that expectancy and values impact persistence, performance, and task choice. Children’s beliefs about how well they will perform on a future task is identified as their expectancy for success (Eccles et al, 1983), and is conceptually similar to self-efficacy and competence. Given the conceptual overlap, we focus our review on the role of parental expectations as an extension beyond these related motivation constructs. Eccles identifies four components of task value: utility value, intrinsic value, attainment value, and cost value. Value for future or current goals is utility value. Intrinsic value is the pleasure the individual gets from doing the activity, which is conceptually similar to interest. Attainment value refers to one’s own feeling of the importance of doing the task in relation to one’s own identity. Cost value refers to the negative aspects of engaging in the task such as fear of failure or anxiety. This study focuses on utility value in terms of the perceived usefulness of a learning mathematics such as the real world benefits of mathematics or the need to learn mathematics for other future goals like college or a specific career (Eccles,

Wigfield, & Schiefele, 1998). The combination of students' expectancy and value best predict engagement and achievement (Eccles et al., 1998). More specifically for mathematics, children's expectations for success in math as well as the perceived value for math predict math achievement (Singh, Granville, Dika, 2002).

This motivational perspective takes up the role of parent expectations for children's learning. Parent expectations have been operationalized as the beliefs that parents have about their children's future achievement (Jeynes, 2005a; Yamamoto & Holloway, 2010). This has been conceptualized through beliefs of their children's future grades in a subject domain or overall as well as what they believe their child's highest level of education will be (Jeynes, 2010; Rutchick, Smyth, Lopoo, & Dusek, 2009; Yamamoto & Holloway, 2010; Zhan, 2005). Parents' expectations of their children's achievement were found to have a significant impact on children's expectancy for their own achievement (Benner & Mistry 2007; Carpenter, 2008; Eccles-Parsons, Adler, Kaczala, 1982; Jeynes, 2005a; Rutchick et al., 2009). Rutchick and colleagues (2009) conducted a longitudinal study with 884 elementary and middle school children that exhibited the long-term effect of parents' expectations on children's expectations of their own achievement. Parents' expectations of their children's achievement influenced children's expectations and their actual performance five years later, even when controlling for children's baseline achievement. Parents' expectations can also have an impact on students' self-efficacy beliefs as children may internalize their parents' expectations of their ability (Benner & Ministry, 2007; Eccles-Parsons et al., 1982; Eccles et al., 1998). Benner and Mistry (2007) conducted a study with 522 children from elementary to high school and their mothers in order to assess the role of maternal expectations and children's ability beliefs. Their study revealed

mothers' expectations influenced their children's self-efficacy beliefs as well as their ability to learn new concepts in mathematics.

Parents' expectations can become a form of communication that subtly conveys to students how much they value education overall or a specific domain and how important their success is (Jeynes, 2010). When children value a task, they perceive that task as useful and beneficial in the real world, which promotes learning and achievement (Eccles & Wigfield, 2002). Children's value of homework is fostered by parents' value for the benefits of homework, which can be conveyed through parents' actions such as helping, checking up on the child, and communicating about the importance of homework (Warton, 1998; 2001). In a study of 759 students, Choinard, Karsenti, and Roy (2007) investigated students' perceptions of their parents' attitudes about mathematics including how much they felt their parents valued mathematics. Their findings revealed that parents' perceived utility value of mathematics influenced children's value of mathematics.

Parents' values and expectations may influence their children's values and choices. Overt actions of highlighting their expectations and values (ie., through rewards) may undermine students' intrinsic motivation and reduce the internalization of parents' values and expectations (Jacobs & Eccles, 2000). An environment that is supportive of children's basic needs may help minimize the negative effects of parents' expectations and values, which may influence children's self-perceptions (Jacobs & Eccles, 2000). For instance, by supporting their child's autonomy, a parent may allow the child the ability to make their own choices about the activities they participate in while parents can structure an environment that fosters high expectations and value for academics.

Intelligence beliefs. Not all children view their intelligence the same way. As children age and develop, their beliefs about intelligence and ability may begin to mature and become clearer; this will influence their motivational pattern (Dweck, 2002). Children with an entity view attribute success or failure to intelligence. They perceive intelligence as stable and unchangeable therefore they are concerned with task performance and their success outcomes (Dweck & Leggett, 1988). Children with an incremental view attribute success or failure to effort or a change in their strategy. They perceive intelligence as malleable and therefore believe that with effort, one can improve their intelligence (Dweck & Leggett, 1988). Students with an incremental view of intelligence tend to be more mastery oriented and focused on effort while students with a fixed entity of intelligence tend to have more performance goals (Dweck, 2000; Hokoda & Finchman, 1995).

Pomerantz, Grolnick, and Price (2005) describe parent practices that convey an incremental view of intelligence, express the importance of effort and learning as acknowledging hard work in successful situations. They refocus frustration by emphasizing the learning process, emphasizing hard work not grades, and helping the child to develop useful problem solving strategies. Parent practices that have an entity view of intelligence stress stable characteristics which include praising intelligence in response to success, displaying disappointment in response to bad grades, and focusing on the end product without emphasizing the learning process. In an observation study, Fleming, Sawyer, and Campbell (2011) videotaped mothers and their elementary aged children as they worked on a laboratory task. Mothers who were more concerned about the end result rather than the learning, emphasized time management and making sure the task was complete rather than understood. Mothers who were more focused on learning used language such as “you tried” or “you did your best”. Children whose parents

emphasized learning were more likely to be mastery oriented and children whose mother's emphasized performance were more performance oriented. Mueller and Dweck (1998) found that parents who praise their child's ability may promote a fear of failure causing children to avoid tasks that would overly challenge them. However, praise that is process focused highlights the child's effort and this can promote effort and persistence (Kamins & Dweck, 1999).

Summary. Assessing the role of students' motivation may help to elucidate or provide varying explanations for the mixed relations between parent involvement and academic outcomes with homework. Motivational research may help to identify the variation in the quality of parents' practices when considering how these practices impact student motivation. By more broadly identifying parent practices supportive of motivation, this can help to elaborate a description of quality parent involvement. An integration of these theoretical perspectives may also inform what motivational practices remain unaccounted for within a SDT lens.

Many of these motivational frameworks are related to the principles of SDT. For instance, controlling home environments likely also foster performance goals while more autonomy supportive home environments may promote mastery goals. In addition, an environment that is supportive of children's basic needs may help mediate parents' expectations and values by allowing children to choose the activities that they value while structure at home may help children achieve the high expectations their parents want to foster. Finally, a warm and responsive home environment can promote self-efficacy by fostering curiosity and encouraging enhanced learning. Therefore many other motivational theories also explain the variation of quality parent involvement through SDT. This potentially supports the vast amount of research that conceptualizes high quality home-based parent involvement through SDT.

While past research has been successful in describing how parents can support their child's basic needs during homework, there are some limitations that warrant extension. Most of this research has primarily focused on autonomy supportive versus controlling involvement during homework (Cooper et al., 2000; Ginsburg & Bronstein, 1993; Grolnick et al., 2002; Grolnick & Ryan, 1989; Pomerantz et al., 2007), with few studies focusing on all forms of competence and relatedness supportive and inhibiting practices. The studies that do mention competence and relatedness support, primarily do so in relation to autonomy support, which is seen as the overarching need that must be satisfied first in order for other basic needs to be supported (Jang et al., 2010 Ryan & Deci, 2000; Skinner & Belmont, 1993). No studies of which I am aware, describe parental practices that support and inhibit all three basic needs during homework. Research that examines how home-based parent practices support all three basic needs as independent from each other is important because students may respond differently to the support or inhibition of each of the basic needs (Ryan & Deci, 2000).

The literature is still limited in its description of parents' practices for supporting or inhibiting each of these needs during homework. This is especially important considering the predominant focus on survey research with analyses linking quality parent involvement to satisfying children's basic needs (Dumont et al., 2011; Grolnick & Slowiaczek, 1994; Grolnick, Ryan, & Deci, 1991; Hoover-Dempsey et al., 2001; Patall et al., 2008; Pomerantz et al., 2007).

The qualitative research that has assessed parent practices has done so through interviews, observations, or checklists (Cooper et al., 1998; Grolnick et al., 2002; Hoover-Dempsey et al., 1992; Pomerantz & Ruble, 1998). Regardless of the employed methodology, most reviewed studies reduced the data down to ratings, frequencies, or other numerical representations of the data for conducting quantitative analyses (Grolnick et al., 1991; Grolnick

et al., 2002; Grolnick & Ryan, 1989; Pomerantz & Ruble, 1998; Pomerantz et al., 2005). As a consequence, rather than maintain the rich qualitative observations to describe parent practices, results are reduced to a rating to be employed in subsequent quantitative analyses. While this type of quantitative focus afforded the examination of the relations between parent involvement, motivation, and academic outcomes, they have not been used to provide rich and thick description of parents' practices and strategies for fostering students' needs during homework.

The few studies that have maintained the qualitative nature of the data do so largely in the context of laboratory practices (e.g., Grolnick et al., 2002). This is a significant limitation given that researchers have observed parents interacting around puzzles and games, and not during children's typical homework in their natural setting (Grolnick et al., 2002; Grolnick et al., 2007; Ng et al., 2004). There also studies that have maintained the qualitative nature of the data by employing interviews, but these have not been grounded in SDT (Chen et al., 1999; Hoover-Dempsey & Sandler, 1995; McClasin & Murdok, 1991; Shumow, 1998; Xu & Corno, 1998). Their rich descriptions of parent practices shed light on some practices which may support students' basic needs. However, research that employs a SDT lens is a critical addition to this work, because it can provide consistency when referring to the practices and can help to distinguish high quality involvement from low quality involvement through basic needs support.

In addition to characterizing parent practices independently that support or inhibit children's basic needs, it is important to explore the interaction of these practices in order to identify potential patterns of parent involvement during homework. The limited methods of previous research have examined each basic need in isolation (Grolnick et al., 2002; Gurland & Grolnick, 2005; Pomerantz & Ruble, 1998). Within the context of parent involvement that promotes or impedes basic needs, this type of more variable-centered approach does not consider

how parents employ supportive and inhibitive practices concurrently and in combination during homework might respond in terms of their outcomes. It is especially important to consider profiles of parent involvement identified through patterns that constitute high, low, and mixed quality involvement as defined by parents' level of supportive and inhibitive practices during homework.

2.4 Role of Parent Characteristics & Context

The above review has considered how parents can support motivation during homework by differentiating the quality of parent involvement. Here, this review is extended to explain reasons *why* parents may vary in their quality of homework involvement in light of parent characteristics and contextual features. Here, we draw largely on Hoover-Dempsey and Sandler's (1995, 1997, 2005) model, and recent updates by Walker, Wilkins, Dallaire, Sandler, and Hoover Dempsey in 2005, which focus on understanding why parents become involved in their children's education. Within this model, Hoover-Dempsey and colleagues specify that parent motivation for involvement is characterized through three major sources that may have an impact on whether or not parents get involved during homework and how they are involved. Their most recent model of parent involvement identified three reasons for involvement, "(1) Parents' motivational beliefs (2) their perceptions of invitations for involvement from others¹; and (3) their perceived life context." In our review, we turn first to parent motivational beliefs.

Parent Characteristics. Within parents' motivation for involvement are parents' role construction and their self-efficacy (Hoover-Dempsey et al., 2005). Parents' own beliefs about their responsibilities in taking a role in their children's education inform their personal role construction. Parents' role construction is influenced by their own expectations and beliefs about

¹ This reason is not discussed in the literature review since it overlaps with solicitation from the child which reviewed earlier.

how children develop and the appropriate role they should take in their child's schooling.

Parents' role construction influences their involvement in that it identifies the range of activities that parents value and believe are acceptable for their engagement. In addition, their understanding of their parental role may be modeled from their own parents or the overall social context such as the other parents they are around. Parents who view their involvement as a part of their responsibilities as parents, report a greater level of involvement (Deslands & Bertrand, 2005).

A second characteristic accounted for within this model is parents' own self-efficacy beliefs, or the perceptions of their ability to actually contribute to their child's success in school. Parents' perceptions of their ability to help complete the homework as well as their ability beliefs within that specific domain impact their involvement (Hoover-Dempsey & Sandler, 1997; Hoover-Dempsey et al., 1992). Parents' perceptions may be exacerbated in a domain like mathematics where anxiety may be more prominent than other subjects (Ashcraft, 2002). Mathematics anxiety is the feeling of apprehension towards mathematics that causes individuals to avoid engaging in the subject (Ashcraft, 2002). Parents own anxiety about mathematics or their sense of self-efficacy in mathematics may be concerning to them. As a result, parents' self-efficacy within mathematics may influence the quality of their involvement. Shumow and Lomax (2002) interviewed 929 children and their parents and broadly measured parents' self-efficacy, their involvement, and children's outcomes. They found that parental efficacy predicted parent involvement and parental monitoring and that parents with a high sense of self-efficacy for helping their children succeed are associated with greater levels of involvement.

Parents' involvement may vary depending on what they believe they are capable of helping with and what they believe they should help with. For instance, Schnee and Bose (2010)

conducted a study where they interviewed parents on their involvement practices and found that parents' engaged in a multitude of practices that were primarily shaped by their goals for their child's success and their mathematical ability to help the child. They found that this accounted for the quality of parents' involvement in terms of what practices they engaged in (ie., checking, monitoring, or helping) and why they might engage in certain practices but not in other practices. More specifically, a parent might not be able to provide the mathematical assistance a child might need because they have difficulty with mathematics, but they may provide support in more domain-general ways such as by checking for homework completion or they may provide resources to the child like a quiet place to do homework.

Contextual Influences. Parents' perceived life context includes parents' perceptions of their availability and energy to provide involvement as well as their skills and knowledge. This model hypothesizes that parents' life context moderates the relationship between the other constructs. Varying circumstances may contribute to parents' availability to help their child during homework. Some parents may work during evenings when their children need help with homework, other parents may have other children who need their attention during homework, and some parents may not have the level of education needed to help their children (Lareau, 1989). This dissertation extends Hoover-Dempsey's considerations of context to include other contextual indicators such as a curricular context and an urban context. .

Reform-based curriculum context. Parents' self- efficacy beliefs are influenced by their perceptions of their ability to help within the domain and this may be compounded in a context where their children's curriculum is novel to them. One of the more popular reform-based Mathematics curriculum is the Everyday Mathematics curriculum (University of Chicago School Mathematics Project, 2001). While this curriculum suggests positive correlations with

achievement (Carroll, 1997), it also creates challenges for parents who have stated that the curriculum made assisting their children with homework complicated, because they did not always understand the homework and had difficulty helping (Jackson, 2011; Remillard & Jackson, 2006; Schnee & Bose, 2010). Peressini (1998) noted that parents are seen as barriers to mathematics reform. Mathematics reform does not take into account parents' expectations about how mathematics homework might look or their thoughts on the difficulty that arises from this discrepancy between parents' and children's views on how mathematics looks (Schnee & Bose, 2010).

One reason parents face difficulty is that the new curriculum asks students to solve problems using strategies that may be different from how parents learned to solve the problem. This may have consequences for how parents support student's basic needs. First, by feeling less capable in providing instructional assistance, parents may consequently not be able to provide sufficient support for their child's competence. In addition, parents' preference for their traditional approach to solving a problem (Lubienski, 2004), may result in an autonomy inhibiting approach to involvement as they try to control the solution strategy employed in areas in which they feel comfortable. Finally, if parents do not feel capable helping with their child's homework, the potential of quality interactions during homework may be diminished, potentially leading students to feeling a lower sense of relatedness during homework.

Other practices for supporting students' basic needs may be especially important for parents who struggle with instructional means for helping their child with their homework, which may be the case for several parents using the Everyday Mathematics curriculum (Remillard & Jackson, 2006; Schnee & Bose, 2010). For example, McCaslin and Murdock (1991) found that even though parents could not directly assist students with homework in an instructional manner

because of a language barrier, they were able to support students' needs by helping their children cope with emotional problems that arose during homework. As a result, children learned to develop strategies for appropriately doing homework on their own, which may be key to promoting achievement in an urban context.

Urban context. Urban parents tend to be engaged in more home-based involvement than suburban parents who tend to be more involved at school (Eccles & Harold, 1996). Home-based parent involvement has been associated with poor academic performance for students of low SES (Cooper et al., 2000). Previous research on parents in low SES communities suggests that this may be a result of urban parents' limited resources which may hinder their ability to help their child with homework; however they are highly involved and effortful in seeking the necessary resources to help their children during standards-based homework (Remillard & Jackson, 2006). This disparity may be compounded in urban districts that use new reform-based curriculum, like the district in this study, and their unfamiliarity with the curriculum may lead to more controlling forms of involvement, such as monitoring (Peressini, 1998).

This suggests a possible variation in parent's support of their children's basic needs in a low SES context. Moreover, ethnic minorities were found to more commonly implement authoritarian parenting practices, which are identified as more controlling, however they are not associated with negative child outcomes as they are with Caucasian parents raised with an authoritarian parenting style (Jambunathan, Burts, & Pierce, 2000). This suggests a need for considering the perceptions of ethnic minority students and their perceptions of high quality parent involvement during homework which may or may not match prior conceptualizations from the literature.

African American parents. Prior research has explored parental support for psychological needs of primarily middle-class Caucasian parents, but these findings may be less generalizable to parents of all races partially because of the differing experiences their children have in school. Danny Martin (2000, 2012) has argued that mathematics learning of African American students has been not been the same as that of their peers. Martin (2006) described mathematics identity as an individual's beliefs about their mathematics ability as well as how others view them in the context of doing math. Martin (2006) found that African American students' mathematics identity had an influence on their mathematics achievement. Tucker and Herman (2002) suggest that the most pressing academic issue impacting achievement for African American students is their lack of empowerment or feelings of being able to overcome challenges or have control over one's own learning, which stems from feelings of low competence. This may also be a result of students' perceptions of low autonomy or competence due to their perceptions of a lack of control and achievement disparities related to their own learning. Nonetheless, parent involvement is a critical factor in the academic success of African American students (Epstein, 1995).

Latino parents. Much like African American students, Latino students may also experience education differently. Cultural differences like language barriers, poverty, or limited parental education may influence Latino students' opportunities for academic success (Bohon, Macpherson, & Atilas, 2005). Due to these factors, parent involvement for Latino parents may take a different shape than expected (Walker, Ice, Hoover-Dempsey, Sandler, 2011). Latino parents may be more likely to engage in controlling practices since students suggested having low autonomy, reporting a mismatch between their ideal behaviors and their actual behavior (Sher-Censor, Parke, & Coltrane, 2011). In addition, Latino students may experience low

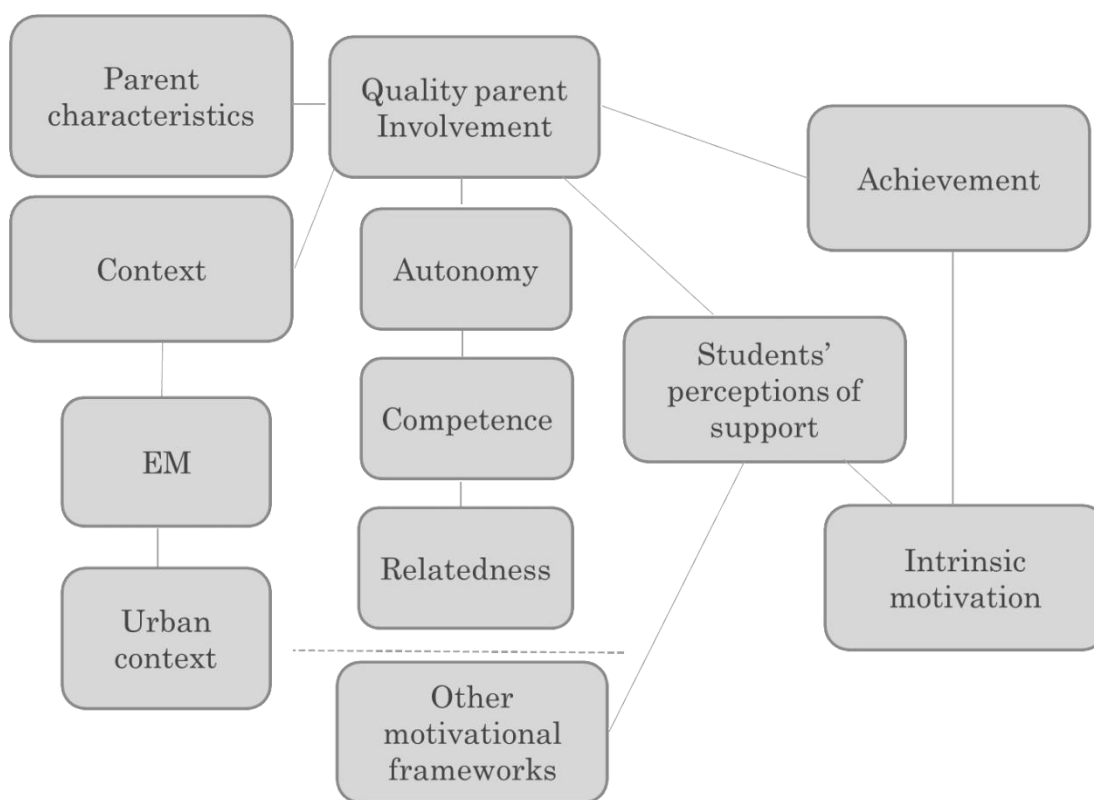
competence beliefs as a result of a disparity in mathematics achievement (Stevens, Olivarez, Lan, & Tallent- Runnels, 2004). As a result, Latino students' perceptions of low autonomy at home or low competence in mathematics may shape their response to their parents' involvement. Considering the significance of taking into account children's different experiences, it is important to understand how this may shape parents' practices during mathematics homework and how these children perceive these practices as being supportive or inhibitive of their basic needs.

Summary. The vast literature on parent involvement in homework has attributed the achievement disparity to the manner in which parents are involved during homework. Therefore, the quality of parents' involvement during homework may be the best explanation for the mixed achievement results. The quality of parents' involvement may be influenced by many factors that subsequently can impact students' achievement. Parents' characteristics including the context of the EM curriculum and an urban context can influence the quality of parents' involvement as outlined through SDT and the perceived satisfaction of students basic needs which promotes intrinsic motivation subsequently fostering achievement (see figure 2-1). Bridging the benefits of Hoover-Dempsey and Sandler's parent involvement framework (1995, 1997, 2005) and SDT allows for a richer understanding of the quality of parents' involvement by accounting for parents' reasons and role construction as well as children's perceptions of the motivational involvement. In addition, it is also important to consider how parent involvement may be more largely conceptualized through other motivational frameworks beyond SDT. Figure 2-1 below captures the theoretical framework guiding this study.

Since current motivational research on parents' involvement tends to focus on primarily middle-class Caucasian parents in suburban settings, this may lead to theories of parental support

for psychological needs that are less generalizable to parents in urban districts and of minority backgrounds. In addition, this research has largely observed and interviewed parents during laboratory tasks and traditional homework, contexts which are likely to be experienced as familiar for parents. Examining parent involvement during standards-based mathematics homework affords the naturalistic observation of parents' involvement practices during potentially challenging tasks. The nature of the challenging task has implications for SDT as well as parent involvement frameworks. It is then essential to have a rich description of parents' involvement practices that are facilitative or inhibitive of children's psychological needs within the context of a standards-based mathematics curriculum and an urban context, represented during actual homework interactions.

Figure 2-1: Theoretical Framework



2.5 Pilot Studies

The goal of this dissertation is to identify, describe, and characterize parent practices during homework that support or inhibit children's need for autonomy, competence, and relatedness and their reactions to these practices in terms of motivation and achievement. This dissertation attempts to add to the understanding of home-based parent involvement of parents in urban cities with a reform-based curriculum. Toward these goals, I have previously conducted two pilot studies that have also informed the specific questions and further the agenda of this dissertation research. Below I review key findings stemming from my pilot work and specify how my dissertation will build from this research.

The first study considered the influence of parental support for encouraging children's motivation and achievement outcomes (Rashid, Rogat, Ginsburg, 2009). Correlational analyses revealed relationships between students' perception of basic needs support and motivation, as well as students' reported motivation and their achievement. More specifically, students' perceptions of parent autonomy support was positively correlated with their reported math homework mastery goals and marginally related to value, which suggested that students who reported higher quality parent autonomy support benefited in terms of their espousing mastery (learning driven) goals for math homework and a valuing of mathematics. Children's perceptions of their parents' competence support were correlated with reported competence for math homework, which seemed to imply that children's competence during math homework is related to their parent's competence support.

Subsequently, this study explored the parent-reports of three participants regarding their autonomy and competence supportive practices during homework. Coding and analysis of parent interviews distinguished between low and high quality parent involvement, given association

with basic needs. The interviews revealed that while all parents reported being involved during homework, there was variation in the quality of their involvement which was grounded in the degree to which they provided autonomy and competence support for their children. More specifically, to conceptualize high quality parent involvement required going beyond checking for completion, monitoring homework, or interpreting homework problems. Children seemed to benefit most when parents supported competence by providing opportunities for sharing math strategies and receiving additional instruction. They also seemed to benefit when given autonomy support via the opportunity to select the methodology they used or when they were the ones initiating help. Lower quality help was characterized by minimal involvement characterized by simply monitoring that homework was taking place, checking only for completion, or not being able to provide instructional support. Parents' controlling practices were represented by practices such as monitoring, imposing help without waiting for the child to request it, checking homework only for completion, and implementing rewards and punishment. Finally, the reform-based mathematics curriculum was not found to be a roadblock to parent help during homework for parents who were highly math competent.

The second pilot study aimed to richly describe a fuller range of parents' involvement practices for supporting and inhibiting all three basic needs (Rogat, Rashid, & Ginsburg, in preparation). In addition, this study drew on a larger sample of fifty-five parents to assess whether the initial exploratory designations of parents' practices could be confirmed. Results extended the current conceptualization of practices that can support or inhibit basic needs during standards-based mathematics homework. The findings were primarily in line with previous literature, but some specifics related to this population and curriculum emerged. This study found that parents' employed practices were influenced by the EM curriculum context. Parents

reported having low self-efficacy for the curriculum and homework materials, which made involvement more difficult. Parents and children used different methods for solving math problems, with parents relying on more traditional mathematics strategies focused on procedures, which provided opportunities for supporting or inhibiting autonomy and competence. The following few paragraphs provide specific examples of the findings of how parents' methods were different given the curricular context.

Competence supportive practices were most prevalent during involvement. Competence supportive practices were provided through instructional support, by encouraging mathematical explanation, going beyond by challenging children, and advancing mathematics skills outside of school, and providing structure as conceptualized through self-determination literature. Given parents' experienced difficulty with standards-based mathematics strategies, parents invested effort to work with their children to apply EM solution strategies, introduce a traditional strategy to assist in solving problems, and seek to actively bridge their child's preferred strategy with their own traditional strategy. Parents inhibited their child's competence by withholding instructional support and criticizing their child's strategies. Some parents explained that they employed minimal support in order to avoid fostering misunderstanding given their own limited knowledge of the methods.

Parents engaged in autonomy supportive practices by allowing their child to partake in selecting their homework routine, and promoting independent problem solving. These practices were in line with extant literature on autonomy supportive environments, but the practice of providing their child with strategy choice was more novel. Seventeen parents reported that they allowed their child to choose their preferred problem solving strategy. Given parents' struggles with understanding their children's method of problem solving, parents could have required their

child to solve problems their way. Instead, this unique context provided another opportunity for parents to promote autonomy by allowing their child to choose their own preferred methodology. However, because parents allowed their child to choose their preferred strategy as a result of their own low competence beliefs for the mathematics and curriculum, it is possible that their enactment of this particular practice may not afford the same autonomy supportive benefits. Parents inhibited their children's autonomy by monitoring homework without solicitation from their child and enforcing punishment or giving rewards. While parents' intent may have been to promote compliance with homework routines, similar to structure, these practices were described as intending to regulate misbehavior. This is an interesting tension with structure which is focused on promoting autonomous regulation, which separates the benefits of structure from the potential detriments of controlling behavior.

Although very little research focuses on relatedness support, this study sought to identify parent practices that could potentially support relatedness. By bonding with their children during homework and helping them deal with frustration, parents were able to demonstrate their care for their child, therefore supporting relatedness. In contrast, homework could evoke stress in both parents and children which could inhibit relatedness. If a parent is having difficulty helping their child, they may become stressed and unable to support their child's competence or autonomy.

The findings of these studies contribute to the field by building from theoretical conceptualizations of parents' need-supportive practices to consider the influence of a reform-based curricular context that introduces challenge given parents' knowledge and skills that are grounded in traditional mathematics. In addition, they identified practices that inhibited competence and those that inhibited and supported relatedness which helps to fill a gap in the literature.

While these two pilot studies addressed several of the limitations of previous research on parent involvement and basic needs support, there were some limitations that the current study attempts to address. First, this earlier research was part of a larger study on parent involvement during mathematics, and consequently the interview protocol was framed to examine parent involvement more broadly, but was not specifically geared to assessing parents' practices that facilitate basic needs. Questions that are directed at parental report of practices that foster autonomy, competence, and relatedness may result in more elaborated and specific findings. A second limitation was that children were not interviewed; therefore the previous results were only one interpretation of parent-reported practices that did not account for a child's perspective. This may have resulted in making assumptions about which parental practices promoted or undermined children's psychological needs. Next, the previous studies relied on parent retrospective reports of their involvement practices, but parent-child interactions were not observed during homework. Direct observation of parent practices during homework interactions in a natural setting affords a more objective interpretation of parent practices with the reform-based curriculum and it allows students and parents to reflect on practices they just engaged in. Finally, the focus of the research was characterizing a range of practices, and as a consequence each practice is treated independently of one another. It is important that future research account for how parents use practices in combination and in interrelated ways.

2.6 Current Study

This study informs prior research regarding the mixed results for parent involvement during homework and achievement, and employs a motivational perspective as an explanation for those findings. Here, one potential motivational explanation for the mixed relations with achievement concerns the role of parent practices in supporting or undermining students' basic

psychological needs, as well as through other motivational supportive practices. The extent to which parents use practices during homework that promote children's psychological needs can support intrinsic motivation and ultimately achievement (Ryan & Deci, 2000). Past literature has primarily differentiated autonomy supportive from controlling practices, with some work on parents' provision of competence and relatedness support, given a sample of Caucasian parents living in suburban districts. The aim of this study is to examine observations of parent and child homework interactions alongside their reports in light of facilitating or hindering children's psychological needs for participants in urban cities employing a reform-based mathematics curriculum. The goal of this research is to identify and richly describe how in this context, students perceive parent practices that support and inhibit some or all of their basic needs for autonomy, competence, and relatedness, and how parents' use of these motivational practices in combination may impact the quality of parents' involvement.

This proposed study extends prior research in four primary ways. First, previous basic needs research has not focused on providing rich description of parents' supportive and inhibitive practices during homework in a natural setting. By implementing interviews and observations during parent-child interactions at home, and maintaining the qualitative and descriptive nature of the data, this study will help to inform how urban parents in reform-math contexts support psychological needs and how they may subsequently inhibit them. Second, this study will examine children's interpretations of their parents' homework practices as being supportive or inhibitive of their basic needs and assess the match between children's perceptions of basic needs support and parents' intentions/reports as well as children's reactions to actual enactment of involvement practices, which may shed light on their reactions to these practices in terms of motivation and achievement. In addition, comparing parents' intentions for supporting

or inhibiting basic needs to children's perceptions of parents' practices as supportive or inhibitive may add to the literature on the mixed achievement results for parents' involvement in homework.

Third, it is critical to examine how parents use motivational practices in combination. Accordingly, this research identifies the profiles of parents who were primarily supportive or inhibitive of their child's basic needs and those that were equally mixed. Assessing patterns within profiles of parents engaging in student perceived high, low, and mixed quality involvement may help extend research on parent involvement in homework. This study will provide thick description and examples of parental practices facilitating and undermining students' basic needs. In addition, research on self-determination theory has not looked at the outcome of intrinsic motivation when basic needs are supported and inhibited in combination.

In order to do this, seven parent-child dyads from a fourth grade elementary classroom in urban city in New Jersey were observed while the child completed their regular math homework as well as two Everyday Mathematics' homework assignments. Parents and children were then interviewed about their homework practices. Children were also interviewed about their motivation for mathematics and homework. Accordingly, this dissertation richly characterized the range of autonomy, competence, and relatedness practices employed by parents of elementary schoolers within a standards-based mathematics homework context to account for how this particular context informs selected involvement practices. Ultimately, three of those dyads each representing high, mixed or low motivational support were selected for closer case study analysis with the intention of examining how parents employ motivational practices in combination at home during homework and the subsequent impact on children's motivation and achievement.

2.7 Research questions:

1. What practices do parents employ during homework that their children perceive as supportive or inhibitive of their basic psychological needs, for parents from an urban district employing standards-based mathematics curricula?
2. What profiles of parent involvement constitute high, low, and mixed quality involvement as defined by parents' level of supportive and inhibitive practices during homework?

Chapter 3: Method

3.1 Participants

This study was conducted in one public school in an urban New Jersey district. The racial and ethnic make-up of the school is composed of 60% Latino and 39% African American students. The students in the school came from primarily low income families, with 73% of the students in the school receiving free or reduced lunch. In this school, 43% of the students in the third grade, 60% of the students in the fourth grade, 48% of the students in the fifth grade met the state's test standards in Mathematics in 2009. The state average was 75%, 73%, and 77% respectively.

Students and their parents were drawn from a participating fourth grade teacher's two mathematics classrooms. All students in participating mathematics classes were sent home with a permission slip for their parents asking for contact information if they were interested in hearing more about the study. All students were asked to return the permission slip with either a check indicating they did not wish to hear more about the study or a check indicating that they would be willing to hear about the study and provided their contact information. Each student was informed that they would receive a goody bag containing a pencil, notebook, eraser, and stickers if they returned the permission slip signed whether their parent checked yes or no.

Of the 43 students, nine students did not bring the permission slip back, nineteen permission slips indicated that parents declined to hear more about the study, and fifteen parent and student dyads selected yes and provided contact information. One parent immediately withdrew stating that her child selected yes when she said no. Three other parents could not be reached after multiple attempts. Two parents declined to allow their child to be videotaped and therefore withdrew. Seven parents agreed to participate, being interviewed and observed during a single homework session (see Table 3-1 for demographic information). Of the seven parent/child dyads, 3 were a mother/ daughter dyad, 3 were a mother/ son dyad, and 1 was a father/ daughter dyad.

Table 3-1: Dyad demographics

Child	Parent interviewed	Race
Aisha	Mother	African American
Jorge	Mother	Latino
Kina	Mother	African American
Lamar	Mother	African American
Sherri	Mother	African American
Tina	Father	Latino
Zaire	Mother	African American

Jorge. Jorge is a Latino student who speaks primarily Spanish at home. He lives with both of his parents and his siblings. His cousins lived nearby and came over often during homework time. Jorge translated the interview questions for his mother and translated her responses back to English. He also had to translate any questions he had from English to Spanish and back to English again. Jorge's mother explained that she felt confident in Mathematics and that the EM curriculum wasn't a problem, but that her only barrier was the English. Jorge received an A in mathematics, had 98% homework completion for the year, and reported high

motivation during homework such as self- regulation, intrinsic motivation, high self- efficacy, mastery goals, and positive affect.

Kina. Kina is an African American girl who lives with her parents and sisters. Kina and her mother both reported enjoying mathematics and embracing the EM curriculum. Kina's mother teaches a GED class, so she explained that she often brought home some of the problems the students did in class, and she would challenge Kina with them. Kina's mother explained that Kina was very good at mathematics and that she never really needed help with her homework, so providing Kina with these challenging problems gave her a chance to work with her daughter on something engaging. Kina received an A in Mathematics, completed 95% of her homework throughout the year, and reported high motivation during homework such as intrinsic motivation, high self- efficacy, mastery goals, and positive affect.

Aisha. Aisha is an African American girl. She lives with her mother, but her older sister comes home from college weekly. Aisha and her mother seemed to have different views of mathematics. Aisha described hating math while her mother explained that she personally enjoyed it and believed that she was very good at it. While Aisha's mother was good at math, she believed it was the teacher's responsibility to provide instructional support, not hers. Aisha's mom complained about the Everyday Math that her daughter was using, and explained that when she did help, she would require that Aisha solve the homework her way, not Aisha's preferred way. Aisha received an F in Mathematics, had 10% homework completion throughout the year, and reported low motivation during homework such as low self- efficacy, negative affect, amotivation, maladaptive attributions of intelligence, and performance- avoid goals.

Sherri. Sherri is an African American girl who lives with her parents and five siblings. Sherri's mother was home most of the day and her father came home later. Sherri's mother has six children and described a very chaotic house. Sherri's mother described not being very good at mathematics, as did Sherri. They both found the Everyday Mathematics curriculum to be very difficult to understand, although Sherri's mom thought it was probably necessary to use this curriculum to bring the children up to date with the newest mathematics strategies. Sherri's house was very chaotic, full of kids with different activities, from a sleeping baby to other children watching tv. This made Sherri's mother very busy and time for Sherri very thin. Sherri received a D in Mathematics, completed 80% of her homework throughout the year, and reported low motivation such as low self- efficacy, negative affect, extrinsic motivation, and a completion goal orientation.

Lamar. Lamar is an African American boy living with his mother, grandparents, and younger brother. Lamar indicated that he did not enjoy mathematics while his mother described taking pleasure working on the mathematics with her son. Lamar's mother stated that she felt confident in mathematics, but that she at times struggled with interpreting the Everyday Mathematics curriculum. Lamar's mother would come home by 5pm, and his grandfather would watch him until then. Lamar played several sports throughout the year which took a lot of his time. Lamar received a C+ in Mathematics, had 65% homework completion throughout the year, and reported mixed motivation during homework by having a completion goal orientation and being amotivated, but valuing mathematics and reporting high self- efficacy.

Zaire. Zaire is an African American boy who lives with his mother and two younger brothers. Zaire was incredibly independent and talked about his responsibilities for watching over his younger siblings. His mother also explained that she gave Zaire the responsibility of

taking care of his brother, which she admitted sometimes interfered with his ability to tend to his homework. Zaire described liking mathematics. His mother reported having difficulty with the mathematics and found it difficult to help him with his homework even though she was taking courses at a community college, one of them being math. She described the curriculum as being cutting edge, because it was what she was learning in her class at the time. She described trying to use her notes and her textbook from her class to help Zaire when he was having a problem, but that it wasn't always easy to find the right problem that correlated to the problem he was having. Zaire received a D in Mathematics, had 20% homework completion, and reported low motivation during homework such as low self-efficacy, amotivation, and a performance goal orientation.

Tina. Tina is a Latino girl who lives with her mother, father, and younger sister. Tina's father is home when she gets home from school, because he works at night and her mother works until late in the evening. Tina reported enjoying mathematics, but her father explained that he had a long history of difficulty with mathematics, which even inhibited him from going into the military. He explained that he thought the Everyday Mathematics curriculum was exciting and a novel approach that he thought could be helpful for his daughters because it promoted a different way of thinking. Tina's father explained that he believed his daughter was in need of extra assistance at school, but that the school didn't agree because she was a model student behaviorally. He explained that she was always well behaved and that her teachers misinterpreted this as high competence. Tina's father explained that he believed it was his responsibility to be as involved as possible at home. Tina received a B- in Mathematics, had 90% homework completion, and reported moderate motivation during homework such as low self-

efficacy and negative affect but she reported valuing mathematics, having mastery goals, being intrinsically motivated, and self-regulated.

Curriculum. This school used a standards-based curriculum, the Everyday Mathematics (EM) curriculum (University of Chicago School Mathematics Project, 2001), which has a focus on guided instruction and real world application of mathematics. The curriculum asks students to solve problems using strategies that may be different from how parents learned to solve the problem. For example, students used the partial sums method for addition, the trade first method for subtraction, the partial quotient method for division, and the lattice method for multiplication (See Appendix A for a brief description and visual). Given that the methodology for solving problems look drastically different, parents quickly noticed the disparity. In order to assist parents who may be unfamiliar with the new methods, the EM curriculum provides supplemental materials for parents which include a family letter providing a unit overview and introduction to concepts and vocabulary. The supplemental materials also incorporate answers to homework problems as well as suggested activities to do with their child that emphasize the application of mathematics. A pilot study found parents employ limited use of these materials (Rogat et al., submitted manuscript).

Mathematics Policies and Routines. In order to obtain background information on mathematics homework routines and primary practices, the mathematics teacher was interviewed. She picked a date, time, and location to be interviewed. The interview took less than an hour and focused on her homework practices and her views on parent participation. The interview is used as background information to support cases regarding homework policies, practices, and the teacher's reported achievement score for each student in the study. She was interviewed before parents and students in order to better understand the homework procedures

as well as to gain her approval on the homework tasks. The mathematics teacher was interviewed about her homework policies and her views on parent involvement. She declined to be audio-recorded. The teacher interview protocol was modified from a previous pilot study (Rogat, Rashid, & Ginsburg, 2009) (see Appendix B for the full interview).

The teacher reported that homework is checked every day, sometimes for completion and sometimes for accuracy. She stressed that she mostly cared to see that they had attempted the homework and then sometimes checked for accuracy in order to use it as a formative assessment to judge whether her students understood the material. She explained that many of the parents didn't understand the new curriculum, and she had seen parents attempt to help solve a problem using their parent preferred method when looking at a student's homework. She stated that she embraced her students learning multiple solution strategies as long as it didn't confuse them when they were in class. She believed that most students found the problem solving strategies they learned in the classroom easier than their parents' methods and that she believed they preferred the method they learned in class. She believed that the EM curriculum made mathematics more applicable to the real world, which is why it is easier to understand and would therefore benefit students if parents were able to become more familiar with the curriculum.

3.2 Procedures

Data collection took place during the months of May and June 2011. Interviews and observations were conducted during the second half of the year, because teachers, parents, and students were thought to be more familiar with the homework process and routines are better established.

Parent-child observations. At the time of the home observation, parents and students were asked to participate in the observation portion of the study, and they were asked for their permission to have the observation videotaped. Observations during homework allowed for a look into parents' and students' homework practices in a natural setting; therefore each of the observations was conducted at the home of the child in the study. Each dyad was observed and encouraged to act naturally and behave as they typically would while doing their mathematics homework. I observed each dyad and sat away from them but close enough to the child to observe the involvement. Each of these observations were video recorded and audio recorded and an observation protocol was filled out in order to describe the homework environment and keep notes about salient practices observed. This included a narrative description of what happened while the child completed homework, a description of the actual homework, and the parent's location during homework. In addition, particular parent practices that were salient given the stated research questions were described (see Appendix C for observation template).

In addition to completing their assigned mathematics homework, I provided the children with two teacher-approved sheets of mathematics homework tasks to complete in order to ensure all children in the study were completing the same homework tasks at the same level of difficulty. Children were observed completing their teacher assigned homework for the day as well as the homework tasks I assigned that were provided as part of the study to ensure that all student participants completed the same task. In all, a median observation lasted for about 45 minutes, with the longest observation lasting an hour and a half and the shortest lasting approximately 35 minutes.

Parent-child interviews. Following the observation, parents and children were interviewed separately with the exception of one interview that was translated from English to Spanish for the parent. In this case, however, the child was still interviewed separately. Both parents and students were told that the interview was confidential, and that all of their identifying information would be changed. They were informed that they could change their mind and stop the interview or observation at any time. Parents and students were asked if they would allow the interview to be audio recorded.

3.3 Measures

Homework tasks. Each of the students in the study was given two homework tasks to complete in addition to their assigned homework. Each of the tasks came from an older version of the fourth grade Everyday Mathematics curriculum and were approved by the mathematics teacher as tasks the students were capable of completing and similar to homework she had recently assigned (see Appendix D). These tasks were included in order to assess consistency of typical homework procedures and strategies among each of the students who were observed on different days and thus had different math homework. In addition, these homework tasks allowed for the opportunity to observe a fuller range of procedures and strategies that may emerge as the product of a different homework assignment.

Parent Interviews. Parents were interviewed about their involvement in their child's mathematics homework, beliefs about their mathematics ability, capability to help with homework, and strategies to motivate their child or enhance their learning experience by supporting or inhibiting their basic psychological needs. The parent interview protocol was modified from a previous pilot study (Rogat, Rashid, & Ginsburg, 2009) which drew from two theoretical frameworks on parents' homework involvement (Hoover-Dempsey & Sandler, 1995,

1997, 2005; Cooper et al., 2000) (See Appendix E for the full interview). These frameworks represent homework involvement in general. This dissertation along with pilot studies addresses how involvement in mathematics homework might be the same or different from more general involvement, especially considering the reform-based context. The pilot studies' interview protocol asked parents to describe their homework routines such as where or when homework was done, how parents would respond if their child was struggling, and how parents provided opportunities to explain their child's mathematical learning beyond homework. In addition, the interviews sought to access practices specific to EM by asking how parents responded to differences between mathematical procedures they used and those promoted in EM, and by showing a typical grade-appropriate task to prompt discussion about their homework involvement. The interview protocol for this dissertation also focused on homework routines, parent practices, and helping strategies, but also included questions about parents' motivational support.

Child Interviews. Child interviews helped to interpret observed interactions which prompted specific questions about interactions and behaviors noted during the observation (see Appendix F for the full interview). Question 1 of the interview helped to corroborate parents' reported responses. Student interviews asked about the child's perception of their parents' homework involvement. More specifically, children were asked about specific events that occurred during homework or about certain parent practices in order to assess their perceptions of the satisfaction of their basic needs. Children's autonomy was assessed through questions about their decision making and choice during homework. For instance, children were asked whether they received help before they asked for it, if they had a choice in their homework routine, and whether they were allowed choice in problem solving methods. Children's

competence was assessed through questions about their perceived ability with the homework and with the mathematics and whether they felt more capable as a result of their parents' involvement. For example, children were asked whether they received help during homework if they needed it, whether their parents engaged them in activities to support their mathematics learning beyond their homework, and whether they felt capable during math homework. The questions also address students' relatedness by focusing questions on their feelings of support and perceptions of love during homework. For example, children were asked how they were supported if they wanted to quit doing their homework, whether they felt they would spend quality time with their parent during homework, and the disposition of their parent during homework. Children were also asked questions to assess their motivation such as value, interest, mastery, affect, and self-efficacy. For instance, they were asked about the value of learning mathematics, whether they were interested in mathematics, why they tried to do well on their math homework, how they felt when doing homework, as well as their perception of their ability to succeed in math. Each of the questions of the student interview was designed to target a specific basic need, which was used to assess students' motivation and needs satisfaction.

Homework Completion & Achievement. After all data was collected from each of the parent/ student dyads, the teacher was contacted again and asked to report broadly on her students' mathematics achievement and their homework completion. More specifically, the teacher provided each student's final letter grade in her mathematics course as well as the percentage of homework they completed for the year. Achievement scores for students ranged from two students receiving an A, while the other five received a different score of B-, C+, D, or F. Students' homework completion ranged from 10% to 98%. With the exception of one student, students with high, low, and moderate homework completion rates were related to high, low, and

moderate achievement respectively. In the exception², one student had 80% homework completion was associated with low achievement, D. This is used to compare achievement to students' reported needs satisfaction and motivation, and helps to build a more comprehensive case for how quality involvement might impact achievement.

3.4 Coding

The interview and observation data were prepared for coding in several phases. First, parent and child interviews were transcribed. In order to prepare the observation data for further analysis, the video data was first converted from MiniDV to DVD then transcribed including descriptions of the parent and child's actions alongside any pertinent visual information (e.g., gestures, body language, affect). Second, the interview transcription was assigned codes. All transcriptions were coded using the Atlas Ti software. Codes were not mutually exclusive; descriptions of specific practices could receive multiple codes and could cover different time segments (see coding protocol description below).

Interview data was coded in segments separated by the evident conclusion of a code which generally came after a response to a specific question that was intended to prompt a code. A specific question might have prompted a response that described an action or behavior that signified a specific code. The original question, response, and any follow-up questions and responses were all coded as a single segment. Table 3-2 details a coding segment that began with a prompt asking a parent to describe how they cope when they notice their child using a different methodology than they use. This question and the follow-up questions prompted a response that was indicative of autonomy and competence supportive practices. This code was concluded when his description of the practice, centered on dealing with differing methodologies,

² It should be noted that the parent of this child indicated that her siblings may have completed her homework for her.

concluded. As evidenced in this example, only the highlighted portion of the excerpt was coded. The portion of the excerpt that was not highlighted represented the beginning of a new segment. In this example, a new prompt question was asked, warranting a new potential code.

Observations were coded in segments that were separated by the conclusion of a student or parent practice or action or student perceptions of parent practices. Actions dictated the beginning and completion of a specific code. For example, when parents engaged in a practice such as responding to their child's question, the entire section detailing that parent's response was coded with the appropriate code or codes. In another example, when students engaged in an action that represented a motivational outcome such as positive or negative affect (ie., smiling, frowning, laughing, crying, etc) everything associated with that outcome (ie., behaviors that led to the positive or negative affect) was coded. Table 3-2 samples Sherri's exchange with her mother during her homework observation, which demonstrated that the start of a code began with the action of Sherri's request for help and ended with her mother's response and Sherri's reaction. The conclusion of the segment was the start of Sherri's new action, which was reading the question quietly to herself. This exchange prompted several codes, and in order to capture the background information for Sherri's negative affect, for example, it was necessary to include the entire exchange.

Table 3-2: Sample coding

Transcription	Code
<p>H- If she's productively working on a problem but using a strategy that's different from how you'd do it, what would you do?</p> <p>D- If she knows how to solve a problem, then go with that. I don't encourage her to do it my way if she has a better way, if she understands that way. If she doesn't understand that way and I don't understand it, then I'm going to try and explain to her how I understand it.</p> <p>H- And then would you encourage her to use your way?</p> <p>D- If she understands my way, then yes by all means</p> <p>H- So do you try and teach it to her?</p> <p>D- Yes</p> <p>H- Okay. If she was doing it correctly, you'd encourage her to keep doing it?</p> <p>D- Definitely</p> <p>H- Would you then check it your way?</p> <p>D- Yea to check it, I'd have to check it my way</p> <p>H- Have you helped her or encouraged her to finish her homework faster?</p> <p>Tina Dad</p>	<p>- Autonomy support, because the parent is allowing the child the choice in which strategy she wants to use</p> <p>- Competence Support, because her parent references teaching her his method which is an indication that he provides instructional support.</p>
<p><i>Sherri's mother walks by and seemingly avoids looking at her daughters as they do their homework and walks to the kitchen from what seems to be her bedroom. As she is walking, Sherri yells:</i></p> <p>S- Mom, what.. I don't... I need you for this one. (Sherri yells so her mother can hear her from the kitchen)</p> <p><i>Her mother keeps walking and doesn't respond. Sherri repeats...</i></p> <p>S- Mom, Mom. I don't know this one. I ..</p> <p>M- (yells from the kitchen). Try to do it yourself.</p> <p>S- this one (she points)</p> <p>M- Read the question (still in the kitchen)</p> <p>Sherri makes a pouting face and spreads her body across the table, extending her arms to reach the middle. She looks at me, then makes a loud exhaling sound.</p> <p>Sherri reads the question quietly under her breath.</p> <p>(About a minute passes)</p> <p>Sherri's sister taps her to ask her to define a word</p> <p>Sherri & her mother</p>	<p>- Competence inhibiting, because the parent does not provide instructional support even though she needs help</p> <p>-Relatedness inhibiting, because the parent ignores the child</p> <p>-Negative affect, because of loud exhaling sound indicated frustration</p>

* Only highlighted portions were coded. Additional text is meant to provide context for the end of a coded segment

Coding Protocol. Coding of parent and child data was conducted in two phases. First, a codebook was developed defining codes from theory which are captured in the literature review and cited in the codebook as well as from the previous pilot studies (see Appendix G). In addition, examples from the pilot studies help to better characterize each code, however in cases where there is no example in the pilot study, examples are cited from an article that helped to define the code. Codes were assigned for parents' homework involvement practices and students' homework behaviors. Primary codes were characterized into two categories: (a) parent practices that are supportive or inhibitive of children's autonomy, competence, or relatedness and (b) children's expressed motivation. Definitions and examples of parent practice codes were drawn from Rogat, Rashid, and Ginsburg (submitted manuscript) which characterized the supportive and inhibitive implications of parents' practices during homework. During the coding process, I remained open to elaboration given additional examples or patterns that emerge as well as additional codes. Certainly, the opportunity to hear the student's perspective and to observe homework interactions afforded the real possibility of new characterizations of supportive or inhibitive homework practices. Operationalizations of children's expressed motivation codes were collected and adapted following a review of the seminal literature on each of the potential motivational outcomes. Since the secondary codes were adapted from previous literature, examples were taken straight from the findings in order to more articulately characterize the aim of the codes. These conceptualizations evolved during the coding process in light of the current context and data. Also, all transcriptions were re-coded to account for the revision to the coding scheme.

All codes were kept in a codebook with examples from the Rogat et al. (submitted manuscript) paper. Agreement was obtained with a second coder by examining an interview and

an observation. The second coder was Toni Rogat who was the first author on the Rogat et al. (submitted manuscript) paper that serves as a pilot study for this dissertation; therefore she was familiar with the coding scheme. However, both coders referenced the codebook's elaborate detail on each potential code. The interview was coded completely by each coder before meeting to discuss inter-rater reliability. After comparing coded interviews, inter-rater reliability was established across the primary and secondary codes and was calculated at 94%, with all codes achieving acceptable reliability.

For coding the observation, the DVD was watched together in a single session in approximately ten minute segments while the transcript was coded. Each practice was coded. After ten minutes expired; the video was stopped after the current homework practice was concluded. For example, if a parent was providing advice for how to solve a problem, the video was not stopped until the parent finished providing advice. Therefore, even after a ten minute segment came to a close, the parent's practice also had to conclude before stopping the DVD to conclude coding. Inter-rater reliability was calculated at 92%, with all codes achieving acceptable reliability. After discussing disagreements for both interview and observation inter-rater reliability, 100% agreement was reached.

Basic Needs Codes. The following primary codes represent the basic needs facilitative and inhibitive practices of parents during homework. All examples in Table 3-3 are taken from the current data and are intended to elaborate on the classification of each code.

Autonomy support. Autonomy support consists of parents' practices that fostered choice and a sense of control during homework. These practices include: having the child choose when, where, or how they did homework, encouraging students to work on problems on their own, and waiting for the child to initiate help.

Autonomy inhibiting. Parent practices that inhibited autonomy are characterized by parent actions that are controlling or inhibit a student's sense of control or choice. Some of these characteristics include controlling when, how, or where the child did homework, imposing help or advice without the child's request, or monitoring the child's progress as a way of controlling the student's behavior.

Competence support. The code for competence support focuses on parent actions that support students' understanding of how to do the homework. More specifically the code incorporated parents' attempts to help students better understand an assignment by introducing new solution strategies, providing feedback on the student's work, asking the student for explanations, learning from the students, or modifying the assignment to be more manageable. This also includes indications that parents communicated their belief that their child is capable of making progress and achieving.

Competence inhibiting. Parents' practices that inhibited competence were characterized by parent actions that made the student feel incapable of doing or understanding an assignment. Some of these practices are characterized as imposing help on the student in a manner that makes them feel as if they are not capable of doing it on their own, finding other resources for help instead of allowing the child to explain a problem, criticizing the student's performance or solution strategies, complicating a homework problem when trying to explain a solution strategy, monitoring the student's steps of solving a problem, or checking the student's work after he or she has completed their homework.

Relatedness support. Finally, relatedness support was coded when a parent discussed a feeling of closeness with the child that stemmed from the closeness of working together during homework. Homework time can be a time when parents and children work together; therefore

this code was meant to capture a type of closeness that can come out of the process. For example a parent may stay near the child, doing something else, while the child does their homework.

This may show the child support, while not necessarily being controlling or intrusive. Parents can also express their positive feelings about the child including praising the child for doing well or for his or her persistence.

Relatedness inhibiting. Parent practices that inhibited relatedness were characterized by parent actions that made the student feel a lack of closeness or neglect. Some of these practices are characterized by not having time or patience to assist the child with homework when they ask for help, becoming frustrated or irritated while working with the child, or withdrawing love or attention when the child does not follow the parent's rules or instructions.

Table 3-3: Primary Codes

Code	Interview example	Observation example
Autonomy support	"... I have her do her homework 100% on her own by herself and then whatever she doesn't understand or has a problem with then you come and get it."- Tina's Dad	Tina's father sits in away from Tina and allows her to initiate help.
Autonomy inhibiting/controlling	"He doesn't want to, but when I'm helping him, I try to make him do it my way, just to try it"- Lamar's mom	Lamar's mother sits beside Lamar and reads his homework problem aloud for him without his request
Competence support	"... I see if they are really really really struggling then I help them out and break it down."- Kina's mom	"Can you tell me how you got this answer?"- Kina's mom
Competence inhibiting	"I honestly don't help her very often, because a lot of times, I don't know how to do it ..."- Sherri mom	Sherri- "I don't understand this" Mom- "Keep trying" Sherri- "I did" Mom- "Skip it then"
Relatedness support	"... You can motivate him or really piss him off with words, so I am careful to be really motivating, like 'come on, you can do this, let's knock it out.'"- Zaire's mom	Zaire's mom gives him a hug after she walks over to give him advice about dealing with a problem on his homework.
Relatedness inhibiting	"... she breaks down sometimes when she wants my attention and I'm ignoring her."- Sherri's mom	Aisha begins to cry from frustration after asking her mother for help and being ignored

Expressed motivation codes. The following codes represented children's motivational outcomes towards homework which may be a product of their parent's inhibitive or supportive practices during homework. Examples are taken from the coded interviews or observations of this sample (See Table 3-4).

Affect. Affect was conceptualized given the dimension of valence: positive to negative, using Linnenbrink-Garcia, Rogat & Koskey's (2011) model. Positive affect was coded using observation data through physical indicators of a smile or laughter and interactions that indicated excitement, joking, or happiness. Negative affect was coded from the observation data through physical signs such as frowning, pouting, or crying as well as marks of aggression or interactions that indicated upset, sadness, boredom, or exhaustion. Children were directly asked, during the interview, to indicate if they felt excited, frustrated, happy, or worried while doing homework and to explain why.

Self- efficacy. Bandura (1986) conceptualized self-efficacy as a child's belief as reflecting one's overall concept of capability at the task and domain level. Beliefs of doing poorly in school, feeling unintelligent, and feeling disappointed with academic performance in math indicated low self-efficacy. In the context of mathematics and homework, this code included children's perceived beliefs of their abilities with the mathematics and the mathematics homework. Self-efficacy was directly addressed in the interview by asking children, "Do you feel like you can do your math work or does it give you some trouble sometimes?" Other examples of children's self-efficacy perceptions were identified throughout the interview and observation from statements declaring ability or inability, demonstrating confidence in their ability to complete the math homework correctly or lack thereof, or comments about feeling capable or incapable of explaining mathematical rationale to their parent.

Amotivation, Intrinsic motivation, and Extrinsic motivation. Children's level of motivation during homework was coded with three separate codes for intrinsic, extrinsic, and amotivation. Deci and Ryan (2000) describe a range of motivation conceptualizing amotivation as a complete lack of engagement or interest, intrinsic motivation as engaging in an activity for an inherent satisfaction, and extrinsic motivation as performing an activity solely for the external outcome. The amotivation code identified students who were completely disengaged during mathematics homework through behaviors in the observation such as not completing their homework or stating that they did not want to work on the homework. Intrinsic motivation was coded when students indicated interest or enjoyment in the math homework or in the subject of mathematics. Extrinsic motivation was coded when students reported completing their homework for external rewards such as a sticker, candy, or praise. These forms of motivation were targeted by questions in the interview. Extrinsic motivation was prompted by asking students if they received rewards for doing their homework accurately or punishment for not doing their homework and asking if this had a bearing on their homework completion. Intrinsic motivation was targeted in the interview by asking students if they liked math class. Amotivation was not directly addressed in the interview, but was coded in observations when students demonstrated that they did not have the drive to complete the homework or desire to work on the math.

Goals. Student's goal orientation was identified by three different achievement goals: mastery, performance, and completion. Ames (1992) conceptualized goals with a focus on learning and understanding an activity through persistence as mastery goals and goals with a focus on receiving positive evaluation of their ability or avoiding negative evaluation of their

ability as performance goals. Goals with a focus on just finishing a task are identified as completion goals.

Within the context of mathematics homework, I drew from Gurland and Grolnick's (2005) work to develop codes to identify students' focus on the process of learning (mastery goals) or a focus on highlighting the innate qualities of the person (performance goals). Mastery goals were coded in interviews and observations through examples of wanting to improve their competence, indications that their mistakes were accepted as a part of the learning process, desiring to enhance their math skills, and remarks about wanting to better understand the math.

Performance goals were differentiated into performance approach and performance avoid goals. Performance approach goals were coded in interviews and observations identifying a focus on demonstrating competence to peers, teachers, or parents by discussing innate ability or how a task requires minimal effort, or emphasizing grades in order to demonstrate ability. Performance-avoid goal codes captured students' focus on avoiding the appearance of incompetence by avoiding challenging problems. Some students also reported being intent on just finishing a task and not on understanding the material or learning from the task, which was coded as a completion goal.

Intelligence beliefs. Children's explanation for their success and failure with the mathematics or with their homework was coded by characterizing their view of intelligence when discussing their ability to complete the mathematics. Children with an entity view attribute success or failure to intelligence and perceive intelligence as stable and unchangeable; therefore they are concerned with task performance and their success outcomes (Dweck & Leggett, 1988). Children with an incremental view attribute success or failure to effort or a change in their strategy and perceive intelligence as malleable and therefore believe that with effort, one can

improve their intelligence (Dweck & Leggett, 1988). The entity view code encompassed children's remarks that their success or failure was due to difficulty with homework or mathematics that could not be controlled or helped indicating that they never were or would ever be good at math no matter the amount of effort they put forth. The incremental view code included students' comments that their success or failure was attributed to difficulty that was controllable and could be improved through persistence, hard work, or increased help.

Value. Children's beliefs of the value of the mathematics was coded by characterizing the perceived usefulness and real world benefit of the math. The four identified components of value as conceptualized in Eccles, Wigfield, & Schiefele (1998) helped to conceptualize the code: utility value (perceived long term usefulness of task), intrinsic value (enjoyment expected while engaging in task), attainment value (engaging in task is consistent with one's identity), and cost value (perceived cost of engaging in task). More specifically, the value code characterizes utility value which is identified as the belief that a task may connect to one's future goals. Students' belief that homework problems and the mathematics they are studying is important to learn were coded as value. In order to relate to this context of mathematics homework, the value code identifies students' reports that they value the homework and the mathematics content as being important for practicing skills. In addition students' reports that the mathematics had real world applications or that it was important for their future was also coded as value. Two specific interview prompts addressed value, "Do you do math activities outside of school?" and "Do you feel like math is important?"

Self- Regulation. Xu and Corno (1998) characterize self- regulation during homework as the purposeful planning, monitoring, and evaluation of practices that take place as a result of working on homework with a parent. As a product of working together, children may learn to engage in practices voluntarily that are better aligned with success during homework. These practices have been coded to include finding the ideal room to do homework that is free from distraction, structuring or managing time and routine for homework, managing emotional responses to homework difficulty, or developing ways to avoid distractions. More specifically, observations and interviews were coded for self- regulation when students reported deliberately engaging in practices that indicated structure during homework such as choosing a room in the house that was quiet, asking siblings to be quiet or give them space as they completed their homework, reporting that they did homework at the same time in order to balance their schedule, or keeping themselves motivated when they were frustrated by taking a break and coming back to the homework.

Table 3-4: Expressed motivation examples

Affect	When talking to her mother during homework, Kina laughed at a joke her mother made (Kina's interview- positive affect) During Aisha's observation, she began to cry from frustration during homework. (Aisha's observation- negative affect)
Self- efficacy	"...my teacher sometimes tell me to explain things to other people, so I feel smart about that..." (Lamar's interview- High self-efficacy) "... I just can't do it..." (Aisha's observation- Low self-efficacy)
Amotivation	"I don't want to do this; I really hate math." (Aisha's observation)
Intrinsic motivation	Jorge explained that math was his favorite subject, and stated "I like math a lot." (Jorge's interview)
Extrinsic motivation	Zaire indicated that he was worried when doing his homework, which as he stated was, "because I want to get good grades." (Zaire's interview)
Mastery goal	"No I always ask for help only when I need it. I always want to learn to know the answer so that all my answers are right, so I could get all my answers right in school too. "(Jorge's interview)
Performance goal	After her mother made a comment about her ability, Aisha showed off all the assignments she had collected with a high grade. (Aisha's observation)
Completion goal	When Lamar was doing his homework, he kept trying to hand it in without answering all the questions, but his mother pointed out that he wasn't finished. When asked about this, he stated, "I just... I really want to finish." (Lamar's observation/ interview)
Incremental view of intelligence	Tina described believing that her difficulty with the homework was malleable, "If I'm stuck, I keep trying. I try every way, and if I don't know, I ask for help or they ask if I need help and I say yea." (Tina interview)
Entity view of intelligence	"I don't like to keep doing it wrong. I just can't do it." (Aisha's interview)
Value	"Because I think math helps you with your numbers so you can learn to grow up with numbers and once you get into college, you can know your division and stuff." (Lamar's interview)
Self- Regulation	"I want to do my homework right away so I don't forget and so I can play." (Jorge's interview)

3.5 Analyses

The results of this dissertation are broken into two studies in order to answer each of the research questions. In order to identify the range of parent practices that supported and inhibited children's basic needs, parent and child interviews and observations were analyzed. Each of the interviews and observations was coded using ATLAS, a qualitative data analysis software

program, which allows for printed reports for each code for each interview and observation.

First, parent interviews and all observations were coded to identify practices as supportive or inhibitive of autonomy, competence, and relatedness using the codebook which uses prior literature and the Roagt et al. (submitted manuscript) study to conceptualize codes. Second, children's interviews were coded to reflect their indication that a parent practice was experienced as supportive or inhibitive of their autonomy, competence, and relatedness. Children's indications that a practice was supportive or inhibitive of autonomy was based on whether the child reported perceiving a sense of choice as a result of a particular practice or whether their comments indicated they felt controlled or did not have choice. Children's indications that a practice was supportive or inhibitive of competence was based on whether the child reported that a practice their parent engaged in made them feel capable of completing their math/ math homework or whether that practice made them feel incapable. Finally, children's indications that a practice was supportive or inhibitive of relatedness were based on whether the child reported that their parent's practice made them feel loved and supported or unloved or unsupported. A comparison chart for each parent and child dyad compared parents' coded practices and students' perceptions of their parents' practices. Children's indications of the practice as supportive or inhibitive of a specific need constituted the classification of that parent practice, despite parents' intent that was subsumed in their description of the practice. When a child and their parent described the same practice in a different manner, the child's description of the practice detailed the framing of the practice as well as the type of practice. For instance, when a parent described having rules for their child during homework with the intent of providing structure and therefore supporting competence, if the child described this practice as controlling by restricting homework conditions, it was identified as restricting homework conditions, an autonomy

inhibitive practice. However, when children described their rules during homework as helping them stay organized, this was identified as structure, a competence supportive practice.

Therefore, similar practices were coded differently depending on children's perceptions of that practice. This chart allowed for an analysis of any potential mismatch between parents' intentions for engaging in a practice and how children perceived that practice.

To facilitate further analysis, a chart that describes involvement practices for each code was created for each parent and student from interview and observation data. The chart characterized the parent involvement practices that parents and students described, discussed, or engaged in across each interview and observation, but it also allowed for a breakdown of each dyad in order to identify appropriate cases. Specific examples from the interview were identified in the chart. Next, a summary chart was created to compare and contrast the main patterns of parent involvement across the parent and student interviews and observations. These charts represented a deep analysis of each code, indicating parents' practices during homework and children's indications of how they interpreted each of these practices as supportive or inhibitive of their basic needs. A final chart was created identifying each parent practice separated by basic need then categorized as supportive or inhibitive of that need. This chart included a description of the practice, children's quotes that helped categorize the practice as inhibitive or supportive of a basic need, and a count of each parent that engaged in that practice for each need. This therefore allowed for an analysis of what practices parents employ during mathematics homework that their children perceive as supportive or inhibitive of their basic psychological needs (first research question).

In order to identify patterns of involvement that constitute high, low, and mixed quality involvement, parent and child data from the previous charts was collapsed to represent each

dyad. A separate document was created to represent parents' practices with corresponding quotes from parents' and students' interviews as well as descriptions of the observed actions for each dyad. Each practice for that parent was listed and described and then accompanied by children's reported reactions to each of these practices. In addition, each document included all the coded segments for each child's motivation as coded from their interview and observation data. Where possible, it was indicated if a specific motivational outcome was attributed directly to a parent practice. Finally, to round out the case, children's achievement score in mathematics and the percentage of their homework completed for the year was also included.

A summary document was created detailing the number of inhibitive and supportive practices each parent engaged in for each basic need. Parents who engaged in more supportive practices for each basic need were characterized as providing high quality support. Parents who were more inhibitive than supportive for one of the basic needs were characterized as providing mixed quality support. Parents who were more inhibitive than supportive for two or more basic needs were characterized as providing low quality support. In order to represent each side of the spectrum, the dyad representing the greatest number of supportive practices, the dyad representing the greatest number of inhibitive practices, and the dyad with the highest number of supportive practices representing mixed quality support were selected to represent three cases. Ultimately, these cases represent how children respond to their parent's use of facilitative and inhibitive practices in terms of motivation and achievement. This therefore allowed for an analysis of the patterns of involvement that comprise high, low, and mixed quality involvement as defined by parents' level of supportive and inhibitive practices during homework (second research question).

Chapter 4: Results study 1

This qualitative study identifies children's perceptions of their parents' practices as inhibitive or supportive of their basic psychological needs. By triangulating homework observation with student and parent interviews, the results provide a vivid depiction of children's perceptions of parent practices that support and inhibit their basic psychological needs during homework and identify students' own interpretation of their basic needs support, with implications for their motivation and achievement. Few studies have richly characterized how parents employ practices to support homework; therefore this study provides rich description of parent involvement during homework to further elucidate how parent practices may have implications for children's psychological needs.

The results are organized into two main sections. Drawing from this rich corpus of data, the first section of the results characterizes the full range of parents' involvement practices drawing from the coded transcripts of parent and student interviews and video data. In this first part of the results, I draw comparisons/relations/connections between parents' reported and observed practices and children's interpretations/reports of parent enacted practices. These analyses coalesce in three qualitative cases for the second section of the results, with the intent of representing how a specific collection of parent practices are related in their influence on children's reported motivation and achievement in mathematics.

4.1 Full range of parent involvement practices and children's interpretation

This section of the results identifies parents' practices for supporting or inhibiting their child's basic needs. It is an extension of the findings in the Rogat, et al. (submitted manuscript) paper, which classified parent's self-reported involvement practices as facilitative or inhibitive of children's psychological needs in ways that match previous theory. Children in the Rogat et al

(submitted manuscript) study were not interviewed; therefore the previous results were only one interpretation of parent-reported practices and did not account for a student perspective, which may have resulted in assumptions about which parental practices promoted or undermined students' psychological needs. In addition, the previous study relied on parent reports of their involvement practices, but parent-child interactions were not observed during homework; therefore observing interactions in a natural setting affords a more realistic impression of parent practices and it allows students and parents to reflect on practices they just engaged in. This dissertation research used these classifications of parent practices from theory and my own prior research to categorize practices observed during parent-child homework interactions as well as self-reported during parent interviews, with the intent of characterizing children's perceptions of their parent practices during math homework as facilitative or inhibitive of their basic needs.

Below, the full range of identified homework involvement practices are identified. Parent practices are organized by the primary basic psychological need that the parent practice supports or inhibits. For each of the identified parent practices, these results provide (1) a brief description of each practice, (2) the number of parents that engaged in the practice³, (3) an example representing both parent intention and child perception of its classification which sheds light on the alignment of parents' intentions and children's perceptions of the satisfaction of a basic need, and (4) a summary justification for the classification of the specific practices with the specific basic need. The intent of the child's example is to demonstrate children's interpretation of the parent homework practice as supportive or inhibitive of a specific need. Examples were selected with the intent of being representative of the experiences and/or reports of the full sample. Table 4-1 provides a summary of parent practices. In addition, the accompanying table highlights

³ Each parent that reported or was observed engaging in a practice was included in the count for each category. I do not differentiate whether each practice stemmed from parent interviews or observed homework interactions in the results that follow.

practices that are inconsistent with the findings from our previous research (Rogat et al., in revision) or new practices identified within the current data.

4.2 Autonomy Supportive Practices

Minimal monitoring to allow child to initiate help. Four parents reported engaging in little to no monitoring by not sitting next to their child during homework. In terms of rationale, these parents each reported engaging in minimal monitoring as a means to allow the child to work on their own and initiate help if they needed it. As an example, during the observation, Kina's mother was in the kitchen while Kina was doing her homework in the dining room. When asked about her limited amount of monitoring, Kina's mother explained that she did not monitor because she didn't feel Kina needed it. "Like you saw, I don't help much. She doesn't need help, really. That gives me a chance to do other things while she's doing her homework." Her mother went on to explain that she believed that the homework was Kina's responsibility to complete by herself although she also explained that she helped whenever Kina asked for it. During the observation, she came in to check on Kina and her siblings and only provided them help if they asked for it.

M- Well it's her responsibility to do the homework by herself. I guess it's mine to make sure it's actually right.

H- Okay

M- Which it usually is. I let *her* [with emphasis] do it so I know that she really understands it.

H- By herself you mean?

M- Yea like she'll do it by herself and if she asks for help, I know what she's struggling with.

As she explained, she believed that Kina was able to complete her homework on her own without help. Kina's mother reported that it was Kina's responsibility to complete the work on her own, but if she asked for help that was an indication that she was struggling with the work and she would help her. She felt that it was her responsibility as a parent to check the work to

make sure Kina wasn't struggling. She emphasized throughout the interview that typically Kina didn't need much help with her homework so giving her the responsibility to complete it on her own and only provide help when solicited was most productive.

Kina reported that she preferred working on her homework by herself. She explained that her mother didn't monitor her during homework, but would check in on her and her sisters.

H- Do you wish she just sat with you while you did your homework?

K- No

H- Why not?

K- I like to do it by myself...

As Kina explained, she did not want her mother to stay near her as she completed her homework. She even mentioned she would get distracted when her mother was around when she would talk to her sisters. Kina seemed to be completing her homework independently, as she preferred it.

Parents that reported engaging in minimal monitoring with the intention of promoting responsibility, allowed children the opportunity to problem solve independently. By giving children the ability to complete homework on their own, parents gave them a chance to try and work out their problems on their own then initiate help on their own if they needed it. As a result, this practice is classified as autonomy supportive.

Select homework conditions. Four parents reported allowing their child choice over when and where they completed their homework. Zaire's mother explained during the observation that she didn't mind where and when Zaire did his homework, indicating that he was allowed to do his homework anywhere. "He does his homework wherever he wants. It's fine. Sometimes he is in the living room doing it on his lap and sometimes he wants more space, so he does it on the kitchen table..." Zaire also discussed believing that he had the choice in deciding his homework schedule.

H- So do you choose when you do it?

Z- Yes

H- Do you choose where to do it?

Z- Yes

H- And how do you choose that?

Z- I will do it in here

H- In the kitchen, yes?

Z- Right in between 5 and 6.

H- Why do you to do it here between 5 and 6?

Z- No actually, I do it between 4 and 5, that way I have time to play outside.

Zaire described having choice over his homework schedule. He described taking breaks from his homework at times, but explained that he would have to go back to it, because as long as he completed his homework for the day, he was able to come and go as he pleased. “Yes, if I want to go outside I can, but I should go back to doing my homework.” By having the choice to come up with a schedule and by allowing Zaire the freedom to choose where he did his homework, he conveyed feeling autonomous and made decisions about his homework that best fit into his schedule.

Zaire’s example represents how giving a child the choice in where and when they do homework can promote a sense of autonomy. By giving children the ability to decide when or where they will complete their homework, they can choose the conditions they believe are best for them. As a result, this can be perceived as autonomy supportive by children whose parents report allowing them a choice in where and when homework is done.

Strategy choice. Six parents promoted their child’s choice by reporting that they allowed their child to choose the solution strategy they wanted to use while solving problems during homework. These six parents reported teaching their child their own strategy, but then ultimately allowing their child to choose the strategy that he or she preferred. Parents who reported teaching their child their own preferred or traditional method for solving homework problems conveyed that they did this in an attempt to allow their child a conscious choice between the methods, and

therefore engaged in strategy choice. The EM curriculum presents a unique context where parents' and children's problem solving strategies conflict. This provides the opportunity for parents to learn their child's strategy in order to help, teach their child their own strategy, or both. For example, Tina's father explained that he taught Tina his methods, but ultimately let her choose the methodology that worked best for her. "If she knows how to solve a problem, then go with that. I don't encourage her to do it my way if she has a better way, if she understands that way." By introducing his methods to Tina, her father gave Tina an opportunity to explore another problem solving method, but still allowed her the choice of solving problems her own way. Despite his personal difficulty with understanding the EM methods, Tina's father explained that he did not want to confuse Tina with his method, if she already was comfortable solving a problem her way.

When Tina was asked if her parents required her to use a particular method to solve her homework, she explained that she can chose the method she wanted to use. She explained that she chose between both methods. "I solve it my way when it's easier and their way when it's easier." She later admitted that she usually chose the method she learned in school. When discussing both methods, she seemed to recognize that she had the ability to choose the method that was best for her without feeling pressured to choose a particular strategy, because her father mostly introduced the method as a, "backup way to answer if I don't know."

Giving children the choice to decide which method he or she preferred to use, promoted autonomy and responsibility for working through a problem independently to find a solution strategy that worked best. Regardless of which strategy they used to solve their methods, having the choice seemed to promote children's autonomy when completing their homework problems, allowing them to have responsibility over problem solving.

4.3 Autonomy Inhibitive Practices

Surveillance. Only one parent was observed engaging in surveillance, which in this study, encompassed close monitoring of homework and both unsolicited helping and checking. Lamar's mother closely monitored Lamar while he completed his homework and as a result of her surveillance, provided unsolicited help and checking. As his mother explained, "Most of the times we sit next to him just to watch what he's doing." During the observation, her surveillance of Lamar's homework completion led to imposed help. She sat beside Lamar the entire time he completed his homework and provided help with homework that was unsolicited by Lamar. Whenever she noticed Lamar doing something incorrectly or she noticed a long pause, she would interject with assistance. She explained that during her surveillance, she would check his homework as he went along which also prompted her help. By closely and heavily monitoring Lamar's progress, she seemed to suggest that Lamar was not responsible for regulating his own work or asking for help when he felt he needed it.

Providing Lamar with help he might have needed may have benefits for supporting his competence. However, Lamar interpreted his mother's close oversight as controlling. During the observation, Lamar was visibly upset by the amount of uninitiated help he was receiving. During one instance, Lamar began to make sounds of agitation and put his head on the table when his mother interjected while he was solving a problem. Consistent with this observation, when he discussed his mother's monitoring and uninitiated help in his post observation interview, he suggested that it wasn't welcome. When discussing his mother's help, he explained, "I just like to do it [homework] by myself." Lamar also explained that he tried to avoid the surveillance by completing his homework before his mother came home from work. Lamar discussed in his interview that he recognized that if his mother was home while he was doing his homework, she

would sit beside him and provide him with long winded amounts of help that he didn't want. In response, he explained that he tried to be proactive by completing his homework before she came home, so as to avoid her unsolicited assistance. Lamar indicated that he interpreted his mother's surveillance as inhibitive of his autonomy and therefore tried to avoid the surveillance, when possible.

This definition of surveillance is the same as it is in the Rogat et al (submitted manuscript) study, which folds in the practice of checking, but also highlights the uninitiated helping that results from monitoring and uninitiated checking. In this definition of checking, the parents are checking that homework is being completed through the process of surveillance. While surveillance may lead to help that a child might need, when the surveillance and subsequent assistance is uninitiated, it seems to be perceived as autonomy inhibitive by the child. Each of the children in the sample reported asking for help when they needed it, although children's preferences for the amount of help they received varied with some children wanting a lot more help than others. Giving children the responsibility to decide when they need help can encourage independent problem solving and promote autonomy, while surveillance may lead to uninitiated help that seemed to inhibit autonomy. Being available when the child asks for help and allowing the child to request assistance, may be a more supportive way to provide children with the assistance they need.

Imposing strategy. Two parents in this study reported requiring that their child use and learn their methodology, recognizing that they gave their child no choice in method. Given the discrepancy between the way that parents learned to solve certain math problems and the new reform-based mathematics strategies their children were learning, these parents wanted their child to utilize their method. One of the parents only imposed the learning of the method,

wanting her son to practice using her method so that he could have it as a tool for problem solving. The other parent required that her daughter use the method when solving any problems at home. For example, Aisha's mother explained that she required her daughter to use her method, because it was more practical than what she was learning in school. "Oh, I try to force my way on her... In real life people do it my way."

Although she believed her method was better for her daughter, not allowing her daughter the opportunity to use her own preferred method seemed to inhibit Aisha's autonomy. Aisha explained that her mother's practice of imposing her strategy was controlling. She explained that she preferred to use her own method, but was not allowed. When asked which method she preferred, she explained, "Mine, but I use her method since she makes me." Not having the choice to use her preferred strategy, seemed autonomy inhibiting.

Requiring children to use a specific methodology when completing their homework and disregarding their child's preference for their own preferred strategy, seemed to remove choice and may be perceived as controlling. In each of these cases, parents required their child to complete their homework using their parent's strategy and disregarded the child's strategy which was taught in school. Requiring the child to always solve homework using their method may also impede on the child's ability to practice the school taught method, which may also subsequently inhibit competence. Ultimately, this practice was perceived by children as controlling and therefore identified as autonomy inhibiting.

Rewards and Punishment. Six of the parents reported that they provided a reward or a punishment in response to their child's homework completion or behavior during homework time. These parents reported that they presented a reward or a punishment as means to promote homework completion, which may have implications for controlling their child's behavior during

homework. For example, Zaire's mother explained that she discussed a system of rewards and consequences with Zaire.

I would say on this hand you have rewards on the right hand you have consequence so reward you get to do everything you want to do and on consequence you actually have to sit here and suffer through and watch everybody outside playing or watch everybody else get a snack or money you know for doing little things like that. Everything in life has reward and consequence. It's up to you to choose which hand you want to eat off of.

As she explained, she wanted Zaire to recognize that his actions had consequences. When asked what the consequences might be for not completing his homework, she explained, "No TV. No video games. None of those things that he wants. No money or having fun outside." By imposing punishment for not completing his homework, Zaire's mother indicated that she was trying to control his behavior by reinforcing her beliefs that actions have consequences.

Zaire echoed his mother's statements stating, "Well, if my teacher tells on me [for not doing homework], then I can't watch TV or I lose my video games or something." When asked if this made him do his homework more, he responded by saying, "yes". He also discussed his mother's philosophy of rewards and punishment, which he seemed to internalize, "Mom told me one time, consequence and reward and which would you rather have better." Zaire explicitly stated that his mother's practice of implementing punishment had an influence on his actions regarding homework completion.

Rewards and punishment may have been perceived as autonomy inhibiting when students recognized that this regulated their homework completion or homework behavior. When parents used rewards or punishment to extrinsically motivate homework completion, their child may perceive that he or she is doing the homework to avoid the punishment or to earn the reward rather than for the sake of learning the material.

Restrict homework conditions. Restrict homework conditions was a newly identified autonomy inhibitive practice, given these data. Three parents described dictating when and where their child did their homework, without considering the child's opinion because it made helping with homework easier and more convenient for their own schedule. For example, Sherri's mother explained that she had her daughter complete her homework in the dining room.

M- No she doesn't really do it in her room, usually she does it here.

H- Whose choice is that?

M- Mine. I tell her to stay in the dining room, so she's easier to find.

Sherri's mother explained that she wanted Sherri to stay in a particular room so that she did not have to look around for her when she wanted to check in, and she did not give Sherri the opportunity to choose the room she would stay in during homework.

Sherri's mother did not give Sherri the choice of completing her homework where she wanted. As a result, Sherri seemed to feel constrained by her lack of choice. She described wanting to do her homework in her room, but she was not allowed.

S- I want to do it in my room sometimes

H- Why don't you?

S- I am supposed to stay by my sister.

H- Okay, so why do you want to do it in your room?

S- It's quieter so I can focus more.

H- Do you tell your mom that ever?

S- Yea, but she says just stay out here.

Sherri explained that although she voiced her opinion for wanting to do her homework in a quieter room, she reported that her mother did not listen to her opinion. Sherri may have perceived her lack of choice as autonomy inhibiting, especially considering her reason for wanting to work in another room was to avoid the noise. During the observation, Sherri completed her homework in the dining room where the television in the living room was visible and extremely loud.

As indicated in this example, restricting homework conditions may be perceived as controlling when the child expresses wanting to change their homework schedule or environment. By not allowing children the ability to partake in the decision making around their homework conditions, parents may inhibit their child's sense of autonomy.

4.4 Competence Supportive Practices

Environmental structuring. Four parents reported establishing a homework routine with their child that helped to structure their homework environment. In each of these cases, parents reported wanting to provide their children with the optimal conditions to complete their homework by helping them develop a homework schedule an environment that helps them avoid distractions. For example, Lamar's mother explained that after realizing that Lamar was too tired to complete his homework after he came home from his extracurricular activities, they agreed that he should have a set routine that allowed him to fit time for his homework and his extracurricular activities into his busy schedule. She explained, "He'd come in and not do his homework and then he had these activities...so we came to the conclusion if you have time come right in, do your homework, get it done." Lamar's mother stressed that she worked with Lamar to set up a routine that best matched his responsibilities in an attempt to try and help him find the best time to complete his homework.

Lamar seemed to internalize the benefits of the structure by explaining that he needed the structure to help him get his homework done when he wasn't tired. "So I can get it [homework] done early so I don't have to finish it at night whenever I have to go back to school [for practice]." He explained that when he didn't complete his homework before practice, he would be too tired to focus. "...And I can't do it at night like sometimes I used to before but like

I couldn't focus so." Lamar explained that he found the routine best for ensuring that he did his homework when he was best able to focus.

As evidenced by this example, structure seemed to help promote productivity and support competence. Children seemed to internalize the competence supportive benefits of structure best when they understood why the routine was established or if they had a role in coming up with the routine.

Teaching new strategy. All seven parents reported that they at least attempted to teach their child their preferred method to solving their math homework problem in order to provide their children with another possible method for solving a problem. This allowed for a learning opportunity for children whose parents taught them their method. As described in the imposing strategy section, one caveat of the mathematics curriculum is that children are taught a methodology for solving problems that is different from their parents' methods. For example, Kina's mom explained that a benefit of teaching her daughter the method she preferred to use was that it gave Kina a "secret weapon" in problem solving. "Yes, when I see the opportunity, I teach her my way. It gives her a second secret weapon. Once she was in a test and she said, she could only figure it out my way." Kina's mom explained that her intentions were to equip Kina with another problem solving strategy which she explained was useful on a test in the past. Kina seemed to recognize the benefit of learning her mother's strategy, "Yes. That way is good for long division." She explained in her interview that she found her mother's method useful at times in helping her solve a future problem.

Teaching a new math strategy is designated as a new practice that is different from general instructional support which it was subsumed under in the Rogat et al., (submitted manuscript) study. Children explained that their parents taught them a new method as a way to

solve problems in the future, and not necessarily in response to a child's request for help with a specific problem. Kina explained that her mother taught her the method she learned in school after Kina explained her form of long division to her mother, "Yeah I showed her how to do it and she should me how she learned long division." In another example, when Tina described learning her father's method, she called it a "backup way to answer if I don't know." As a result of these comments and other children's comments about learning a new math strategy as an instructional method for solving future problems and not necessarily a problem in the moment, this practice was distinguished from the umbrella of instructional support.

By learning a different way to solve problems, children were given the opportunity to solve a problem that they may otherwise have had difficulty solving if they were solely relying on the methods they learned in school. Each of the students in the sample reported at least an instance when they found their parents' methodology useful although they primarily preferred using their own method. Having the additional option as a method seemed to support their competence, as evidenced by instances where they were able to use it exclusively to solve a problem.

Scaffolding. Four parents described and demonstrated engaging in scaffolding by providing children with solicited help on a problem they had on their homework or in response to solicited checking. They described only offering the specific help their child requested or needed after being asked to check a problem, in order to assist the child in completing a piece of the problem so that their child could continue to complete the work on his or her own. In these cases, parents provided help in order to support their children who otherwise may not have been able to complete the problem without their assistance. Scaffolding is distinguished from the autonomy

inhibitive practice of imposing instruction because this parental practice was provided in response to child initiated homework difficulty.

For example, Tina's Dad explained that he would provide help to Tina by rephrasing the problem and relating it to a topic she might be more familiar with. He elaborated, "Well I don't give her the answers; I try to help her figure out the answers, because giving her the answers won't help her. I'll try and associate it with something she knows..." Tina's dad clarified that he would not provide her with the answers, because he just wanted to help her understand the problem. His intentions were to make sure that she would be able to solve the problem on her own, so he attempted to clarify the language and associate it with her own interests. During the observation, Tina called him over to help her with problems she had set aside as difficult, after going through the entire assignment first. On a few instances, her father only gave her prompts which helped her solve the problem on her own.

D: How much money did he have left? Left over? (looking at Tina)

T: Subtraction? (she looks at her dad for approval)

(Dad nods and Tina goes back to solving the problem. Her father looks over her shoulder and doesn't say anything until she is done.)

Tina's father helped Tina help herself by reminding her that a key word in the word problem could indicate the methods that she had to use.

Tina discussed that she found her father's scaffolding helpful in allowing her to complete her homework. She explained that during the observation, she skipped the problems she tried but found too difficult, knowing that she could ask her father for help. "I skipped the ones I tried that are hard and I saved it all for my dad to help me for at the end." Tina also explained that she found his assistance helpful in getting the right answer. "Yea just to make it [the math problem] clear. He helps me get it right." Tina only asked for help at the end after trying all the problems

without her father's help. The scaffolding Tina received helped her solve her homework accurately.

Scaffolding was identified as a new practice which in the Rogat et al., (2013) study was under the umbrella of instructional support along with *teaching new strategy*. Children's reports described scaffolding more similarly to the original category of instructional support as helping them solve a problem in response to a specific homework question. Providing instructional support in the form of scaffolding seemed to support competence by providing the appropriate amount of assistance during homework. Each of the children whose parents provided them with scaffolding, reported needing the help and being able to then solve the problem after they received the help. In addition, this scaffolding also includes checking, which parents and students reported was a part of the scaffolding process when children explicitly asked for help or asked their parent to check something.

Encouraging mathematical explanation. Five parents reported encouraging their child to explain a homework problem to them or to explain their solution to a homework problem. Parents reported doing this in order to assess their child's understanding of the mathematics as well as to use the opportunity to learn from their child. For example, Lamar's mother described that when she worked with her son on his homework, she would often measure his understanding by asking him to explain a homework problem. During his observation, Lamar's mother asked him to explain his answers to several of the problems. During one instance, as Lamar is explaining his answer, he identifies that he is incorrect. "That is so wrong. I got to change the whole thing...Cause I said I have got to subtract 10 minus 9 minus 8. It's so wrong. Twenty, 12...twenty, seventeen." He then did the problem and found the correct answer. As a product of

his explanation to his mother, he was able to identify his own mistakes, which seemed to support his competence and his success on that problem.

When Lamar discussed instances of having to explain the math to his mother, he explained that it made him feel good that he was able to explain his thinking. “Yes. I’m a good explainer.” Lamar suggested that he was comfortable explaining his problem solving method, even explaining it to me when I asked him about it. Encouraging a child to explain their mathematical thinking seemed to be helpful in assisting the child in identifying their own level of understanding. Helping a child identify a mistake or recognize their ability may help support their sense of competence.

Going beyond. Three parents reported engaging in practices that went beyond providing instructional support during homework and promoted learning in another way. This form of parent involvement was characterized by practices that provided children with review, challenge, and additional ways to advance mathematics skills outside of school. For example, Jorge discussed his mother’s attempt to review the mathematics with him with flash cards. “They [the flash cards] help me like.... they help me practice my multiplication problems.” Jorge reported benefiting from his parent’s help, because he struggled with his multiplication facts.

Going beyond the required homework tasks by challenging the child or helping him or her review, can help promote effort and competence beyond the assigned homework. Children may appreciate the additional effort as a means to promote competence.

4.5 Competence Inhibitive Practices

Minimal instructional support. Three parents reported that they did not provide their child with instructional support the majority of the time, even when their child requested the help. It is important to note that *minimal instructional support* does not necessarily mean that the

parent absolutely never helped with homework, but that they reported they generally did not provide assistance with homework when solicited. In these cases, they confirmed that even when their children asked for help with their homework, they didn't help for a variety of reasons like not being able to help, or not believing the child actually needed help. For example, Zaire's mother explained that she struggled to provide instructional support when Zaire needed it. "He's been mad at me before when I helped him with something and it was wrong, it was tough. I felt I let him down and it was upsetting for me and embarrassing, so that brings some tension. Like can he trust me to help him? It's crazy." She also explained that because of her inability to really help him, he no longer came to her for help, even though she knew he needed it. During the observation, Zaire did not ask his mother for assistance even though he may have needed her help since most of his answers were incorrect and he left many questions blank. Zaire's mother observed that he had left many questions unanswered, but she did not offer any assistance. By not providing Zaire with the help that he needed and not being able to get his assistance elsewhere, his mother seemed to hinder his ability to learn the material and accurately complete his homework.

Zaire reiterated his mother's statements, explaining that he often did not complete his homework, because he struggled with the math and he didn't receive the instructional support he needed. "It was because she says I always need help, because sometimes I don't do my homework but she has trouble helping me." Zaire discussed his mother's efforts to help him, but discussed that her attempts to help often confused him, which may be why he stopped asking for help. Zaire's inability to receive the help he needed seemed to inhibit his ability to learn the mathematics necessary to complete his homework.

When children report needing help with their homework, but their parents do not or cannot provide it, children may not be able to achieve the level of success they could have had they received help. Even though parents' reasons for not providing the appropriate amount of instructional support varied, as evidenced in this example, the lack of assistance seemed to inhibit the child's competence.

Maladaptive involvement. Three parents reported engaging in ineffective involvement strategies that seemed to diminish their child's capability perceptions. This included just giving the child the answers to homework problems, providing advice that was detrimental to the child's ability to manage their homework, or criticizing the child when they were struggling. For example, during the interview Aisha's mother teased her about her inability to do the homework.

H- How do you respond when she has completed her homework and has all the right answers? (Side conversation with mom and Aisha)

M- (Laughing) Has that ever even happened Aisha?

Aisha seemed to be hurt by her mother's comment, demonstrating her hurt by starting to cry and showing off her collection of assignments with the grade of a 100 on them. Aisha's mother made several comments during the observation as well that criticized Aisha's inability to understand the material.

Aisha's mother's criticism seemed to impact her competence perceptions. During the observation, Aisha made comments about her inability to understand the homework such as, "I can't do this." She eventually quit doing her homework and left the entire assignment blank besides the first question. During the interview, Aisha explained that she was worried she would never be able to understand the material and she discussed not finishing her homework when she couldn't complete it. Her mother's comments conveyed to Aisha that her mother did not think she was capable of accurately completing her homework, which seemed to inhibit her sense of competence. While criticism of the child also hinders relatedness, the message that it conveys

about the child's ability seemed to have an impact on how the child perceives their ability to learn the material.

Another parent engaged in a different maladaptive practice by allowing her child to receive answers from older siblings instead of helping them learn to solve the problem on their own, which may also convey low ability expectations or just hinder the child's opportunity to receive help. Finally, one parent reported confusing the child with inaccurate solution methods, which gave the child the wrong answer. Each of these practices seemed to inhibit the child's ability to successfully complete their homework, therefore impeding their competence.

4.6 Relatedness Supportive Practices

Ensuring availability and bonding. Five parents reported demonstrating availability during homework in ways that afforded support. These parents were available when their child requested them during homework. For example, during the observation, Jorge's mother checked in to see how he was doing. He translated from Spanish, "She just asked, 'are you okay? Do you need help?'" I said, 'no, thank you.' By asking Jorge if he needed anything, Jorge's mother conveyed her availability. Jorge seemed to like it when he was checked in on. "I like when they just know that I need help, when they check." By making themselves available and checking up on Jorge, his parents seemed to make him feel like they cared.

When parents are openly available during homework, they may help convey to children that they care about ensuring their child knows they have support when they want it. Parents may also use homework time as a time to bond with their child when they work together. These practices seemed to convey a sense of closeness and caring that may have supported their child's relatedness.

Regulating emotions. Three parents reported controlling their emotions during stressful times with homework. These parents each discussed having to keep their patience when their child became frustrated or upset during homework. For example, Tina's Dad explained that he had to keep patient when working with his daughter. "I think she gets more frustrated with me because I don't have the patience she'd like me to have, so I can recognize her frustration so that can kind of make me step back a little bit." He explained that he had to make an effort to stay calm when working with his daughter when she became upset when struggling with a problem.

Tina explained that she sometimes felt frustrated during homework, because she would sometimes feel pressured to succeed in math. When asked if anyone helped her deal with her frustration, Tina explained that her father was helpful in keeping her calm by staying calm himself:

H- Does anyone help you relax when you feel frustrated?

T- My Dad

H- What does he do?

T- He tries to make me be calm

H- How does he do that?

T- He just stays calm when I'm upset and tell me just relax and he explains everything.

Tina identified that her father's ability to regulate his emotions helped her to regulate her own emotions and she cited him as a source for alleviating her frustration.

Parents' ability to regulate their emotions seemed to be important for keeping homework time free of stress for the child. By keeping the homework environment positive, parents help convey their attention to their child's emotions and that they care enough to monitor their own reactions to support a sense of relatedness.

Knowing child. Knowing child was a new category identified in this study as a practice in which parents modify their support strategies based on their child's preference in order to promote a positive homework experience. Four of the parents stated that they modified their

support strategies in response to what they noticed their child liked or disliked so as to promote a positive working relationship with them during homework. In an example, Lamar's mother reported helping her son while he worked on his homework so that he could make the appropriate changes immediately, because she knew he disliked having to redo his homework. She explained, "...he wanted me to get off his back, so he stopped just putting down any answer. When I saw his grades went up, I backed off a little. It's like he gets mad when I find a wrong answer, because he knows he has to take it back out and do it right this time..." Lamar's Mom explained that she pulled back her help when she noticed that Lamar was putting in the effort to try and get his work done right the first time.

Lamar's interview revealed that he didn't like having to go over and over a problem. "Yea like today, I went over and over the problem. The answer wasn't good enough. It takes long." Lamar explained that he wanted his mother's help to be quicker and that more recently, she started looking over his homework quicker in response to his requests.

L- She used to check every one.

H- She doesn't anymore?

L- Not every one. She knows I like it to be quick. I tell her here it is very fast.

Using her past experiences with Lamar as a measure, she was able to approach helping him in a way that was individual to his desires during homework, thereby demonstrating her hope to cater to his preferences.

The three children whose parents reported customizing their practices based on their child's preferences each reported noticing these changes, which may suggest that they recognized their parents' efforts to adapt for them. Parents who modified their practices for their children seemed to show compassion for their child's individual preferences when working together, which may have supported relatedness needs.

4.7 Relatedness inhibitive practices

Ignoring child. This study identified ignoring child as a new practice. Two parents were observed ignoring their child's requests for help. For example, Aisha's mom discussed ignoring her child's requests for help because she didn't want to provide help when she felt her daughter wasn't trying. During the observation, Aisha asked for help a number of times and her mother ignored her. Aisha would call her mother, "mom, mom, mom, mom, I don't understand this, mom." Her mother didn't respond at all and just continued to watch television. At one point, Aisha began to cry with frustration and her mother said, "She [this study] wanted to see what really happens, this is what really happens. She asks for help without trying and I ignore her." Aisha said, "I tried," while crying, and after she calmed down she continued to attempt the homework on her own. Aisha's futile attempts to get her mother's attention during homework made her upset and frustrated and may have inhibited her sense of relatedness, as it didn't seem to convey a message of connectedness. Parents who ignored their child when they were openly frustrated and upset may have hindered their relationship and inhibited their child's sense of relatedness.

Emotionally unavailable. This study identified being emotionally unavailable as a new parent practice. Two parents reported instances of not providing the emotional support their child needed to be encouraged to complete or continue their homework. For example, Sherri's mom described Sherri's attempts at getting help as a quest for attention. Throughout the interview, Sherri's mom explained that Sherri would only ask for help, so that she could get closer to her. "I just feel she wants my attention, so I ignore it. "Like I'd rather she does it by herself." She continued to explain that Sherri wanted her to sit next to her while she was doing her homework, but that couldn't happen, because she was too busy. "Yes, and with my other children taking my

time, I can't keep coming to her and sitting with her while she does her homework. I really don't have the time or energy to sit and watch her solve every problem especially if she doesn't need help."

Sherri echoed her mother's claims about wanting to get her attention. Sherri explained that she wanted to bond with her mother during homework time, but she was not able to.

S- I like her to just be with me when I'm doing my homework in case I need help.

H- So you don't have to ask for her to come to you?

S- Yes and so we can laugh and talk

H- Oh okay. Not just homework?

S- Yes!

H- So do you talk about other things?

S- Yes and homework too and to make it fun the homework

While Sherri's mom realized that Sherri wanted her attention, she did not give her the emotional support that she was looking for during homework. As a consequence, this seemed to inhibit Sherri's sense of relatedness since she did not get the chance to bond during homework like she wanted.

Many of the children in the sample discussed becoming frustrated when working on their homework. In addition to wanting instructional support, these children may have needed emotional support to help them overcome their stress. By not providing the emotional support they may have needed, parents may have inhibited their child's sense of relatedness when they didn't respond to their child's desire for their attention.

Table 4-1: Range of parent practices

Parent Quote	Student Quote
Autonomy Support	
Minimal Monitoring- <i>Limited imposition of monitoring for child to initiate help</i> [Aisha, Jorge, Kina, & Zaire]	
“I can act normal.... Okay that means I can go cook; I don’t have to be watching his homework?” (Zaire’s mom)	“[When doing homework, his mom is..] Cooking and I have to take care of my brothers...” (Zaire)
Select homework conditions- <i>Providing choice over when and where to do homework</i> [Jorge, Lamar, Zaire, & Kina]	
“Yea he can do it wherever he wants, but he usually does it in the kitchen, because there’s food in there...” (Lamar mom)	“I don’t have rules...I just put my coat down and whatever I have and go straight to the kitchen so I can start my homework.” (Lamar)
Strategy Choice- <i>Allowing child to choose solution strategy</i> [Jorge, Lamar, Tina, Kina, Sherri, & Zaire]	
“... I don’t encourage her to do it my way if she has a better way...” (Tina dad)	“When I can try theirs, I do... When I can’t, I do mine.” (Tina)
Autonomy Inhibitive	
Surveillance- <i>Closely observing homework and imposing uninitiated help and checking</i> [Lamar]	
“Yea most of the times we sit next to him just to watch what he’s doing.” (Lamar’s mom)	“I just like to do it [homework] by myself” (Lamar)
Imposing Strategy- <i>Imposing a solution strategy</i> [Aisha & Lamar]	
“Oh, I try to force my way on her... In real life people do it my way.” (Aisha’s mom)	“...[prefer] mine but I use her method since she makes me.” (Aisha)
Rewards and punishment- <i>Provided for homework completion and behavior</i> [Aisha, Kina, Lamar, Tina, Sherri, & Zaire]	
“So there is no tv... she’s in her room, no DS, computers...” (Kina mom)	“If I forget to do my homework I would have to clean the whole kitchen.” (Kina)
Restrict homework conditions- <i>Restricting when and where to do homework</i> [Aisha, Tina & Sherri]	
“I usually make her go in her room.” (Aisha’s mom)”	“But it’s not my choice that I can’t do anything until my after I finish.” (Aisha)
Competence Support	
Environmental structuring- <i>homework routines</i> [Aisha, Jorge, Lamar, & Tina]	
“...so we came to the conclusion if you have time come right in, do your homework, get it done. (Lamar’s mom)	“So I can get it [homework] done early so I don’t have to finish it at night whenever I have to go back to school [for practice].” (Lamar)
Teaching new strategy- <i>Teaching the parents’ problem solving strategy</i> [All children]	
“If she doesn’t understand...then I’m going to try and explain to her how I understand it.” (Tina’s dad)	“When I can try theirs, I do. When I can’t, I do mine. ...It’s easier, it’s shorter.” (Tina)

Table 4-1 (continued)	
Scaffolding- Offering instructional support to allow child to complete work on their own. [Jorge, Kina, Lamar, & Tina]	
“... She can explain the part she’s getting stuck on, so I can help with only that.” (Kina’s mom)	“She’ll like explain in an easier way and it will help me find the answer.” (Kina)
Encouraging math explanation- Encourage child to explain homework problem or solution. [Jorge, Kina, Lamar, Tina, & Sherri]	
“How did you get that answer?” (Lamar’s mom- observation)	“That is so wrong. I got to change the whole thing...” (Lamar after encouraged explanation)
Going beyond- Providing resources to review, challenge, and access math outside of school. [Jorge, Kina, & Lamar]	
“I’ll bring home some papers for her to do and funny enough, she can do some of them algebra problems that I bring.” (Kina’s mom)	“They [flash cards] help me like ...they help me practice my multiplication problems.” (Jorge)
Competence inhibiting	
Minimal instructional support- Absence of instruction or scaffolding when needed [Aisha, Sherri, & Zaire]	
“He’s been mad at me before when I helped him with something and it was wrong, it was tough.” (Zaire’s mom)	“Yea basically, she tries to help me with her book, but it’s not always good help because the book is not the same as the problem.” (Zaire)
Maladaptive involvement- Ineffective involvement like, providing answers, bad advice, or criticizing the child when they were struggling. [Aisha, Sherri & Zaire]	
(Laughing) “Has that ever even happened Aisha? [all answers correct]” (Aisha’s mom)	[In her response to criticism] (Tearing) “Yea, I showed her all my right papers. The ones with 100s on them.” (Aisha)
Relatedness support	
Ensuring availability and bonding- Active listening demonstrate availability for support. [Jorge, Kina, Lamar, Tina, & Zaire]	
“She just asked, ‘are you okay? Do you need help?’ I said ‘no thank you’” (Jorge’s mom)	“I like when they just know that I need help, when they just check.” (Jorge)
Regulating emotions- Parents managing their own emotions during homework stress [Lamar, Tina, & Zaire]	
“... she gets more frustrated with me because I don’t have the patience...” (Tina’s dad)	T- Yes. I get frustrated when I feel pressured. H- What kind of pressure? T- My dad (Tina)
Knowing child- Parents modified their support strategies based on child’s preferences [Jorge, Kina, Lamar, & Tina]	
“...When I saw his grades went up, I backed off a little...” (Lamar’s mom)	“I went over and over the problem. The answer wasn’t good enough. It takes long.” (Lamar)

Table 4-1 (continued)	
Relatedness Inhibiting	
<i>Ignoring child- Disregarding child's request for support or help.</i> [Aisha & Sherri]	
"... this is what really happens, she asks for help without trying and I ignore her. (Aisha's mom)	"No. Sometimes she is busy to help or is watching TV or says I should keep trying." (Aisha)
<i>Being emotionally unavailable- Not providing necessary emotional support to encourage child</i> [Aisha & Sherri]	
"I really don't have the time or energy to sit and watch her solve every problem..." (Sherri's mom)	"I like her to just be with me when I'm doing my homework in case I need help... Yes and so we can laugh and talk." (Sherri)

* Dark highlight indicates a practice that is presented differently from the Rogat, Rashid, and Ginsburg (submitted manuscript) paper, while a dark highlight represents a whole new practice.

4.8 Summary of Results

Sustaining a broad conceptualization of parent involvement, the practices identified in the results characterized a rich description of the range of practices that facilitated or inhibited children's psychological needs for autonomy, competence, and relatedness. This paper extended the Rogat et al. (submitted manuscript) paper which richly described parent practices during homework as facilitative or inhibitive of children's psychological needs. While the Rogat et al (submitted manuscript) study relied solely on parent interviews to capture parents' practices during homework, this study extended the findings by including additional measures. This dissertation included (1) a naturalistic observation of homework at home to view parent and child dyads during homework, (2) post- observation interview with both the parent and the student, and (3) interview questions that were focused on assessing children's perceived satisfaction of their basic needs as well as parents' intentions of needs satisfaction.

The updated methods helped to reveal several key parent practices that had an impact on children's basic psychological needs. First, children were given the opportunity to reflect on their parents' involvement practices that were just observed and discuss their interpretations of these

practices during the student interview. This was a significant addition to the methods as it guided the designation of parents' practices as supportive or inhibitive of basic needs based on students' perceptions. Second, the observation helped to capture the overall picture of the homework environment beyond parents' reports as well as provide a more realistic impression of parent practices with the reform-based curriculum. Finally, having the parent interview round out the process allowed for parents to discuss their practices during homework as well as comment on their intentions for engaging in these practices and the reasons they have chosen to engage in these practices.

New practices identified. As a result of the updated methodology, new practices were identified. This study identified many of the same parent practices that were previously identified in the Rogat et al. (submitted manuscript) study, but extended the findings by identifying five new parent practices and three modified practices. Student interviews helped to identify four practices as new or different: *surveillance*, *restrict homework condition*, *scaffolding*, and *teaching new strategy*. Children's comments about *surveillance* suggested that unsolicited help occurred during homework during surveillance. Parents' comments may have suggested that this was competence supportive, however the imposition of helping during surveillance without solicitation was perceived by children as controlling. Children's comments in the *restrict homework condition* practice revealed that they perceived the rules surrounding homework at home to be controlling when their opinions were not considered or a rationale was not provided. Otherwise parents' comments alone suggested that their intention for establishing homework rules was to provide *structure* as a means of competence support. This practice may not have been differentiated without children's data, since previous literature highlights only the competence supportive nature of structure, which was perceived as competence supportive when

children felt they played a role in creating the rules. Children's interviews also revealed a clear distinction between *scaffolding* and *teaching new strategy*, which has been under the umbrella of instructional support in the Rogat et al. (submitted manuscript) paper. Children described their parents' instructional support as more in line with the characterization of *scaffolding* and they described learning their parents' strategy as separate from helping them solve a problem in response to a specific homework question and more about teaching the method to promote future problem solving. In addition, children revealed that they solicited checking during scaffolding, where they indicated it helped them identify a potential area of difficulty and initiated scaffolding. This is different from the Rogat et al. (submitted manuscript) study which identified checking only as controlling and categorized it during surveillance, which when solicited may not have been controlling. In this study, checking was only discussed by children as unsolicited during surveillance or as solicited in order to initiate scaffolding.

Observation and interview data combined to uncover *maladaptive involvement* as a new competence inhibiting practice. Interviews helped reveal that parents would sometimes provide help that was not always productive, indicating that they have given their child the answers or have provided help that was inaccurate. Observations helped to identify parent criticisms of their child during homework. Children revealed that they internalized the criticism and felt less competent or realized that they couldn't go to their parent for help with their homework because their parent wasn't a reliable source for instructional support. While the Rogat et al. (submitted manuscript) study anticipated practices like this given the review of the literature, they did not find this in their results. These practices may not have been identified without observation and student reports.

The observations helped to use interview questions to prompt for parents' intentions for engaging in certain practices. This helped reveal that the majority of the parents in the sample, engaged in practices out of respect for their child's preferences, which helped identify *knowing child* as a relatedness supportive practice. Children's indications of noticing their parents shift in behavior suggested that they recognized parents' efforts.

The Rogat et al. (submitted manuscript) paper did not identify any parent practices as relatedness inhibiting. Through both observation and interview data, this study was able to reveal two relatedness inhibiting practices, *ignoring child* and *being emotionally unavailable*. Children's behaviors during their observation allowed for a real glimpse into how they sought their parents' emotional support. The rejection of their requests for help or attention as elaborated in their interview indicated that their relationship with their parents may be affected negatively during homework.

Parents' reasons. Drawing on Hoover-Dempsey and Sandler's (1995, 1997, 2005) model for understanding why parents become involved in their children's education, parents were probed about three major sources that may influence their decisions to engage in certain practices. A summary of parent characteristics are represented in Table 4-2 as key variables in potentially explaining the variation in parents' selection of practices. Three factors were reported as capturing the circumstances that may have had an impact on the quality of parents' involvement: parents' mathematical competence beliefs as identified by their reported level of comfort with mathematics, perceptions of the curriculum and its novelty, and perceptions of what they believed parent involvement should be during homework (i.e., parents' should or should not help their child with homework).

Table 4-2: Parent characteristics

Parent Characteristic	Parents	Descriptions	Quote
Math competence	Aisha's mom- Comfortable Jorge's mom- Comfortable Kina's mom- Comfortable Lamar's mom- Comfortable Tina's dad- Difficulty Sherri's mom Difficulty Zaire's mom- Difficulty	Parents explained they were comfortable with math or that they had remembered facing difficulty with math when they were in school, and still found it to be difficult	D- The last math class I took, I think I was studying for the ASVAB to get into the military... H- Did you wind up going to the military? D- No ended up not finishing the class... (Tina's dad) "I've always been a math person. Straight As in math in school, so that's never been a problem for me." (Kina's mom)
Perceptions of Everyday Math	Aisha's mom- Novel Jorge's mom- Novel Kina's mom- Novel Lamar's mom- Novel Tina's dad- Cutting edge Sherri's mom Cutting edge Zaire's mom- Cutting edge	Perceptions of the Everyday Math curriculum being too novel for students to benefit from or for them to understand. Perceptions that the curriculum is cutting edge and should be embraced by parents and teachers.	"That's where the kid gets stuck, by the time they show every step in multiplying by 2 digit numbers they forgot what they were trying to answer. This is not how people do math in the real world so it sucks." (Aisha's mom) "I guess it's good that they are bringing them more up to date now." (Sherri's mom)
Perceptions of parent involvement	Aisha's mom- Promote independent problem solving Jorge's mom- Promote responsibility Kina's mom- Promote responsibility and advance learning Lamar's mom- Provide help and advance learning Tina's dad- Provide help only when necessary and advance learning if useful Sherri's mom - Promote independent problem solving Zaire's mom- Promote independent problem solving	Summary of parents' reported perceptions of how a parent should be or should not be involved during homework	"No, I wait for her to ask. And then most of the time, I still don't give it [help]. I let her figure out as much as possible that she's gettin' for herself. Let her teacher know she doesn't understand it. Let them teach it to her, so they know where she is having problems- where they didn't teach it correctly." (Aisha's mom)

Parent interviews helped to convey parents' intentions and reasons for engaging in each of the observed and reported practices. Parents' intentions were framed in an overwhelmingly positive manner, even when aligned with inhibitive practices. The Rogat et al. (submitted manuscript) paper revealed that parents' reported selection of involvement practices was informed by their experienced difficulty with mathematics and the EM curriculum.

This study elaborated on our previous findings indicating that parents' selection of practices was also informed by their desire to promote responsibility in their children and a desire for them to become effective at independent problem solving, as well as some level of difficulty the parents have with the EM curriculum. Parents reported wanting to promote independent problem solving during homework indicating that they valued responsibility, choice, and responding to children's requests. While promoting responsibility and independent problem solving was associated with supportive practices, it was also the reason that some parents engaged in what children perceived to be inhibiting practices. Parents justified their inhibiting practices such as *minimal instructional support*, *maladaptive involvement*, *ignoring child*, and *being emotionally unavailable* as a means to promote responsibility. They indicated that they felt their children wanted their help in order to get answers or distract from homework instead of actually working on the homework. This finding extends the Rogat et al. (submitted manuscript) study which found parents' competence perceptions as a primary reason for parents' selection of practices.

Parents' reported difficulty with mathematics did not seem to contribute to the same degree to their overall involvement practices. However, parents did report that their experienced difficulty with the EM curriculum shaped their practice enactment. Unfamiliarity with the EM curriculum prompted all of the parents in the study to engage in encouraging mathematical

explanation. Difficulty with the EM curriculum prevented one parent from being able to provide instructional support when her son needed it. This finding is consistent with the Rogat et al (submitted manuscript) study. One parent also reported that her negative perceptions of the EM curriculum led to imposing her own strategy on her daughter. Therefore, beyond parents' difficulty with the curriculum, their perceptions of the curriculum also influenced their reasons for engaging in controlling practices. Despite parents' intentions or reasons for engaging in a certain practice, children's perceptions of parents' practices, helped characterize each practice as supportive or inhibitive of their basic needs.

Children's perceptions. While the additional measures helped to reveal new parent practices, an important addition of this study is children's interpretations of how these practices had an impact on their basic psychological needs. For example, while parents' intentions may be to support their child's competence by providing their child with help, children may interpret that help as controlling if they did not ask for the help. Therefore, it was important to assess the alignment between parents' practices and students' perceptions. The results revealed that while the categorization of practices in the Rogat et al. (submitted manuscript) paper matches students' perceptions in terms of their basic psychological needs, students' perceptions helped to designate the new practices identified in this study.

Practices were originally categorized in the Rogat et al. (submitted manuscript) paper as supportive or inhibitive of a specific need based on designations from theory and research. In this study, however, after parents' practices were identified, students' perceptions of their parents' specific practices were identified to assess alignment. In some cases, children did not elaborate enough about a specific practice to definitively reveal how they interpreted their parents' actions. Other children's descriptions of how the need was interpreted in terms of their basic needs

helped to illustrate how they would presumably perceive the practice. For instance, it is presumed that if one or two children discuss how that specific practice is inhibiting, other children whose parents are engaging in that same practice may also potentially find the practice inhibiting.

Patterns of parental involvement. Beyond examining the range of parent practices that support or inhibit children's basic needs independently, it is important to explore the interaction of these practices in order to identify potential patterns of parent involvement during homework. Previous research has only examined each basic need in isolation, and it is critical to consider how parents employ supportive and inhibitive practices simultaneously and in combination during homework in order to determine how students might respond in terms of their outcomes.

Table 4-3: Parents' supportive or inhibitive practices

	High Quality Support		Mixed Quality Support			Low Quality Support		Total Across parents
	Jorge	Kina	Lamar	Zaire	Tina	Aisha	Sherri	
Autonomy Support								
Minimal Monitoring	X	X		X		X		4/7
Select Homework Conditions	X	X	X	X				4/7
Strategy Choice	X	X	X	X	X		X	6/7
<i>Total</i>	3/3	3/3	2/3	3/3	1/3	1/3	1/3	7/7
Autonomy Inhibitive								
Surveillance			X					1/7
Imposing strategy			X			X		2/7
Rewards and Punishment		X	X	X	X	X	X	6/7
Restrict homework conditions					X	X	X	3/7
<i>Total</i>	0/4	1/4	3/4	1/4	2/4	3/4	2/4	6/7

Table 4-3 (continued)								
Competence Support								
Environmental structuring	X		X		X	X		4/7
Teaching new strategy	X	X	X	X	X	X	X	7/7
Scaffolding	X	X	X		X			4/7
Encouraging math explanation	X	X	X		X		X	5/7
Going Beyond	X	X	X					3/7
<i>Total</i>	5/5	4/5	5/5	1/5	4/5	2/5	2/5	7/7
Competence Inhibiting								
Minimal instructional support				X		X	X	3/7
Maladaptive involvement				X		X	X	3/7
<i>Total</i>	0/2	0/2	0/2	2/2	0/2	2/2	2/2	3/7
Relatedness Support								
Ensuring availability and bonding	X	X	X	X	X			5/7
Regulating emotions			X	X	X			3/7
Knowing child	X	X	X		X			4/7
<i>Total</i>	2/3	2/3	3/3	2/3	3/3	0/3	0/3	5/7
Relatedness Inhibiting								
Ignoring child						X	X	2/7
Being emotionally unavailable						X	X	2/7
<i>Total</i>	0/2	0/2	0/2	0/2	0/2	2/2	2/2	2/7
Student math achievement	A	A	C+	D	B-	F	D	
Student homework completion	98%	95%	65%	20%	90%	10%	80%	
Total Supportive	10/11	9/11	10/11	6/11	8/11	3/11	3/11	
Total Inhibitive	0/8	1/8	3/8	3/8	2/8	7/8	6/8	

Table 4-3 identifies each parent's full set of practices, classified by basic need and categorized as inhibitive or supportive of a specific need given the above results. In addition, totals are provided for each basic need, but differentiated by its supportive or inhibitive nature in order to identify each parent as primarily inhibitive, primarily supportive, or mixed. A higher proportion of supportive practices indicated that those parents were primarily supportive for a particular basic need. A higher proportion of the inhibitive practices, shaded in gray, indicated primarily inhibitive support for that basic need. The final total revealed the proportion of supportive and inhibitive practices parents engaged in overall. As a result, parents were classified as primarily supportive, inhibitive, or mixed in their basic needs support.

Considering profiles of parent involvement identified through parents' level of supportive and inhibitive practices during homework affords the benefits of a rich analysis of high and low quality parents' involvement as well as a rich analysis of the particular relationships of the inhibitive and supportive practices. Parents who engaged in a total of more supportive than inhibitive practices for all the basic needs were considered as providing high quality support. Parents who engaged in a total of more inhibitive practices overall were considered as providing low quality support. Parents who engaged in more inhibitive involvement for any need but were more supportive in the other needs (ie. more autonomy or competence inhibitive than supportive) were categorized as providing a blend of high and low quality support and therefore deemed as mixed quality support.

Table 4-3 reveals that both high and mixed quality supportive parents engaged in a high number of supportive practices and no relatedness inhibiting practices. Only low quality supportive parents engaged in relatedness inhibiting practices and no relatedness supportive practices. All but one of the high and mixed quality supportive parents did not engage in any

competence inhibiting practices. All but one of the parents engaged in some autonomy inhibiting practice, given the employment of rewards and punishment. Parents overwhelmingly engaged in competence supportive practices regardless of their quality of support.

Table 4-3 reveals that the pattern of parents' practices indicates a profile of high, low, and mixed quality involvement. In order to further assess how students view their parents' pattern of involvement; case studies of each profile of quality support are discussed in study 2. These case studies allow for an examination of how parents employ motivational practices in combination at home during homework and the subsequent impact each profile has on children's motivation and achievement.

Chapter 5: Results study 2

5.1 Parent/Child Cases

Three cases were selected to represent parents that were deemed as having high, low, and mixed quality support represented through basic needs satisfaction in order to assess the potential impact on student's achievement and motivation (see Table 4-3). Before selecting one of the dyads from each category of quality support, achievement was taken into consideration to match the quality of parent practices with achievement in order to find any potential discrepancy or a potentially interesting case. This comparison revealed that high quality support was associated with high achievement, low quality support was associated with low achievement, and mixed quality support was associated with moderate achievement. Given this finding, no particular case stood out, but this suggested that needs satisfaction had a positive relationship with achievement. In order to represent each side of the spectrum, the dyad representing the greatest number of supportive practices (Jorge) and the dyad representing the greatest number of inhibitive practices (Aisha) were selected. The dyad with the highest number of supportive practices representing

mixed quality support (Lamar) was selected to exemplify why such a large number of supportive practices yielded moderate achievement. Ultimately, these cases represent how children respond to their parents' use of facilitative and inhibitive practices in terms of motivation and achievement

Case studies afford the benefits of a rich analysis of the particular relationships and factors that multiple interviews and observations provide for each dyad. Three cases represent parent- child dyads seemingly exhibiting primarily supportive, primarily inhibitive, and a blend of supportive and inhibitive practices. This mixture also seems to represent the range of achievement and homework scores. In essence, these cases may help to assess the range of parent practices that support students' reported motivation and mathematics achievement.

5.2 Jorge

Jorge is the younger of two children in a Spanish speaking family. Both of his parents do not speak English, so he and his sister had to translate phone calls, notices from teachers, even homework. Both he and his sister were vital in arranging the homework observation for this study and communication didn't present a problem. Jorge even translated the interview with his mother. Parents who engaged in more supportive practices for each basic need were characterized as providing high quality support. Jorge's case represents high quality support, with all practices suggesting support of basic needs.

Minimal Monitoring. Jorge's mom did not monitor him during the observation, but checked in on his progress to make sure he did not want help. He was allowed to complete his homework on his own without much interruption from his parents. Halfway through his homework, Jorge's parents came down to see how he was doing. Jorge explained that he was okay and his father went right back inside, but his mother stayed outside in order to wait for her

interview portion after the homework observation. She sat down in a chair near Jorge, but faced away from him and watched her daughter playing outside with other children. During this time, Jorge's mother let him work on his own, not interrupting him to ask if he needed help again. When asked during the interview what she would often do when Jorge was working on his homework, his mother stated that she would be cooking; therefore she was not in the room with him monitoring his homework.

While they didn't monitor Jorge, both of Jorge's parents stepped out to ask him if he needed help. Despite his parents' offers for assistance, Jorge completed the mathematics tasks required for the study and his own homework without receiving any help from his parents. If he chose, Jorge had the opportunity to ask for help without help being imposed upon him. Jorge's mother was asked if she usually waited for Jorge to ask for help or whether she would sometimes provide help on her own, Jorge translated his mother's response, "She said she doesn't want to bother me so she just lets me do my homework until I ask her for help." By not physically staying near Jorge as he worked on his homework and allowing him to ask for help himself, Jorge's parents seemed to support his autonomy by affording him the opportunity to independently problem solve yet initiate help if he needed it.

As Jorge explained, even though his parents would check in on him to see if he needed help, they would not interrupt him while he was doing his homework to provide any help. He explained, "They- I know what to do and they say- do I need any help - and I say no and I keep doing it... I keep doing it by myself." Jorge only received help by request, even though his parents initiated the opportunity for help.

Scaffolding. Jorge did not need help during the observation, but he reported that his parents would provide help if he needed it. He described receiving help when he was struggling, and that either of his parents would provide the appropriate scaffolding when necessary. He explained that they would ask him to state what he thought was the answer so that if it was wrong, they could see what he was having a problem with by figuring out where he went wrong when problem solving.

J- I'll ask my mom and my dad.

H- okay. And um... How do they usually help you? How do they help you if you have a question?

J- They say what do you think it is (the answer) and I tell them, and they say no, and then they start helping me.

H- Oh okay, so if when they realize you're doing something wrong?

J- Well when I ask a question, they ask me what I think the answer is or how to do it and if I'm wrong, they help me.

H- I see. So they don't just help you when you ask for it?

J- Well they want to see if I really need help or what I need help with.

As Jorge explained, his parents didn't just give him the answer; they wanted to provide appropriate scaffolding by identifying his point of struggle and only help him with what he was struggling with. By asking him what he thought the answer was first, he believed that his parents were trying to see if he really needed help with the problem. Jorge's parents seemed to be scaffolding during homework, as they were only providing the specific type of help that he needed which may help support his sense of competence since Jorge seemed to know that he could rely on his parents to help him when he was struggling. Their ability to provide instructional assistance, if necessary, may have helped to contribute to his high achievement, because they were actually capable of helping.

Even though his mother confirmed that he didn't necessarily need help, she and his father offered their help multiple times while he was doing his homework outside by stepping out quickly to ask Jorge if he needed any help. Jorge seemed to truly appreciate this help, explaining

that he liked when they asked him if he needed any assistance.

J- I struggle and then like somebody says do you need and I say yes and they start helping me.

H- Do you like that?

J- I like when they just know that I need help, when they just check.

By making themselves available and checking up on Jorge, his parents made him feel like they cared enough to keep close and help him when he needed. Jorge's parents seemed to support his relatedness by being available and actually being able to help Jorge when he needed the help. Jorge conveyed that he appreciated that his parents were available to help him by providing scaffolding, which seemed to indicate that they had a positive relationship.

Alternative solution strategies. Jorge and his parents explained that they used differing solutions when attempting to solve a math problem. For example, Jorge used the lattice method when solving multiplication problems, which was the method he was taught in school, while his parents used more traditional methods for multiplication that they learned in school. These different solution strategies created a unique context when working together on homework.

While working together on homework, both Jorge and his mother mentioned using different methodologies to solve a problem. Jorge explained that his parents have taught him how to use their method.

H- Do you ever do it one way and they do it another way?

J- Yes

H- What happens?

J- They teach me how to do it

He explained that sometimes their method was useful. He described a time when he was struggling with a problem and the only way his parents could help him was by using their methods. He explained that he made a mistake using the method, but his parents caught it which helped him solve the problem. Jorge stated, "one time I was stuck on a problem and I couldn't understand the answer and so that they could help me, I had to do it their way and I messed up

with that but then they saw where I messed up and that fixed it.” By teaching him their methods, his parents were supporting his competence, as he seemed to feel that he was capable of solving a problem in multiple ways especially knowing that his parents could catch his mistakes. By working together seemingly so well and listening to his preferences, they may also be demonstrating that they care about his opinion, therefore supporting his relatedness.

Even though Jorge knew how to solve his homework using his parents’ preferred method, he explained that his mother did not require him to solve a problem her way, even though she may have felt more comfortable providing help using her own method. Jorge described feeling autonomous as a product of being able to choose his strategy. He explained why he chose to solve problems using the lattice method instead of his parents’ more traditional problem solving methods by explaining that it just worked better for him, so he chose it.

J- I use the method that my teacher taught me. If it’s multiplication, I use lattice.

H- You use lattice, okay. But your mom and dad don’t use lattice?

J- No

H- Right. What happens when you’re doing a problem and your using lattice but they’re using the other way?

J- I tell them that I want to use the lattice, because... it suits me better.

H- It suits you better? Okay so they listen to you?

J- Yea.

As Jorge explained it, he felt autonomous when solving his homework, because he could just tell his parents that he preferred the lattice method and they allowed him to use it. He seemed to have a sense that how he solved his math homework was under his control.

In addition to his parents teaching him their method, Jorge reported teaching them his method as well. He explained that he taught them how to use the lattice method, but they didn’t understand it.

H- Why did you try to teach them?

J- They asked me to

H- Oh okay, they said ‘what is that you’re doing?’

J- (laughs) Yea they said, ‘that is math?’

H- (laughs) so you showed them, but they didn't understand?

J- Yea

H- Did they ever ask you to explain again?

J- No they think if it helps me show my work

As Jorge explained, his parents asked him to explain to them what it was that he was doing and made the conclusion that it was just an elaborated method to show work. By asking him to explain his method, his parents seem to show interest in his work but also provide him with the opportunity to talk through his methods and demonstrate his competence. Also by showing interest in his work, they may have fostered relatedness as they bonded during homework.

Select homework conditions. Jorge explained that he and his parents were most concerned about the homework being completed and not the schedule or environment surrounding the completion. As a result, Jorge explained that he was able to do his homework mostly when and where he wanted.

H- When do you do your homework?

J- I do it when I have time to do it.

H- So nobody says you have to do your homework at this time?

J- No

H- What about where you do your homework...Can you do it anywhere?

J- Yes

H- It doesn't matter... you don't have to do it in your room... you don't have to do it in the kitchen....it doesn't matter?

J- No

H- So you don't have any rules with that?

J- No only I just have to do it so that I hand it in and I don't get a zero for not doing my homework at home

As Jorge explained it, he had the ability to choose where and when he did his homework as long as it was done. Jorge did not seem to have a routine for homework, and he seemed to suggest that the routine was up to him. While a routine may help to provide more structure which could better support his competence, his parents seemed to trust that since he always completed his homework no matter where and when he did it, he did not need established rules. Given that Jorge was able to control his attention while

completing homework, Jorge's parents continued to provide him with the ability to choose his homework time and environment, thus supporting his autonomy.

Going Beyond. Another way that Jorge's parents supported his competence was by enhancing his mathematics learning beyond homework. Jorge described ways in which his parents helped support his math learning by testing his multiplication facts. Jorge explained that his parents also helped him with multiplication drills, even though they were not typically on flash cards.

H- Oh okay. Do you ever have any extra like activities that your parents give you that have to do with math? Like workbooks or anything?

J- No, but they help me like...they say...they help me practice my multiplication problems.

H- Oh like the facts?

J- Yes

H- Oh how do they help you?

J- They say like- they like surprise me they say what's this times this.

Jorge reported that these surprise drills helped him practice his multiplication facts at home, which he may have needed extra support with. Jorge indicated that his parents were helping him learn his multiplication facts through randomized quizzing, which would admittedly support his sense of competence since he was receiving practice in areas he seemed to feel he needed help in.

Jorge's perceptions and motivational outcomes. Largely, Jorge described homework time in a positive light portraying his homework environment as stress-free with the freedom to manage his own schedule. The level of independence Jorge's parents provided during homework seemed to support Jorge's sense of autonomy as he did not indicate feeling controlled and seemed to suggest that he believed he had the opportunity to make his own choices around homework. During the observation, it became clear that Jorge was highly self-regulated and his ability to choose his homework conditions did not have a negative impact on his ability to stay

engaged during homework. He was able to redirect his attention through the many distractions that occurred while he completed his homework outside. For example, since Jorge was completing his homework outside while his cousins were also outside playing, he chose to sit at the table outside with his back to them. Throughout the observation, he does not turn around to see what they were doing, even though they were playing loudly. An additional potential distraction was a nearby park which was visible from his backyard. Children were aggressively playing basketball at the park, cursing and yelling at each other during the game. During one moment, Jorge looks up at me and smiles as I am unknowingly shaking my head at the children who have started fighting, but he does not seem to give it any attention and he quickly goes back to completing his homework. He seemed to have a tremendous amount of self-control while completing his homework, as the environment was very noisy and at times distracted me.

By not imposing their help, Jorge's parents seemed to give him an opportunity to challenge himself to solve the problems on his own first. As he explained, this type of support helped to foster a mastery supportive environment.

J- No I always ask for help only when I need it. I always want to learn to know the answer so that all my answers are right, so I could get all my answers right in school too.

H- So when you ask for help your mom and dad help you right away.

J- They want me to try it by myself first, so they want me to push myself first.

H- Okay, I see, that's great.

J- Yea I like to push myself always to do my best.

Jorge seemed to be mastery oriented and genuinely concerned about the learning process and understanding the mathematics without help, but he recognized that he could further his learning by asking questions when he needed help.

Jorge described feeling highly efficacious in mathematics and capable of doing his work on his own and he demonstrated this during the observation by completing his homework

without any help and stating that it wasn't difficult for him. "I was fine by myself," he explained. As Jorge conveyed, he didn't need help from anyone. When asked during the observation if it was difficult he stated, "No, it's easy. I had a lot of homework though." Jorge also suggested that he was intrinsically motivated in mathematics. He explained that math is his favorite subject and reported that he really enjoyed working on his math homework.

J- Because I like math a lot.

H- Oh okay. If I were to say to list your favorite subjects from your first to your least. Where's math? From your favorite to your least favorite? Where's math

J- Favorite.

Jorge's high sense of self-efficacy with the homework and mathematics seemed to also support his positive affect. Throughout the observation, Jorge seemed to be very happy. When discussing how he generally felt during homework, he indicated that he was comfortable. He explained that he didn't generally want to quit doing his homework and that he enjoyed it, "Yea because I like it; I don't get frustrated."

Achievement. Overall his high achievement scores seemed to be related to his basic needs support. All questions that Jorge handed in for the simulated homework tasks administered for this study were correct. Jorge's parents engaged in more supportive practices and the least amount of inhibitive practices as compared with the other students in the study. It may also be the case that Jorge's high ability/ achievement influenced his parents' involvement as supportive, however his parents discussed deliberately engaging in practices in alignment with Jorge's preferences as well as to promote responsibility and independent problem solving. Jorge seemed to have positive motivational outcomes such as self-regulation, high self-efficacy, positive affect, mastery orientation, and intrinsic motivation. It seems that the basic needs support which Jorge seemed to internalize, may have played a role in his level of motivation, and ultimately his achievement.

5.3 Aisha

Aisha is an African American girl. She is the younger of two children, however she is significantly younger than her older sister who is in college and does not live at home. Aisha lives in an apartment with her mother. Her aunt lives downstairs in the same building and watches Aisha if her mother is home late. Aisha was very talkative during homework trying to start up a conversation with me and she was very articulate when explaining her thoughts and feelings. Parents who were more inhibitive than supportive for two or more basic needs were characterized as providing low quality support. Aisha's case represents low quality support, with more inhibitive practices than any of the other dyads.

Minimal instructional support. During the homework observation, Aisha's mother did not provide any instructional support. When pressed during the interview about any instances where she did try and provide instructional support, her mother explained that whenever she did try to help, Aisha couldn't understand the help, so she in essence was giving her the answers.

M- Because she- she wants the answers and so for me, I don't wanna give her the answers. And so then she'll just throw a fit then she'll just start cryin'. And then if I want her homework completed I have to like go and say, "ok, this is what you need to do" and break it down for her.

H- Okay.

M- And then basically while I'm breakin' it down, I'm givin' her the answer, so...that's what she wants. Basically if I have the strength, I wind up giving her the answer, if I'm not in the mood, I can ignore her and let her try and do her homework herself when I know she isn't

Aisha's mom explained that she felt Aisha was only seeking answers when she asked for help, so she chose to ignore her requests for help. Even though Aisha's mom talked about being a "math genius," she did not feel she could provide Aisha with appropriate scaffolding without giving her the answers. Coupled with not providing the necessary instructional support that she needed, Aisha's mom hindered her sense of competence by giving Aisha the answers without fostering understanding.

Aisha's mom suggested that it was not necessarily her responsibility to teach her daughter mathematics. She believed that helping her daughter with her homework when she was struggling would suggest to the teacher that her child was comfortable with the math, which she wasn't.

I wait for her to ask. And then most of the time, I still don't give it. I let her figure out as much as possible that she's gettin' for herself. Let her teacher know she doesn't understand it. Let them teach it to her, so they know where she is having problems- where they didn't teach it correctly.

In this case, Aisha's mom thought it was important that Aisha's teacher know where her daughter was struggling in order to provide her with the help she needed in the classroom. Aisha's mom seemed to believe that it was the teacher's responsibility to help her struggling daughter, and that it was not necessarily her role as the parent. Unfortunately, Aisha seemed to need instructional support which she did not receive therefore seemingly inhibiting her competence.

Aisha seemed to suggest that she recognized that her mother wasn't a source of instructional support. When asked if she felt she received help when she asked for it, she explained, "No. Sometimes she is busy too help or is watching TV or says I should keep trying." She later suggested that this had an impact on the quality of her work.

A- Yea, she just says, it's your problem, Aisha. I already did my homework when I was young. This is your problem. Not mine. (In an attempt to mimic her mother's voice- then laughs)

H- (laughing) oh okay, so she just wants you to do it without having to help.

A- Yea, she doesn't want to help.

H- Do you sometimes not finish your homework then if you don't understand it and you don't have help.

A- Yea sometimes. Sometimes I just try my hardest and just give the teacher that. She just says try your best.

As Aisha revealed, not receiving help made it very difficult for her to complete her homework. She explained that she often didn't complete her homework because her mother stressed that it

was not her responsibility. As a result, Aisha's mom did not support her need for competence, since her requests for assistance were not answered which fostered her ongoing struggle with understanding the material. In addition, by not providing the support she requested, Aisha's mother may have also inhibited her sense of relatedness since she deliberately ignored her requests.

Minimal monitoring. Aisha sat at the dining room table to complete her homework while her mother sat in the living room watching TV. With the open floor plan of her home, the living room and dining room table was not separated by a wall, so Aisha could see the television if she wanted to and her mother could turn around and watch Aisha if she chose. Aisha's mother engaged in *minimal monitoring*, remaining in another room while Aisha completed her homework. She wanted Aisha to complete the simulated homework tasks and her homework on her own even though Aisha wanted assistance. When Aisha's mother was asked about her lack of monitoring she explained, "No, those days are over. There is only so much you can do for her." She indicated that she did not feel like monitoring would help Aisha, because "she doesn't wanna do it. She's wants all the answers." Her mother explained that being around Aisha would distract her, because she was "easily distracted" and implied that if she monitored, she'd have to provide instructional support that Aisha would struggle to understand and ultimately she'd just be giving her the answers. Aisha's mom stressed that she wanted Aisha to work on her own and figure out as much as possible on her own, but instead her mom reported, "...she's just sitting here, not paying attention or not doing what she has to do." Aisha's mother stressed that she didn't monitor, because she wanted Aisha to work independently. Withholding monitoring during homework could potentially allow for independent problem solving which could ultimately support autonomy; however in this case it seemed to inhibit to be inhibiting, because

she did not provide the assistance that Aisha requested. Even though, she wanted Aisha to complete the simulated homework tasks and her homework on her own, Aisha wanted assistance. During the observation, Aisha read the first question on the first simulated homework task, and asked her mom for help. She said she didn't know what to do and her mother ignored her. Aisha requested help, her mother stated, "I'm watching Dr. Phil, leave me alone." Not having control over when she received help might have inhibited her sense of autonomy.

Imposing strategy. As Aisha's mom explained, Aisha struggled to understand when she tried to provide her with instructional support. She stressed that one reason for this was because of the method her daughter was taught in school. Aisha's mom described disliking the "new method" and explained that whenever she did try to help Aisha, she would force her to use her problem solving method instead of the strategy that Aisha was more familiar with. Aisha's mom explained that she would require Aisha to learn and use her methods, because she felt that they were better than the solution strategies that the teacher had her use.

H- If she is productively working using a math strategy that is different from yours then what happens? If she's doing it right?... Then what happens, if you see it and it's different from how you would do it?

M- Oh, I try to force my way on her.

H- Oh, you try to force your way on her, okay. Why is that?

M- In real life, people do it my way. She's not going to be at the supermarket and figuring out a problem using their type of math.

Aisha's mom explained that she believed it was necessary for Aisha to use the math strategy that she used, because it was more practical than the way she was learning in school. She was very negative about the curriculum throughout the interview, because she felt it was not a useful way to solve math problems. She later explained that the method Aisha was learning in school was a barrier that prevented her from really learning and understanding the mathematics.

For Aisha, having to balance the different approaches had an impact on her school work and her ability to solve problems at home and at school since her mother did not

allow her to use the method her teacher taught her during homework.

H- Okay. Do you ever solve your math problems in a different way from the way that your mom solves it?

A- Yes very... She might say, 'that's not the way we do it.' Like she taught me how to do some method, 'you do it just like that. You don't do the potion quotient. Whatever it is.'

H- Is that what the teacher teaches you? The potion quotient? What does your mom call it?

A- She just calls it-. She just calls it all wrong...

H- I mean do you solve it her way or your way?

A- It's a mix with my and her method, because I got her method stuck in my head.

H- Does she teach you her method?

A- Yes all the time

H- And which method do you prefer? Which one do you like better?

A- Mine but I use her method since she makes me and I have to use it around her so sometimes I like it better than mine but when I'm in school and the teacher teaches me her way, I start to not understand any way

H- Sometimes, you like your mom's method better than the one your teacher teaches you?

A- Yes

H- Why is that? Does your mom explain it better than your teacher?

A- Mmmhmm. She gets it stuck in my head and sometimes it's a jumble of both

H- And when you do it at school, which one do you use?

A- Momm

H- Your mom's? Does your teacher care which one you use

A- No

H- She doesn't? As long as you get the right answer?

A- Mmmhmm IF (stressed the word if) I get the right answer

Aisha explained that she did not have a choice in which method to use at home. Since her mom imposed her methodology on Aisha, it was difficult for Aisha to go back to using the method her teacher used in school. Aisha explained that she didn't mind using her mother's method at home, but it was extremely confusing for her when her teacher used the reform-based method, which Aisha was no longer using at home. Not being able to use a set method made it difficult for Aisha to transition back and forth from home to school. Aisha seemed to prefer her mother's method and her teacher seemed to give her the autonomy to use whatever method she wanted to use. Unfortunately, Aisha's struggles surfaced greatest when her teacher was teaching the class

using the school preferred methods. Not allowing Aisha to use the method she was taught in school at home, made her to lose practice with the method and this became complicated when her teacher would use that method in school. Aisha's mother seemed more concerned with using the strategy she preferred than ensuring that her daughter was comprehending the work at school as well as at home. She indicated that the strategy she was taught in school was not productive and she forced Aisha to use her strategy when around her. Aisha's lack of choice in solution methods during homework seemed to inhibit her sense of autonomy. In addition, not allowing Aisha to use the method she was taught at school may have subsequently impaired her ability to understand the method her teacher was using during school, which may have inhibited Aisha's sense of competence.

While learning another method could have been helpful since Aisha preferred learning her mother's method, Aisha's mother did not provide sufficient instructional support to help Aisha master the method. Aisha herself stressed the word "if" when describing that her teacher wouldn't care what method she used *if* the answer was correct. She seemed to acknowledge that she didn't feel capable enough in either method to ensure she would get a problem correct. Having to use her mother's method at home and having to learn math differently at school seemed to be confusing to Aisha. Without a solid grasp of the mathematics, requiring the use of both strategies may actually hinder her competence.

Emotionally unavailable. Aisha's home observation revealed instances where her mother did not provide the emotional support that Aisha needed to be encouraged to complete or continue her homework. For example, Aisha's mother criticized Aisha for not understanding the homework. Her mother frequently talked down to Aisha telling her that she should know how to solve the problems she was struggling with. During the interview, she even teased Aisha about

her inability to do the homework. When asked about how she responds when Aisha accurately completes all her homework, her mom indicated that this may never have happened; making sure to let Aisha hear her say this.

H- Okay, how do you respond when she has completed her homework and has all the right answers?

(Side conversation with mom and Aisha)

M- (Laughing) has that ever even happened Aisha?

Aisha- Yea, I showed her all my right papers. The ones with 100s on them.

M-okay, okay (sarcastically) I'll put all good job.

Aisha seemed to be hurt by her mother's comment, especially after she had just shown her collection of assignments with the grade of a 100 on them during her portion of the interview. Her mother's comments seemed to convey to Aisha that her mother did not think she was capable of accurately completing her homework, which would inhibit her sense of competence.

Aisha provided another example that suggested her mother was not available for her emotionally when she wanted to get past her frustrations with her homework. She was asked to indicate how she got past her frustrations, but she could not identify anyone who helped to encourage her when she was feeling discouraged.

H- ... So then when you're frustrated like that what happens? You'll go through your- you'll cry sometimes...then you'll relax then you'll try it again. Does anyone else help you?

A- No

H- You'll usually get through it yourself when you're frustrated?

A- Yea

H- Do you motivate yourself you think?

A- No

H- Who motivates you?

A- No one.

Aisha didn't feel that she had anyone there to support her emotionally when she was feeling frustrated. Aisha's mother felt that she was being lazy, and didn't provide her the necessary instructional support, but ignoring her requests for help may have also resulted in a lack of emotional support. In addition to needing instructional support, Aisha's struggles may have also

led to a need for emotional support and encouragement during homework. This lack of emotional support may inhibit her need for relatedness at a time when she needed compassion and support.

Aisha's perceptions and motivational outcomes. Overall, Aisha described homework time as stressful because of her low self-efficacy with the mathematics. Aisha recognized her mother's attempts for providing her with structure by indicating that she knew she had an issue with television. "I have a condition with watching tv, so I have to do it my room." She indicated that her mother inhibited her autonomy by requiring her to do her homework in her room when she preferred to do it in the kitchen. In addition, while her mother's attempts to give her the space and freedom to work independently may have been rooted with the intention of promoting responsibility, Aisha became visibly upset during the observation when she requested her mother's assistance and did not receive it. During the observation, Aisha asked for help a number of times and her mother ignored her. In one example, Aisha called her mother, "mom, mom, mom, mom, I don't understand this, mom." Her mother didn't respond and continued to watch television. At one point, Aisha began to cry with frustration and her mother said, "She [this study] wanted to see what really happens, this is what really happens, she asks for help without trying and I ignore her." Aisha responded by saying, "I tried," while crying. The mood became very tense and Aisha's mother stayed firm about not helping or even seeing what the questions were asking. Ignoring her requests for help seemed to inhibit Aisha's competence and her relatedness, because Aisha wasn't receiving the help she requested and her mother disregarded her visible frustration; therefore not providing the necessary instructional or emotional support.

As a product of not receiving the help that she needed during homework, Aisha reported having a low sense of self-efficacy. Aisha did not feel capable of solving math problems.

H- When you're in math class, do you feel smart?

A- Nope.

H- How come?

A- I don't understand her. I don't understand what she is trying to teach us. I try and understand. I say ok you listen and pay attention, but there is no use.

Aisha's low sense of efficacy seemed evident in her inability to complete the math

Despite her desire to understand the math, she recognized her struggles, which ultimately seemed to be exacerbated by the lack of competence support she received at home.

Aisha's mother made several comments about it being "too late" for Aisha to learn the math, which seemed to convey maladaptive attributions to Aisha, suggesting that difficulty with homework could not be controlled or helped and that she might never be able to do well at math. Aisha was the only student in the sample to report maladaptive attributions. Her low expectations for Aisha's ability to understand the mathematics seemed to be particularly inhibiting considering Aisha's self-efficacy beliefs were already low. Her mother's low expectations may have intensified Aisha's low self-efficacy and attributed to her performance avoid goals. She explained that she would try and focus during class, but that no matter how hard she tried, it was useless. This seemed to worry her when she thought about being promoted to the fifth grade. "Oh I am ready for the fifth grade. I don't want them to think I'm not smart enough for the 5th grade or hey this girl won't never understand this stuff...she won't never know this stuff, like they find out." Aisha reported feeling as though her teacher may also think that she will never be able to understand the material. She described feeling worried that her teacher might discover her low competence and she might be asked to repeat the fourth grade. Aisha indicated that if her teachers found out about her low performance, they would also think that she was helpless.

Aisha explained that she was concerned with her lack of ability and looking unintelligent in front of her principal as well as her teacher. She indicated that she didn't want her teacher to get in trouble for her poor math performance, but also indicated being concerned about how she looked in comparison to her classmates.

She has been there for a long time. I don't want them to say she doesn't teach math right- all her students don't understand the math. I really don't want them to say it must not be her, it must be me- like I'm the only one. What if they say she is a good teacher, you just didn't understand the math now and you're not ready for 5th grade?

Aisha suggested that she knew that if she was the only one in the class underperforming, then it must not be the teacher's fault that her grades don't match the grades of her classmates. Her comments indicated that she may have a performance avoid goal, suggesting that her goal for performing well was to avoid standing out as incompetent and subsequently not being promoted to the next grade. Even though Aisha referred to her classmates, she seemed to indicate that she just wanted to do as well as them so that she wouldn't stand out as being an underperformer and subsequently not be promoted to the fifth grade.

She seemed to view intelligence as stable and seemed to believe that this was how everyone saw intelligence. It may be the case that Aisha picked up this view from her mother. When discussing the curriculum, Aisha's mother explained that it was too difficult for Aisha to ever understand the math this way. "...How could someone understand this nonsense? She won't learn nothing with this kind of work. She is lost and she won't come back." Aisha's mom elaborated that she didn't think Aisha learned anything at school, and she believed that Aisha was too far lost to be able to come back. She seemed to have an entity view of intelligence, seemingly attributing Aisha's struggles to uncontrollable, external, and stable variables such as the curriculum and her intelligence, which Aisha's mother suggested earlier was why she didn't provide the instructional support she was capable of providing. It seems that Aisha's mom's attribution of success or failure may have kept her from providing the competence support that Aisha desperately needed and wanted.

When discussing her inability to turn her homework in at times when she was struggling, her mother indicated that she avoided going to school in order to avoid her homework.

M- Tell the truth, you don't ever turn in your homework

A- Yes I do. I might turn it in late, but I turn it in

M- You do? Why not go to the school if you were going to- homework. You avoid going to school sometimes, so you don't have to do your homework. Tell her the truth. You lie about being sick so you don't have to go to school, because you didn't do your homework, because you didn't know how to do it.

A- I am sick those times. I don't like it. I don't want to get a bad grade if I go to school and it's wrong. I don't like to keep doing it wrong. I just can't do it (she starts to cry).

Aisha's performance avoid goal seemed to inhibit her ability to put forth the effort necessary to succeed, because she chose to avoid the challenge and not complete her homework, which also led her to avoid going to school. As evidenced from her interview and observation, Aisha seems to be unable to complete her homework correctly, which may have fostered her performance avoid goal and seemed to be crippling her ability to overcome the challenges of her homework.

Aisha stated that she did not see the value in the mathematics, even though her mother tried to convey the importance of understanding math.

H- Do you think math is important?

A- She says it is important.

H- Your mom? But you're not buying it?

A- No. I hope it's not. I hate it.

Aisha's struggles with the math seemed to influence her opinion on how important it is to learn and understand math.

Aisha also demonstrated negative affect during the observation and described feelings of negative affect in her interviews. During the observation, Aisha cried when she was frustrated about not receiving help during her homework and again when discussing her worries with her mother about not performing well on her math homework. She elaborated on her feeling of negative affect in the interview by explaining that she often felt frustrated when doing her homework.

H- How do you feel when you're doing your homework? So I'm going to give you some words: excited, frustrated, happy, or worried?

A- Frustrated

H- Frustrated why do you say that?

A- Because math is just not my favorite subject and I just don't like math

During the observation, she possessed several signs of negative affect such as frowning, crying, sadness, upset, frustration, aggravation, and boredom. She was very upset about her struggles with the math and just as sad and aggravated that her requests for assistance from her mother went unanswered. Ultimately, she was overwhelmed by the homework, as it seemed to be too challenging for her. Her feelings of frustration due to her lack of competence with the math seemed to enhance her physical manifestations of negative affect. Aisha seemed disengaged and distracted while working on her homework. She rarely looked down at the homework, fiddled with her pencil, and doodled on her paper. Aisha did not completely finish her homework or the simulated homework task that was required during the observation. She did not complete her actual homework assignment, stating that she was struggling and even proclaimed, "I don't want to do this; I really hate math." The lack of support she received seemed to be competence inhibiting and may have contributed to her feelings of amotivation considering that she couldn't receive the help she wanted.

Achievement. Aisha didn't complete her assigned homework, stating that she couldn't do any more of her homework and proclaimed that she had tried her best and "that's all the teacher really asks, for us to try our best." Not all of the simulated homework problems had responses and the ones with responses were incorrect and seemed to be random numbers. Overall Aisha's low achievement scores seemed to be related to her basic needs support. It is also possible that Aisha's low ability influenced her mother's controlling and competence inhibiting practices, however Aisha seemed to need her mother's help to improve her ability yet she did not receive it even though her mother was capable. Aisha's mother engaged in practices that were

primarily inhibiting of her basic needs, engaging in more inhibitive practices than any of the other students in the study. Aisha seemed to report primarily negative motivational outcomes such as maladaptive attributions, low self-efficacy, negative affect, and performance-avoid goals. It seems her mothers' inhibitive practices played a role in her levels of motivation, and may have ultimately exacerbated her low achievement.

5.4 Lamar

Lamar is an African American boy. He is the older sibling to his two year old brother. He lives with his younger brother, his mother, and grandparents in his grandparents' home. Jorge's grandfather watches him when he gets home from school before his mother gets home an hour later. Parents who were more inhibitive than supportive for one of the basic needs were characterized as providing mixed quality support. Lamar's case represents mixed quality support, with more inhibiting practices for autonomy.

Surveillance and Scaffolding. Lamar completed his homework in the dining room with his mother sitting beside him. Lamar's mother engaged in surveillance during the homework observation. Lamar's mother sat next to him while he did his homework for nearly the entire time. She and Lamar both discussed the intense level of monitoring in their interviews, explaining that if homework was still being done when Lamar's mother came home; she would monitor his progress by sitting beside him and checking each of the problems.

While sitting next to him during the observation, Lamar's mother provided Lamar with a tremendous amount of scaffolding. Initially, she sat quietly but as soon as she noticed there was hesitation to solve a problem, she started to provide help. In one example, Lamar was asked to make a spinner by holding a paper clip with the point of a pencil in the center of a pre-drawn circle with colors designated to parts of the circle like

a pie (see Appendix D). He was supposed to flick the paper clip while holding the pencil still in order to count the amount of times the spinner lands on each color. At first, Lamar did not understand how to do this and he was having difficulty with the instructions but he tried to proceed with solving the problem. With his mother's assistance in understanding the directions, he was able to solve the problem correctly which he may not have been able to do without her assistance.

Any time she noticed an error or noticed that he had stopped working, she provided help without being asked for help.

Most of the times I like to sit next to him to see what he's doing just to make sure as he goes along to correct him as opposed to wait till he's all done, because I find the kids get more frustrated when they- 'I did all this and now I got to do it over.' So I kind of got him along the way, so I kind of like to sit next to him and watch what he's doing, most of the time it works out pretty good, so that's good.

Lamar's mother explained that she felt the need to sit next to him to help him as he continued working instead of waiting until he completely finished his homework in order to check his work, knowing from previous experience that he hated to start his homework over.

Lamar's mother indicated that she knew that her son wouldn't want to have to start his homework over if she checked it later, so she felt that she had to impose help during monitoring. She described encouraging him to make sure that he got the answer right the first time instead of guessing when he was unsure, so that she didn't have to impose the help that she knew he didn't want, but needed.

You can't just leave it alone, you need to know what it is. He doesn't want to hear it though. I noticed when I started to really push on helping him, he started doing it right. He wanted me to get off his back, so he stopped just putting down any answer. When I saw his grades went up, I backed off a little. It's like he gets mad when I find a wrong answer, because he knows he has to take it back out and do it right this time. The math is completely different.

Lamar's mom explained that she pulled back her help when she noticed that he was putting in the effort to try and get his work done right the first time. While taking into account his preferences for correcting his homework as he went along and not checking it at the end and making him start over, Lamar's mother seemed to be supporting his autonomy by respecting his choice and preference. In addition, by monitoring as he went along, his mother could know exactly where he was stuck so that she could provide the appropriate amount of scaffolding instead of just giving him the answer. This scaffolding required Lamar to complete the work on his own after receiving the help he needed, which supported his sense of competence. She continued to support him by giving him space to work on his own once she noticed he was starting to take his time to get it right. Using her past experiences with Lamar as a measure, she also supported his sense of relatedness by helping him in a way that was individual to his desires during homework.

On the other hand, Lamar seemed to see any help as intrusive and explained that he didn't usually want or ask for the help. While receiving help from his mother, Lamar seemed fidgety and uncomfortable. He moved around in his chair, looked around the room, and twirled his pencil. He seemed annoyed when his mother asked him questions about a problem that he couldn't answer, even though she was mostly asking questions that helped Lamar solve the problem. He seemed to prefer to complete the work on his own and he seemed to see this help as an imposition.

L-Ummmm (pause) nooo I just like to do it by myself sometimes with no help...like I barely get help.

H- Mmmmm

L-I just get it done by myself.

H-Umm sooo do you think your mom today was helping you when you didn't need help?

L- Yea, no, both.

H- So she only helps you when you need help... you think?

L- Yea umm a little yeah. I just want quick help.

H- Right and today it took long?

L- Way long

H- So when she's helping you, you do need it? But maybe you don't want it?

L- Yea and Yea

As Lamar saw it, the help was not always welcome and he felt his mother's help took too long. He seemed to suggest that he wanted her help to be quicker, which in the observation seemed to mean he just wanted her to tell him the answer instead of making him do it over or figure it out.

Lamar later explained that he disliked receiving help so much that he tried to finish his homework in the time he had before his mother got home, in order to avoid her unwanted help, which he believed took too much of his time.

H-ohh ok umm so when your mom is sitting with you with your homework is that something that happens a lot or sometimes ...

L- ughh sometimes. It depends on how quick I finish my homework. Shheeee she she gets off work at around 4pm so I umm if she well I've been... I'd be done with my home now if she gets off

H- I see. So if you are done quickly, she won't be home in time to see your homework?

L- Yea

H- What about when she checks it?

L- If it looks fine, then she don't bother me

H- and when it doesn't look fine? She bothers you?

L- Yea (he grunts) she makes me do it over

H- So she checks every problem?

L- Not every problem, sometimes I guess

H- So sometimes its wrong, and she doesn't notice?

L- Yea

H- Do you not leave it blank then?

L- Yea I don't leave it blank, so its not easy to tell

H- I see. But don't you want to know the right answer?

L- When I want to know how to do it, I ask and she helps me, but it takes so long

H- So doing it over takes so long? I see

L- And I want to go to practice.

H- oh ok

Lamar discussed feeling so overwhelmed by the amount of uninitiated help he received from his mother, that he avoided completing his homework when she was home. He revealed that the

lack of control over how much help he received led to him rush through his homework and write down any answers in case his mother asked to see his homework. He seemed to indicate that the help his mother provided was not initiated and therefore this seemed to inhibit his feelings of autonomy so much so, that his only way of controlling the monitoring was to do his homework while his mother was at work, pretending to be finished even if he wasn't.

Overall, the help that Lamar's mom provided when monitoring could have supported his competence by providing Lamar with the instructional support he needed to learn how to solve the problems correctly. As his mom explained, if she waited for him to finish his homework before helping, he would be more upset about having to redo any of the homework problems. Therefore she felt that if she monitored his work as he went along, her instructional support might be more useful. In this case, helping even without Lamar's request for help, only enhanced his ability to solve his homework problems more accurately which would support his competence. On the other hand, Lamar was vocal about disliking his mother's monitoring; therefore it may have made him resistant and less appreciative of the help she was providing as a possible product of his feelings of a lack of autonomy. In response, Lamar avoided doing his homework when his mother was home in order to avoid receiving her unwanted help. His response to the monitoring seemed to hinder his competence since he often did not really complete his homework.

Strategy choice and Teaching new method. Lamar's mom reported feeling very comfortable with helping her son, even if she did not necessarily like the methods he was learning in school. She explained the importance of allowing her son to do the problem his way, but that it was equally important for him to learn another methodology in general, so that he could have that choice to make.

H- I know. So would you want him to learn your method for problems?

M- I think he needs to learn differently if you ask me whichever, to tell you the truth... if you ask me whichever way works better for him I think that's the best way he should learn

H- Which way? Your way or his way?

M- I think his way. I think he understands his way a little bit better, but I think he needs to learn different alternatives for doing different things like multiplication

H- And why?

M- Only because you know so he doesn't get... if he gets bottled up with one problem or a certain situation he'll have other ways to figure it out as opposed to being stuck on that one problem. For multiplication, I know they use the table. We use multiplication tables too, but... a number table is a little different and he understood it and I'm like. I just go with the flow and anything I can help him with now and that's where the conflict comes in with everybody here trying to help him prepare for what he knows, because everybody... everybody was taught the old way you know. What I try to make him understand is that it's okay to learn different ways of math. You know, you don't just have to learn the way that they teach you in school. It's good to learn different ways so that if you get stuck on something you can always turn to the alternative and then use that way to do your problem. He's still with that stage where, you can't really tell him anything.

By allowing Lamar to choose his methods to solve the problem, his mother was supporting his autonomy. In addition, she supported his competence by teaching him another problem solving method and ensuring that he even understood another methodology actually gave him something to choose between, which may further enhance his sense of autonomy. She did recognize as well, that it was difficult to convince Lamar of the benefits of learning beyond what he was required.

Lamar indicated that he, like almost all the children in the sample, preferred to use the lattice method when solving math problems.

H- Have you ever had it where your using the lattice method and your mom or maybe your grandfather, whoever is helping you is doing the math another way ?

L- Yeaah yes

H- Ok so then what happened?

L- So the lattice is much easier for me

H- Sure right

L- Cause it's much easier to see and do

Lamar explained that the more visual aspects of the lattice method made it easier for him to solve problems. Given his knowledge of his mother's methodology he had a real choice to make

between two methods, ultimately selecting the lattice method. Lamar seemed to recognize that it was his choice to make. He also revealed that he felt so comfortable with his method that he taught it to his mother and grandfather. Having the opportunity to discuss his method with his family may have supported his competence by making him feel more capable with his preferred methodology and giving him practice in breaking it down.

Structure. Lamar and his mother both agreed that structure was necessary during homework time. Lamar had a number of extra-curricular activities that required his time after school. As he explained, he got to his homework as soon as he got home. He explained, “I can get it done early so I don’t have to finish it at night whenever I have to go back to school.” Lamar avoided the need to do homework at night, which was part of a homework routine that he established along with his mother.

Lamar’s mom explained that her son’s schedule was essential, because the number of extra-curricular activities he had, made it necessary to do his homework right after school.

Well we...that’s pretty much how we always ran things. I say we, but pretty much with him because ever since he’s been 5, he’s been in a lot of activities between playing football and basketball and baseball and all that stuff so we tell him. In the beginning it used to be he’d come in and not do his homework and then he had these activities and then it’s late, then he’s sitting at the table ready to fall asleep, so we came to the conclusion if you have time come right in, do your homework, get it done...

Together, Lamar and his mother agreed that getting his homework done as soon as he got home was the best plan for him. His mother stressed that Lamar played a crucial role in establishing the schedule stating; “we came to the conclusion...” Establishing a homework schedule helped to provide structure during homework that allowed Lamar to balance his time between his extracurricular activities while ensuring time to be productive and do his homework. Providing structure seemed to support his competence through the emphasis of clear rules and expectations that ensured Lamar knew what was expected of him during homework and how to obtain it.

Allowing Lamar a role in coming up with his schedule seemed to also support his sense of autonomy, as he recognized in the interview that it was his decision to do his homework before practice, because he wanted to avoid doing homework at night when he was tired.

Regulating emotion. Lamar's mother discussed the need to control her own emotions during stressful times with homework. She explained that in response to his difficulty with the homework and his resistance to receive help, they both experienced frustration. In response, she described attempts at regulating her own emotions and behavior, with the intent of minimizing conflict that might provoke a lack of closeness with Lamar.

Lamar's mom explained that she often became frustrated when working with Lamar, but that she had to learn to control her emotions in order to be able to provide productive support.

...for the most part, I need patience. Sometimes I get frustrated with him I really do, especially when I know he knows the answer and he's just not thinking about it and then eventually he'll you know. I've had to learn to control that, because sometimes if you're really upset like, 'Lamar you know this, think about what you're doing,' this that and the other, but that's pretty much just being patient.

In an attempt to support Lamar, his mother found it necessary to control her own emotions in order to keep a positive relationship with her son. During the observation, Lamar's mom remained very patient when trying to motivate Lamar to continue pushing himself to find the correct answer, even when he seemed frustrated. When frustrations arose during homework, she made sure that she kept patient, because she wanted to avoid any conflict that might lead to a lack of closeness and inhibit feelings of relatedness.

Lamar's perceptions and motivational outcomes. Throughout the observation, Lamar seemed exhausted and uninterested in completing the homework tasks. In one example, near the end of the observation, Lamar said he was done with his homework, but his mother pointed out that he had missed the last question which was an open-ended question asking him to write a story that demonstrated the mathematical problem he just solved above. Lamar got visibly upset

and began to make sounds of agitation and put his head on the table. By the end of the observation, Lamar seemed exhausted and relieved to be done, sighing and throwing up his hands. His physical demonstrations of negative affect during the observation coupled with his admissions of rushing through his homework, sometimes guessing, seemed to suggest that Lamar was not completely motivated during homework and had a completion goal.

Even though Lamar did not discuss his mother's competence support, he indicated that he felt capable completing his math homework and that he was good at math. He discussed that he felt comfortable teaching his method for solving math problems to his mother and grandfather. He even explained his problem solving method to me during the interview.

L- Yeah the partial sum or the partial product.

H- Ok.

L-Yeah so it's like a long way. It's just like the old way but it just goes up

H- Yeah I know I've seen it....it looks weird (laughing)

L-And it's like the plus is at bottom and then the number (pause).... that your dividing is supposed to be like a 100 and it's supposed to be inside that line that goes across.

H- Mmmmm yea right...I've seen this...ok,

L- 100 and then there's supposed to be a 10

H- And your dividing by 10?

L- And then you put the 10 there and then you put and then you know that ten times ten is 100 so you put the 100 there and then you subtract that and it becomes a zero

H-Ok so that makes sense to you?

L- Yeah

Lamar's vivid explanation of his method of division demonstrates that he felt competent enough to teach others. Lamar explained that he felt he was good at math which seemed to support his high sense of self- efficacy. His high sense of efficacy may have stemmed from the ample competence support his mother provided during homework, which allowed him the opportunity for deeper learning.

Lamar also explained that he wanted to do well, because he wanted to receive good grades and avoid the punishment of not going to practice for the multiple sports he played. This

suggested that he might be extrinsically motivated, despite his mother's attempts to stress mastery.

H- Ok. Why do you try to do well on your math homework?

L- So I can be better at math and get better grades and stuff and more grades so I can do all my sports.

H- If you don't do well in school can you still play your sports and stuff?

L- Not really.

H- Why?

L- Cause my parents want me to do good in school so I can play my sports.

H- Okay...so you have to keep up your grades?

L- Yes.

Lamar seemed to be extrinsically motivated by the rewards and punishment his mother applied in order to maintain a structured balance between his school work and his busy extra-curricular schedule. Lamar indicated throughout the interview that he worried about his grades because he was concerned about being smart, but also because he didn't want to jeopardize his ability to play the sports he loved. His focus seemed to be external and primarily about obtaining or maintaining his privileges by keeping up his grades. However, Lamar also explained that he knew he needed to do well in math, because he wanted to go to college and it was necessary for him to excel in mathematics at school now in order to excel in college.

H- Okay, do you feel like math is important?

L- Yes

H- Why?

L- Because I think math helps you with your numbers so you can learn to grow up with numbers and once you get into college, you can know your division and stuff.

He recognized that mathematics would be a part of his future just as it was a part of his present learning, and therefore he seemed to recognize the utility value in understanding math and his actions for attempting to excel in mathematics suggested he had identified regulation since he valued and accepted the objective to succeed on his own

Achievement. Overall Lamar's moderate achievement score of a C+ and his low homework completion rate of 65% seemed to be related to his basic needs support. His teacher noted that some of his homework is perfectly complete while other assignments are incomplete or have random answers filled in. All his problems were correct on his simulated homework task. Lamar seemed to report both positive and negative motivational outcomes such as high self-efficacy and high value for math but extrinsic motivation and completion goals. Although Lamar's mother tried to tailor her involvement based on Lamar's preferences, her controlling practices influenced Lamar's actions. Lamar responded to his mothers' inhibitive practices of monitoring and uninitiated help by trying to rush through his homework before she came home, thereby ignoring accuracy and causing low homework completion. Lamar did not want to take advantage of his mother's extensive ability to provide instructional support, which may have led to his moderate achievement that seemingly could have been higher considering the level of competence support he had available at home.

5.5 Summary of Cases

Each of these cases represented a different level of basic needs support. Jorge represented the most number of basic needs supportive practices while Aisha's mother engaged in the greatest amount of inhibitive practices. Lamar represented the students whose parents engaged in a blend of inhibitive and supportive practices, but were particularly inhibitive of a single need, which in Lamar's case was autonomy.

Many of the parents engaged in similar practices such as checking homework, engaging in providing rewards and punishment in response to homework completion, encouraging mathematical explanation, or teaching their child a new method for solving problems. None of the practices seemed to have a particularly polarizing influence on the quality of involvement.

Inhibitive practices in general though, seemed to overshadow supportive practices. All but one of the parents engaged in supportive and inhibitive practices in combination and simultaneously during homework, therefore it was necessary to identify how parents employed supportive and inhibitive practices in combination during homework in order to determine how students might respond in terms of their outcomes. The cases revealed that being more inhibitive of any need may potentially overshadow being supportive of other basic needs and reduce motivation and achievement. As evidenced in Table 5-1 which compares each of the students selected for individual cases, Jorge's mother did not engage in any inhibiting practices and Jorge did not report having any negative motivational outcomes. Aisha's mother engaged in some supportive practices, but overall engaged in more inhibitive practices for all the basic needs. During her interview, Aisha did not really discuss any of her mother's supportive practices and focused primarily on the influence of the inhibitive practices. As a potential result of those inhibitive practices, Aisha did not report any positive motivational outcomes. Lamar's case is of particular interest, because Aisha and Jorge represent each side of the spectrum, while Lamar represented how motivation and achievement may be affected when needs support isn't clearly all supportive or inhibitive. Lamar's mother engaged in practices that supported all of his basic needs, but she engaged in more practices that inhibited his autonomy than supported it. Her autonomy inhibitive practices seemed to overshadow her supportive practices for competence and relatedness. Moreover, in an attempt to compensate for the lack of autonomy, Lamar disregarded her competence support even when he could have used her help. This mixed level of support for his basic needs, matched the equal amount of positive and negative outcomes he reported.

Table 5-1: Cases comparison

	Jorge	Aisha	Lamar
Achievement	A	F	C+
Homework completion	98%	10%	65%
Autonomy Support	Minimal Monitoring, Select homework conditions, Strategy choice	Minimal Monitoring,	Select homework conditions, Strategy choice
Autonomy Inhibiting	-	Imposing instruction, Rewards and punishment, Restrict homework conditions	Surveillance, Imposing instruction, Rewards and Punishment
Competence Support	Strategy choice, Environmental structuring, Checking work, Teaching new method, Scaffolding, Encouraging mathematical explanations, Going beyond, Translating	Environmental Structuring Checking work, Teaching new method, encouraging mathematical explanation	Environmental Structuring, Checking work, Teaching new method, Scaffolding, Encouraging mathematical explanation, Going beyond
Competence Inhibiting	-	Minimal instructional support, Maladaptive involvement	-
Relatedness Support	Ensuring availability and bonding, Knowing Child	-	Regulating emotions, Knowing child
Relatedness Inhibiting	-	Ignoring child, Being emotionally unavailable	-
Positive Motivational Outcomes	Positive affect, Self- efficacy, Intrinsic motivation, Mastery goals, Adaptive attributions, Value, Self- regulation		Self-efficacy, Value, Self-regulation
Negative Motivational Outcomes	-	Low self- efficacy, Negative affect, Amotivation, Completion goal, Performance avoid goal, Maladaptive attribution	Extrinsic motivation, Completion goal

While each case is different, the similarities reveal that the inhibiting practices may have played a large role in how the child perceived their parents' attempts at working with them during homework. Since each of the parents reported engaging in some positive practices, it is interesting that children primarily reported on the negative practices that their parents engaged in, even when prompted about the positive practices. This suggests that inhibitive practices may have been more internalized and subsequently inhibited their perception of the potentially positive practices.

Homework completion also seemed to have an impact on achievement in each of these cases. Jorge completed all of his math homework and he had high mathematical achievement while Aisha rarely handed in her homework and her achievement was low. Lamar's moderate homework completion rate seemed to be a result of his rushing to complete his homework before his mother came home from school, which was a direct response to his mother's homework practices. His teacher even noted that some of his homework is perfectly complete while other assignments are incomplete or have random answers filled in. His homework environment seemed to have caused his rushed homework, resulting in a homework score that was not as high as he may be capable of. His achievement score may also be a product of his lack of willingness to accept his mother's instructional support when he needed it, because she provided more instructional support than he wanted.

Perceptions of parent involvement. Parents' reported perceptions of how a parent should be or should not be involved during homework seemed to have the largest impact on the quality of their parent involvement. Aisha's mother reported wanting to promote independent problem solving. In addition, she did not feel it was her responsibility as a parent to teach her daughter the material she was struggling with. She explained that she believed it was the teacher's

responsibility to teach the material and her responsibility to create an environment that supported Aisha's homework independence. However since Aisha wanted and needed help from her mother that she was not getting, promoting independent problem solving came off as competence and relatedness inhibitive.

Jorge's mother also reported wanting to promote responsibility during homework. She and Jorge explained that he would only receive help if he needed and asked for help. Jorge's parents' didn't bother to control his decisions during homework, even letting him complete his homework outside. Jorge explained that when he needed help with his homework, he first had to demonstrate where he was getting stuck so that they could provide him very specific help. They seemed to believe that their role during homework was to allow their child to dictate their involvement, which came across as autonomy supportive but also competence supportive when necessary. Lamar's mother seemed to have the opposite perception of parent involvement. She explained that she felt it was important that she was as involved during homework as she could be, because she knew that her son needed help but would not ask for help if he needed it. Since her involvement was imposed, it came across as less competence supportive and more autonomy inhibitive.

Overall it seemed crucial that parents provide help with homework in response to their child's request, regardless of whether withholding help could potentially promote responsibility. In addition, even if parents don't see their role as being someone who provides help during homework, their children seem to believe that they are a source of help and they come to their parents asking for assistance. Parents' responses to their child's request for help, regardless of parents' intentions, seemed to have a large influence on the quality of parent involvement, because it seemed to influence each of the basic needs. Not responding to a child's request for

help may inhibit their autonomy, competence, and the resulting lack of emotional support may inhibit relatedness. On the other hand, responding to their request for help can promote autonomy and competence and suggest that the parent cares which may support relatedness as well.

Perceptions of the curriculum. While the curriculum was not a factor for Lamar and Jorge's mothers, Aisha's mother found that the novelty of the curriculum was not practical. She did not describe having difficulty with the curriculum, but she disliked the methods used in the curriculum. As a result, she restricted Aisha from using the methods she was learning in school during homework. While learning another method could have been helpful for promoting competence, Aisha acknowledged that she didn't feel capable of using either method. She also explained that having to use her mother's method at home and having to learn math differently at school seemed to be confusing. Without a solid grasp of the mathematics, requiring the use of both strategies seemed to hinder her competence.

Chapter 6: Discussion

Observations during homework coupled with interviews with parents and their child generated rich description of the range of home-based involvement practices parents employed during standards-based mathematics homework and the ways children perceived those practices as facilitative or inhibitive of their basic psychological needs for autonomy, competence, and relatedness. A deeper analysis of the profiles of parent involvement identified through patterns that constitute high, low, and mixed quality involvement as defined by parents' level of supportive and inhibitive practices and how parents employ supportive and inhibitive practices in combination during homework highlighted how students respond in terms of their outcomes.

The following discussion begins by revealing how the range of home-based involvement practices extend the current conceptualization of practices that can support or inhibit basic needs in urban cities during standards-based mathematics homework. Second, I discuss how children's interpretations align or mismatch parents' intent behind the involvement practice. Next, I discuss how this study extends SDT by addressing how parents' enactment of supportive and inhibitive practices in combination during homework impacts student outcomes. The discussion then focuses on how parent profiles of high, low, and mixed quality involvement address the mixed achievement for parent involvement in homework. Next, I discuss whether SDT is adequate in explaining the full range of practices in homework involvement, given observations, parent and student reports, and children's reported motivation. I then discuss the reasons that influence the variation in the quality of parents' homework involvement practices in light of parent characteristics and contextual features such as the role of the curriculum and urban context. Finally, I conclude by discussing the limitations of the study as well as future research recommendations and implications of the findings.

6.1 Range of home-based involvement practices

In an effort to build from existing classifications of parent involvement practices, this dissertation extends beyond the description of autonomy supportive versus controlling involvement during homework in order to include rich description of the types of employed competence and relatedness supportive and inhibiting practices. The following sections also discuss more broadly how prior conceptualizations of autonomy, competence, and relatedness relevant practices support and extend previous literature.

Autonomy-relevant practices. Parents seemed to facilitate autonomy by giving children the space to complete their work on their own while remaining responsive to children's requests and choices during homework through minimal monitoring and allowing children to select their homework conditions. These findings were in line with research on autonomy supportive environments and the significance of giving students a role in the decision making (Cooper & Valentine, 2000; Grolnick & Ryan, 1989) and allowing them to initiate their own behavior (Pomerantz et al., 2005). Parents' surveillance, providing rewards/punishments, and restricting their children from having a role in their homework structuring highlighted autonomy inhibitive practices. While parents reported wanting to enhance homework completion and achievement, children indicated that they found these practices controlling. When children felt that they did not have a choice in the level of their parents' involvement or that their preferences were not considered when establishing policies around homework, they described wanting more of a role in the decision making. Children's reactions to parents' controlling behaviors match previous research on controlling environments which indicate children feel controlled when parents engage in close monitoring, helping without being asked, imposing checking, making decisions without the child's approval (Pomerantz & Ruble, 1998) and responding to failure or low grades by implementing rewards or punishments (Ginsburg & Bronstein, 1993).

Parents also promoted or inhibited autonomy depending on whether they were responsive to their child's preference for using the problem solving methods they learned in school as opposed to requiring parents' own preferred traditional problem solving methods. Strategy choice and imposing strategy are findings that may be unique to the reform-based curriculum context. This context provided the opportunity for parents to promote autonomy by allowing their child to choose their own preferred methodology, giving them the choice to decide which

method he or she preferred to use. Parents reported wanting to promote responsibility and also to encourage their child to work through a problem independently. On the other hand, parents who did not find the new methods their children were using to be as productive as the methods they were familiar with, required their child to use a specific methodology when they completed their homework which removed choice and was perceived as controlling. As a result of imposing strategy, children reported feeling confused by having to use one method at home and another in school, which can lead to a sense of discord during homework. While previous research has discussed parent practices that develop students' problem-solving skills (Shumow, 1998); strategy choice and imposing strategy practices extend this research by describing how an unfamiliar context like the EM curriculum with new methodology may provide an opportunity for promoting choice and independence in problem solving or more controlling practices to conform children's method to match their own preferred methods. These practices highlight the importance of encouraging children to solve problems independently and feel a sense of ownership over their own homework, which may be prominent practices during homework since there are always multiple methods to solve a problem, and parents' methods may differ from their children even when children are not using a reform-based curriculum.

Competence-relevant practice. Competence supportive practices were the most representative of parent homework involvement. The high number of competence supportive practices is interesting given the heavy focus on autonomy support within SDT research. Parents provided competence support through practices such as scaffolding, encouraging mathematical explanation, advancing mathematics skills by going beyond required homework, and structure. Previous research has focused primarily on structure as a competence supportive practice and this has not been specific to the homework environment (Farkas & Grolnick, 2010; Grolnick &

Ryan, 1989). Using a Self-Determination Theory framework, motivational research has not explored beyond the benefits of structure to elaborate on the competence supportive benefits of scaffolding during homework. This is interesting given the vast amount of research on the benefits of scaffolding within the classroom (DeBaryshe et al., 1996; Farkas & Grolnick, 2010; Shumow, 1998). Results indicated that parents provided scaffolding in order to enhance their child's ability to solve a problem by providing the appropriate amount of assistance during homework. This was well received by children who described needing their parents help to be able to solve certain problems. This finding extends parent involvement research that has already identified the importance of scaffolding in the classroom (DeBaryshe et al., 1996; Shumow, 1998), by identifying the significance for competence support.

Moreover, children described welcoming checking, if it was solicited by the child, as it often prompted scaffolding. In contrast, checking work at the end of homework has primarily been conceptualized as a practice that parents engage in after children indicate they have finished their homework and therefore may be more indicative of surveillance and control (Pomerantz & Ruble, 1998). While one student described checking in this manner, the other children reported that they requested checking in order to assess their need for scaffolding, which they reported helped them solve problems. In addition, children discussed appreciating parents' efforts to enhance their learning beyond the homework assignment by providing flash cards to remember math facts or math activity workbooks to practice solving problems, describing that it helped them perform better in class. Thus, results suggest the import of differentiating the responsive nature of scaffolding from more general checking behaviors which are experienced as intrusive. These findings are in line with previous research which identifies solicited checking as

competence supportive (Pomerantz et al., 2006) but controlling if unsolicited (Grolnick et al, 2002; Pomerantz & Eaton, 2001).

Parents also engaged in two practices which seemed to be a result of working with a reform-based curriculum, encouraging math explanation and teaching new strategy. All of the parents reported encouraging their child to explain their problem solving strategy because of their unfamiliarity with the content. While a few parents explained that this also gave them a chance to identify particular areas of weakness in their child, the parents themselves stated that they primarily wanted to get a better grasp of how these new problem solving methods worked. Following their interest in learning their child's problem solving methods, almost all of the parents were compelled to explain their own methods to their child in order to then show the contrast between the methods and teach their child an alternate strategy. Despite the mismatch between standards-based mathematics strategies and their own employed methods, parents were able to further support their child's competence by allowing them the opportunity to explain their method while also learning a new alternate method. Children reported enjoying the opportunity to explain their own methods, because it made them feel competent and having the opportunity to learn a new method from their parents for solving problems was also well received when children were still able to sustain using their own preferred methods. Moreover, several of the children reported using both their method and the methods they learned from their parents to solve problems, which they indicated was useful. High achieving students seemed to be the ones who utilized both strategies and benefited most without confusion.

Therefore, it seems important that parents sustain strategy choice when introducing new methods in the case of a student who may not have the deep mathematical knowledge to seamlessly use two strategies, as they may already be struggling with understanding the concepts

of one method. As a result, teaching new strategy but then imposing that strategy on the child may be competence inhibiting when the child is already struggling to understand the one methodology which is constantly reinforced in school. These findings extend parent involvement research which discusses parents modeling their own strategies and asking children to explain their problem solving steps as a means to support learning (DeBaryshe et al., 1996, Shumow, 1998) by stressing the importance of children's ability to understand an additional problem solving method and fostering student choice for problem solving methods for promoting competence.

An identified competence inhibitive practice was minimal instructional support. Each of the parents explained that they minimized their instructional involvement because they wanted their child to be responsible for their own homework. However children indicated that the lack of instructional support hindered their ability to complete or learn from their homework and therefore this negatively influenced the quality of their parental involvement. This is in line with previous research on the negative influence of parents' lack of assistance during homework (Cooper et al., 2006) but extends SDT research by highlighting parents' minimal instructional support as competence inhibiting and detrimental to student learning.

Parents also engaged in maladaptive involvement practices or ineffective involvement strategies such as giving the child the answer to homework problems, providing advice that was detrimental to the child's ability to manage their homework, or criticizing the child when they were struggling. Parents who engaged in providing advice that hindered their child's ability to complete their homework explained that this was a result of their experienced difficulty with the curriculum and the challenge presented with the standards-based methods. Fostering misunderstanding given their own limited knowledge inhibited competence, despite their desire

to provide assistance when their child requested it. One parent explained that her child may have received the answers to homework from older siblings and another parent criticized her child's inability to complete the homework. These practices conveyed low ability expectation as well as hindering the child's opportunity to receive help. Minimal instructional support and maladaptive involvement practices match Cooper's (2007) findings on the mixed results of parent involvement and student achievement. This research extends SDT research by characterizing these practices as inhibitive of competence which helps to elaborate why these practices may lead to negative achievement.

Relatedness-relevant practices. Parents supported relatedness during homework by conveying enjoyment and sharing warm interactions during homework. Some children explained that homework time was a special time shared with their parents and parents described homework as a time to receive updates on the things the child was learning in school. By ensuring availability to help, children reported feeling that their parents were available to provide the support they needed during homework. In addition, parents controlled their emotions during stressful times with homework, which children reported helped them regulate their own emotions. Parents also supported relatedness by engaging in the practice of knowing child in which they modified their support strategies based on their child's preference. These relatedness supportive practices are important to consider given the emotional support and bonding that takes place during homework and the emotions that arise when parents communicate with their children during homework (Guthrie et al., 2000). While research on relatedness support during homework is limited, the practice of acknowledging the child's feelings by modifying involvement during homework supports prior research which suggests that taking the child's

interests and perspective into account helps make the child feel valued and supported (Grolnick, 2002).

Some of parents' practices had implications for inhibiting relatedness. In particular, parents conveyed a lack of emotional support by ignoring their child's requests for help or being emotionally unavailable when the child needed encouragement to continue completing their homework. While these parents explained that they wanted their child to complete their homework independently and that bonding during homework would only detract their attention from learning, these children discussed desiring attention during homework for emotional support and also for the help they needed. When children perceived this lack of attention or effort to bond, they responded with negative affect, such as crying or frustration, which hindered their ability to successfully complete their homework. This supports previous research on relatedness which indicates that children may become less engaged when they feel rejected if they are ignored or that they need more attention than they receive (Barber, 1997). Despite parents' intentions, these practices hinder the quality of parents' involvement.

6.2 Children's perceptions and parents' intent

SDT has largely focused on students' perceptions of parents' involvement when considering basic needs support (Grolnick et al., 1991; Grolnick et al., 2000, Grolnick et al., 2002; Pomerantz & Eaton, 2001). Moreover parents' intent and the reasons behind the selection of their practices have not been considered when studying the influence of their involvement on children's basic needs. While most research on SDT focuses on children's perceptions, this research largely ignores parents' reasons or intentions for engaging in practices which may be purposeful or a result of an inability to engage in certain practices. In an article on teacher's intent and reasons for being controlling, Johnmarshall Reeve (2009) describes a paradox where

teachers are often controlling during instruction despite having positive intentions for their students' best interest. Similarly, parents may engage in practices they deem as supportive, while their child experiences it as inhibitive. For instance, children may report that their parent didn't immediately respond to their requests for help, allowing them to struggle for a while before they receive help, which may be perceived by the children themselves as competence inhibitive. The parent in this case may be purposefully allowing their child to struggle in an attempt to encourage the child to try to overcome difficulty on their own, which may actually be fostering self-regulation skills. Kapur and Bielaczyc (2012) discuss that allowing children to struggle and try to solve problems on their own leads to greater problem solving ability and mathematical achievement. Therefore, allowing the child to struggle may actually be supportive for the child. On the other hand, a parent may not respond to their child's request for help, because their perceived knowledge and skills for a particular task may be low and they may feel unable to provide help. Moreover, parents' actions may also be in response to their individual child's behaviors and personal experience with their child that may suggest to the parent that a certain practice would be more or less effective with their child. Therefore, parents' intentions for involvement inform the selection and the reasons behind parents' practices are critical to the quality of their involvement practices. This does not disregard the import of children's perceptions because how children internalize these practices, regardless of parents' intentions, ultimately influences their motivation and subsequent achievement (Deci & Ryan, 1985). However, understanding parents' intentions and reasons for engaging in certain practices provides insight into the variation in the quality of parents' practices.

Parent involvement research has explored the factors that influence involvement and the reasons parents choose to get involved. This dissertation drew largely on Hoover-Dempsey and

Sandler's (1995, 1997, 2005) model of parent involvement to understand why parents chose certain supportive or inhibitive practices. Parents described several reasons behind their selection and use of certain practices, such as fostering independence, promoting responsibility, helping the child understand the homework material, or helping facilitate productivity and increasing their chances of success during homework. Despite parents' intentions, children's interpretations informed the classification of those practices given students' response as supportive and inhibitive of their motivation for homework. While a parent may think that they are engaging in a supportive practice, their child may actually find that practice inhibiting. This mismatch between parents' intent and children's perceptions is important given that parents' intentions for involvement influenced the selection of parents' practices, with implications for the quality of involvement. Parents' intentions and reasons for engaging in certain practices ties in Hoover-Dempsey's (1995, 1997, 2005) model of parent involvement with SDT's perspective on students' perceptions to fully understand the quality of parent involvement and the potential influence it has for children. The following sections discuss how children's perceptions of a parent practice shaped the classification of that practice as either supportive or inhibitive.

Providing structure. Parents' intent to provide structure was interpreted by some children as controlling but as competence supportive by other children. Parents engaged in dictating the rules about when and where their child did their homework with the ultimate intent of providing structure, however when children weren't incorporated in developing these rules and routines they perceived this practice as autonomy inhibiting. When parents established rules and a homework routine along with their child, children reported internalizing the rules as important for their learning and thus competence supportive, without detriments to autonomy. Therefore, although parents ultimately described wanting to promote optimal conditions to complete

homework, children only internalized this as supportive when they had a role in establishing the rules. This supports research on SDT which posits that autonomy support mediates the internalization of supportive actions which may initially be externally regulated, but over time may become internalized by the individual (Deci & Ryan, 1991).

Promoting responsibility. Parents who engaged in inhibitive practices seemed to do so unintentionally with the primary intention of promoting responsibility. For instance, parents reported engaging in minimal instructional support with the intention of promoting responsibility. They explained that they did not provide their child with instructional support, because they wanted him or her to take responsibility of their own homework. In addition, parents inhibited their child's sense of relatedness by ignoring their requests for help, as a means to promote responsibility by forcing their children to work on their homework independently.

However, despite the efforts to promote responsibility, children explained that the lack of help was seen as a barrier to their learning. Without their parents help, these children reported struggling without having a means for assistance, which inhibited their competence. Parents may have intended to foster self-regulatory skills as a product of promoting responsibility, however by not responding to their child's requests for help they prevented their children from learning the necessary skills to actually work independently. Research on self-regulation suggests that parents can promote self-regulated learning by giving children the tools to regulate their learning, because children are not instinctively self-regulated (Schunk & Zimmerman, 1998). Therefore, regardless of their parents' intent, minimal instructional support is interpreted as competence inhibiting, because their children do not have the necessary academic skills yet to sustain independent learning and they need their parents' help to achieve competence. In order to promote responsibility, children must first feel competent enough to solve problems

independently. Without receiving the help they ask for, children cannot benefit from their parents' ultimate intent of being competent self-regulated learners.

Children's interpretations of basic needs support. Previous research on parental involvement through a self-determination lens has relied on theoretical conceptualizations from self-determination theory to identify autonomy supportive vs. controlling practices. Children's interpretations of their parents' basic needs supportive or inhibitive practices during homework provided insight into what children interpret as positive or negative practices rather than relying on the assumptions from the literature to indicate what is potentially good or bad for the child. Most quantitative studies have asked children to best describe their parents' involvement by choosing between two pre-determined types of involvement or using a likert scale to indicate how their parent matched a description of a specific parent meant to suggest controlling or supportive practices (Grolnick et al., 1991; Grolnick et al., 2002). Therefore in many of these studies, children are not responding about their perceptions of their own parents' practices, which many influence their responses. For instance, a child may report that their parent sits next to them while completing their homework which will be marked by researchers as controlling, however the parent may be engaging in this practice in response to their child's request to sit near them and provide them with help as they are struggling. The child may perceive this practice as actually supporting their autonomy, competence, and relatedness; knowing that the reason their parent is engaging in this practice is in response to their request. Surveys should allow for an opportunity for children to indicate or rate their perceived level of support or inhibition in response to parent practices as well as having parents indicate the reason they are engaging in a specific practice. By asking children to discuss their interpretations about specific

practices their parents engaged in, this study extends previous research by highlighting the reasons that children reported a practice as supportive or inhibitive of their basic needs.

Each of the children in this study seemed to identify a practice as supportive of competence and relatedness based on their desire for their parents to listen to their perspective. Children's perceptions of autonomy support seemed to dictate their interpretations of a practice as supportive. For instance, help was considered intrusive for one child while a lack of help was detrimental to other children's success. Therefore, children seemed to overwhelmingly report interpreting their parents' behavior as supportive or inhibitive based primarily on whether they desired or solicited that parental behavior or requested that practice. For instance, children did not internalize structure, scaffolding, learning a new strategy, or ensuring availability as supportive unless they felt that they wanted that support from their parents. When children did not feel they had choice in structure, receiving help, or parental support, they interpreted those practices as controlling and dismissed their potential benefits. This is in line with Ryan and Deci's (1985, 2000) research that states that autonomy support is primary for supporting all basic needs and without a feeling of choice, children cannot internalize the benefits of competence or relatedness. This also reflects the importance of studying needs in combination, given that we need to account for autonomy support and inhibition in combination with competence and relatedness relevant practices to fully conceptualize this range. Recent research has highlighted the significance of a person-centered approach in order to assess the motivational processes that come together to influence various motivational outcomes and achievement (Conley, 2012; Wormington, Corpus, & Anderson, 2012). A person-centered approach allows for a more narrowed analysis of the individual by examining the relationship among variables at the level of the individual in order to group those with similar patterns into a profile (Wormington et al.,

2012). Few studies on parent involvement and SDT have used a person- centered approach, and no studies using a SDT framework for assessing the motivational benefits of parent involvement during homework have used this approach (Guay, Ratelle, & Chanal, 2008; Murdock & Miller, 2003; Lee & Bowen, 2006; Van Leeuwen, Mervielde, Braet, & Bosmans, 2004). The results of this study extend previous research by considering profiles of parent involvement identified through patterns that constitute high, low, and mixed quality involvement so as to highlight key relationships between each of the basic needs in order to promote greater quality involvement.

Along the same line, children reported a sense of relatedness support when their parents considered their preference during homework. By ensuring availability, parents demonstrated that they were available if their children requested their attention and were seemingly able to bond as a result. In addition, parents demonstrated that they cared about their child's preferences during the practice of knowing child, because they modified their support strategies based on their child's preferences. As a result of supporting their child's autonomy by supporting their choice and opinion, parents seemed to foster a sense of relatedness. Therefore, a significant theme within relatedness supportive and inhibitive practices, as reported by children is that feeling heard and listened to is interpreted as love and caring. This finding helps to extend prior research on Self- Determination Theory within parent involvement by characterizing how children view their parents' practices as having a positive or negative influence on their sense of relatedness.

Parent/ Child mismatch. Children's perceptions of parents' practices in some cases mismatched parents' intentions for engaging in those practices. In these cases, children primarily wanted their parents to be responsive to their requests and consider their opinions. In the example of differentiating structure from restrict homework conditions, parents intention of

promoting optimal conditions for completing homework were the same. However, when parents considered their child's input into forming rules around homework, children recognized the value of the rules as structure and supportive. Children described feeling controlled when their parents set rules for homework that they suggested they did not value. Therefore, children only internalized the benefits of structure when their parents involved them in creating rules around homework and communicating the value of having structure during homework. This suggests the importance for parents to communicate their intentions and discuss their reasons for engaging in certain practices in order to convey the value of their practices to their children. Knowledge of their parents' reasons for engaging in a certain practice may influence how they perceive that practice. Therefore, children may vary in how they perceive their parents' practices as supportive or inhibitive of their basic needs depending on their understanding of their parents' intentions.

The mismatch between parents' intent and children's perceptions also indicated that despite parents' positive intentions, children were interpreting some of their parents' practices as inhibitive and therefore this has an impact on the quality of parents' involvement and children's outcomes. While this mismatch may suggest a need for parents to communicate their intent to their children, it also suggests that parents may need to be sensitive to their child's requests during homework. In many of the cases, parents wanted to promote responsibility in children that seemed to need competence support foremost. Without receiving the assistance they needed on their homework, they did not have the ability to work independently. Therefore, although parents' intentions were positive, this suggests that by not providing scaffolding during homework in response to their child's request, parents are not meeting their child's basic need for competence and therefore parents could not yet promote responsibility. Thus it is vital that parents consider how their child may perceive a particular practice considering the potential

negative impact an inhibitive practice has. In essence, the alignment between parents' intentions and children's perceptions is a vital factor for distinguishing the quality of parents' practices, because how children perceive their parents' practice ultimately influences their outcomes.

These findings support those of the Rogat et al. (submitted manuscript) pilot study, which also found that parents' reasons for involvement influenced their enactment practices and the quality of parents' involvement. While this dissertation did not assess children's knowledge of their parents' reasons for involvement, these findings suggest a need to address whether the explicit communication of parents' reasoning for engaging in certain practices influences children's perceptions of the practices as supportive or inhibitive.

6.3 Quality of parent involvement

A full profile of parents' patterns revealed that parents' basic needs support seems to influence the quality of parent involvement. The results revealed that children's interpretations of high and low quality involvement match a SDT perspective on quality parent involvement. Children indicated that practices they found negative, inhibited their needs while practices they found positive supported their basic needs.

The cases provided an opportunity to see how parents' practices might influence motivation. The parents of the highest achieving children in this study engaged in primarily supportive practices and their children reported the highest level of motivation. In addition, children whose parents engaged in primarily needs inhibiting practices had the lowest achievement and reported the greatest number of maladaptive motivation. This supports the previous literature on parent involvement which indicates that high quality parent involvement is conceptualized as that which supports children's autonomy, competence, and relatedness

(Dumont et al., 2011; Grolnick & Slowiaczek, 1994; Grolnick et al., 1991; Hoover-Dempsey et al., 2001; Patall et al., 2008; Pomerantz et al., 2007).

While the extremes of engaging in supportive and inhibitive practices are well documented in previous literature, studies have not examined the profile of parents who employ a mixture of supportive and inhibitive practices. The findings from this study indicate that a full profile of parent patterns reveals that parents often engaged in a mix of practices that support and inhibit their basic needs, sometimes simultaneously. The interplay of supportive and inhibitive practices is critical in understanding the quality of involvement, with implications for engagement and achievement. Despite parents' supportive practices, inhibitive practices were related to both low or mixed achievement and motivation. The more inhibitive the practices, the lower the achievement and motivation; however more supportive practices did not necessarily translate into greater achievement. This suggests that inhibiting practices may have a stronger impact on students' motivation and achievement than supportive practices.

Inhibiting practices. The results revealed that the interplay of supportive and inhibitive practices underscored the larger impact of inhibiting practices on children's motivation and achievement. These children overwhelmingly discussed the inhibitive practices over describing their parents' supportive practices. Therefore, it seems that in the case of both supportive and inhibitive practices, the inhibiting practice overshadowed the supportive practice. The children discussed the inhibitive practices more than the multitude of supportive practices that their parents engaged in. The children seemed to find the inhibiting practices more salient than the other practices that their parents engaged in during homework. In many of the cases, children compensated for the missing need in a way that may prove detrimental by not completing homework or not focusing during homework. This supports research on SDT which stresses that

autonomy, competence, and relatedness are universal needs that are each essential for a child's well-being. As a result, when a particular need is thwarted, children may compensate for that need through practices that help to protect the hurt that results from psychological need thwarting which by doing so often causes negative behaviors which may inhibit their other needs (Deci & Ryan, 2000; Ntoumanis, 2011; Ryan, Deci, Grolnick, & La Guardia, 2006).

Autonomy vs competence and relatedness inhibiting. Even though all inhibiting practices were associated with mixed or low achievement and motivation; competence and relatedness inhibiting practices seemed to be associated with the lowest achievement and motivation. Although research on SDT explains that autonomy support is the primary need (Ryan & Deci, 2000), the results suggest that competence support may be more directly related to enhancing achievement. It may be that autonomy support is essential for internalizing the practices as supportive rather than inhibitive; however autonomy support alone without competence support may not be enough to enhance achievement. This may be because while autonomy supportive practices lay the foundation for accepting support, in the context of homework, competence supportive practices are those which actually demonstrate how the child can solve problems and achieve academic success. However, while competence support is important, it is important to note that the highest level of achievement was with both competence and autonomy support.

6.4 Is SDT adequate in explaining quality variation in parent involvement?

While the goal of this dissertation was to identify and vividly describe the parent practices that may support or inhibit children's basic needs given the primacy of SDT in home-based parent involvement literature, it is important to consider how other motivational theories may contribute to more broadly conceptualizing quality parent involvement. SDT seemed to be

the best fit for describing parent- student interactions during homework; however other motivational theories may help interpret these results if SDT falls short.

Self- Regulation. Many of the parents described wanting to promote self-regulated learning by encouraging their children to work by themselves. However, several of the children struggled to work on their own, because they were missing the competence necessary to work independently. This suggests the importance for teaching children how to work more independently, because children are not instinctively self- regulated learners (Schunk & Zimmerman, 1998). By establishing structure, providing assistance only in response to their child's requests, and modeling the regulation of their own emotions, parents seemed to be promoting and modeling self- regulation. However, this alone did not seem to be enough to promote self- regulation in each of the children whose parents engaged in these practice as their self- regulation seemed to be a result of all their basic needs being met, therefore giving them the resources necessary to monitor and regulate their learning independently.

Self-efficacy. Mathematical self- efficacy seemed to play a role in influencing children's success. For instance, children who reported low self- efficacy in mathematics were more likely to avoid engaging in their homework, vocalizing their lack of ability to understand and complete the math homework. On the other hand, parents promoted greater mathematical self- efficacy by engaging in going beyond. These parents supplemented the homework with activities and discussions that enhanced math learning beyond the homework. Each of the parents who engaged in going beyond had children who reported high mathematical self- efficacy. These parents also provided the greatest amount of competence support. This supports research by Bandura (2007) which explains that parents who promote optimal challenge and encourage effort foster greater self- efficacy beliefs.

Achievement goals. The parents in this study did not emphasize goal orientation specifically, but suggested that they were concerned with mastery by engaging in practices that supported their child's understanding. For instance, by going beyond, parents emphasized learning mathematics and enhancing their knowledge. In addition, parents may have promoted mastery by teaching their child their method for solving a problem as means to enhance their child's conceptual understanding of the mathematics and ability to solve problems. Some of the children suggested that they were mastery oriented and truly wanted to understand the mathematics. These children were the highest achievers and their parents provided the greatest amount of basic needs support. A high emphasis on competence support may have helped to enhance children's mastery goals, which are in line prior research detailing that parents may promote mastery by encouraging their child to try challenging problems, learn from their mistakes, and put forth effort to understand the math (Friedel et al., 2007).

On the other hand, one student indicated that she had a performance- avoid goal. This seemed to stem from her lack of ability and accompanying low self-efficacy to complete her homework. While her mother encouraged her to complete her homework, she did not provide her with the necessary help to complete her homework. This suggests that increased competence support, may have helped to evade performance- avoid goals. These findings suggest that parents may foster a specific goal orientation as a product of the quality of their competence support.

Expectancy and value. Parents' positive expectations for their children's success were not explicit from the interview and observation data. However, the results suggested that by providing instructional support, parents may have been conveying their expectations for their child's ability to understand the material. On the other hand, one parent conveyed that she did not have high expectations for her child's mathematical achievement and understanding. She

indicated that her daughter was not going to be able to succeed, because the mathematics was too difficult for her. She was a low achieving student who also expressed her low mathematics expectations which were reflected in her low achievement. This supports findings from Singh and colleagues (2002) who emphasize that children's mathematical expectations for success influence their actual mathematics achievement. Moreover by emphasizing her low expectations for her daughter, she seemed to hinder her daughter's mathematical self- efficacy.

Parents indicated that they valued mathematics and that they tried to emphasize the importance of learning mathematics for their child's future. Subsequently, each of the children stated that they knew that mathematics was important for their future in school and in everyday life. However since all of the students recognized the importance of mathematics, this does not shed light on the possible factors that influence quality variation in parent involvement. Parents may also have been inadvertently conveying their values and expectations through rewards and punishment by emphasizing what they wanted their child to do or not do. These overt actions may be controlling and undermine motivational benefits (Jacobs & Eccles, 2000).

Intelligence beliefs. Parents who emphasized the importance of effort did so by using encouraging language when their child solved a problem or was struggling to solve a problem. On the other hand, parents who viewed intelligence as stable conveyed to their child that there was no use in putting effort, because they did not have the intellect necessary to achieve. Several of the parents indicated that they valued effort, because they wanted their child to solve problems independently, however many of the children were not equipped with the necessary tools to enhance their learning. Perhaps a lack of assistance during homework, despite the intent, conveyed a belief that there was no use in providing help because the child was not intelligent

enough. Fleming et al., (2011) support these findings and emphasize the importance of encouraging the child despite preconceived perceptions of intelligence.

SDT. While each of these theories helps to explain children's motivation, parents' involvement practices seem to be best described through SDT. Assessing the role of children's motivation may help to elucidate or provide varying explanations for the mixed relations between parent involvement and academic outcomes with homework. These theories may broadly help to explain the practices that parents choose to engage in. For instance, parents may engage in rewards and punishment as a way to convey what they feel is important, what they expect from their child and what they value. As a result parents' practices are controlling and have an influence on children's motivation; however expectancy/ value theory helps to explain a potential reason for this practice. Therefore the primary impact of the practice is that it is controlling, which is best described through SDT. The following sections illustrate how well SDT and the other motivational theories describe the quality of involvement for the three case studies.

SDT in explaining, high, low, and mixed achievement. High quality involvement as defined by supporting all three basic needs can promote intrinsic motivation (Deci & Ryan, 1985) and ultimately may foster greater performance in school (Grolnick et al., 1991). In the case of the highest quality involvement, autonomy was not inhibited through any practice. Even competence supportive practices were grounded in autonomy support. This supports prior research on SDT and the quality of parents' involvement (Grolnick et al., 1991). It is important to also note that a reciprocal relationship is possible and that high achievement fostered more autonomy supportive parents who subsequently were more supportive of each of the basic needs.

Regardless, children whose parents were primarily supportive of their basic needs reported recognizing the support and seemed to be influenced by their parents' actions.

The lowest quality support case highlights the detriments of a lack of autonomy, competence, and relatedness. Inhibiting practices can have a negative impact on a child's motivation and achievement. As far as the negative impact of inhibiting basic needs, this case is also in line with research on quality parent involvement through an SDT lens (Grolnick et al., 1991). Moreover, the negative impact of autonomy and competence inhibition are particularly detrimental for students with low ability (Pomerantz et al., 2005). SDT, however, may not necessarily explain the high criticism and performance climate that was highlighted in the home environment in the lowest quality involvement case. The larger issue may be the child's lack of ability in mathematics which may inform parents' expectations. Parents' expectations may influence their involvement as well as their child's expectations of themselves (Eccles-Parsons et al., 1982; Eccles et al., 1998). Dweck and Leggett's (1998) theory on intelligence may have elements that better explain the negative influence of not helping due to a perceived lack of ability being stable and unchangeable.

In the mixed quality involvement case, with a mixture of both supportive and inhibitive practices the impact of a controlling environment seemed to overshadow the importance of competence and relatedness needs (Jang et al., 2010 Ryan & Deci, 2000; Skinner & Belmont, 1993). In this case, the controlling environment makes it difficult to fully benefit from the competence and relatedness support. Therefore, as SDT highlights, intrinsic motivation may be compromised as a result of an inability to perceive a sense of autonomy (Ryan & Deci, 2000). A lack of autonomy support may hinder the internalization of the benefits of competence and relatedness support, also inhibiting intrinsic motivation. It is possible that the child's behaviors

influence the parent's actions which result in a lack of autonomy support; however a lack of autonomy was highlighted by children as guiding their behaviors. Therefore, while it may be the case that children's behaviors prompted parents to engage in autonomy or competence inhibiting practices, children reported that their parents' practice did have an influence on their homework experience and therefore this is the relationship that is being highlighted.

6.5 Parent characteristics

Parent involvement model. This dissertation drew largely on Hoover-Dempsey and Sandler's (1995, 1997, 2005) model of parent involvement to better understand parents characteristics and the contextual features which may influence their involvement. Understanding why parents became involved in their children's education helped to identify the reasons why parents chose certain supportive or inhibitive practices. The results extended this model to help explain reasons *why* parents may vary in the quality of their homework involvement in light of these parent characteristics and contextual features. Three factors were reported by parents capturing the circumstances that may have had an impact on the quality of their involvement: perceptions of what parents believed parent involvement should be (ie. parents should or should not help their child with homework), parents' mathematical competence beliefs (ie. parents' level of comfort with mathematics), and perceptions of the curriculum and its novelty (ie. parents' level of comfort with the EM curriculum).

The results of this dissertation revealed that parents' reasons for involvement matched the most recent model of parent involvement which identified three reasons for involvement: (1) parents' motivational beliefs (2) their perceptions of invitations for involvement from others; and (3) their perceived life context" (Walker et al., 2005). Although parents mentioned each of these factors as having a potential influence on their involvement, the results revealed that parents'

selection of practices was informed primarily by parents' motivational beliefs. More specifically, parents reported that their perceptions of the role of parental involvement during homework overwhelmingly guided their decisions for enacting certain practices. Within parents' motivation beliefs, the parents in this study explained that they felt it was part of their role as parents to instill responsibility in their children in order for them to become effective at independent problem solving. Beyond their motivational beliefs, the second most reason for parents' variation in parent involvement practices was some level of difficulty with the EM curriculum.

Overall, parents' perceptions of their role as parents were a primary reason for their enactment of practices. More specifically parents explained that they wanted to foster their child's responsibility during homework. These results extend the conceptualization of parents' motivational beliefs by highlighting more specifically what parents' perceptions of involvement may be. Parents' reasons for their involvement seemed to have implications for the quality of the involvement. Parents that reported believing it was their responsibility to help their children with their homework seemed to have the highest quality involvement. Although this does not necessarily guarantee quality involvement, it does suggest that parents will respond to their child's struggles, which indicates that they will at least attempt to provide competence support and by providing help, parents are more likely to provide relatedness support. On the other hand, parents who reported that they believed it was not their responsibility to help their child seemed to engage in the lowest quality involvement. This seemed to be because they provided a minimal amount of support during homework when all the children in the study reported wanting some involvement. Parents who responded to their children's requests for help also demonstrated high quality parent involvement. This seemed to be related to all three of the basic needs. Parents who listened to their children's request for help during frustration, seemed to support all their basic

needs by providing responsive instructional and emotional assistance. As a result, it is interesting that parents' reasons for involvement were also associated with high quality parent involvement as described by basic needs support.

One challenge to involvement was some parents' competence beliefs for the curriculum. In line with prior research as well as the Rogat et al. (submitted manuscript) pilot study, many of the parents in the sample described the mathematics and EM homework tasks as challenging (Remillard & Jackson, 2006). These parents indicated that the challenging curriculum seemed to lower their own sense of self-efficacy in mathematics, because they discussed feeling upset about their inability to provide adequate competence support. These findings support recent amendments to Hoover-Dempsey and Sandler's parent involvement frameworks which indicate that it is necessary to represent the particular homework context since it may influence parents' enactment of practices (Walker et al., 2005). For instance, this homework context includes a challenging curriculum which in some cases played a role in lowering parents' perceptions of their knowledge and/or skills. This context influences the practices that parents choose to employ.

Everyday Mathematics curriculum. This dissertation validated Hoover-Dempsey and Sandler's (2005) updated model indicating that parents' perceived knowledge and skills for a particular domain can influence the enactment of home-based parent involvement (Walker, et al., 2005). Parents described the curriculum in ways that suggest that they either valued the curriculum as cutting edge or they found that it was too novel for students to benefit from or understand. Parents' views of the curriculum may have had an impact on the quality of their involvement. The novelty of the curriculum presented a unique context for involvement and

seemed to have implications for parents' ability to support or inhibit their children's basic needs for autonomy and competence during homework.

Fostering and hindering autonomy support. The results revealed that the EM curriculum presented a context, in some cases, was a barrier to autonomy support while in other cases fostered autonomy support. In response to negative opinions of the curriculum, parents engaged in imposing strategy which may hinder autonomy. The EM curriculum also presented a unique opportunity for strategy choice if the parent did not require their child to use the methods that they taught them. Therefore, parents' responses were mixed when faced with the new curriculum which has implications for how their practices may be received as competence supportive. While learning another method can be helpful for children, requiring their method may negate all the potentially competence supportive properties.

Fostering competence support. The EM curriculum provided unique opportunities for competence support. Some parents found that they were uncomfortable with the novelty and wanted their children to use their methods. However, when parents embraced the curriculum, their children benefited. Parents were able to equip their children with a new tool to solve problems which they may not have been able to do had the curriculum been the same one they were familiar with from when they were in school. In addition the EM curriculum provided parents with the opportunity to let their children be the teachers. Fostering explanation in an unthreatening manner may have been a positive way to promote competence support as a result of the novelty of the reform-based curriculum.

EM barrier overcome. Despite the fact that some of the parents struggled with the EM curriculum, this was not a barrier that parents could not overcome. Parents ensured their own comfort with the homework by introducing their own solution strategy, which children benefited

from when they were able to sustain their own preferred methods and had choice in learning the method. As a whole, when parents relinquished control over the methods their children used to solve math problems and spent more of their effort learning to understand their children's methods, their children benefited most (Shumow, 1998). Overall, the curriculum provided a context where parents were required to adjust their involvement strategies in order to sustain a high quality of involvement; however practices that hindered autonomy or competence in response to the context lowered the quality of parents' involvement.

Urban Context. The demographics of our parent sample represented Latino and African American parents of lower socio-economic status from urban school districts participating in mathematics reform efforts, extending prior research which has focused primarily on middle class Caucasian parents (Pomerantz, et al., 2007). Previous research on parents in low SES communities suggests that parents from minority groups have limited resources which may hinder their ability to help their child with homework (Peressini, 1998); however more recent research suggests that they are highly involved and effortful in seeking the necessary resources to help their children during standards-based homework (Remillard & Jackson, 2006). The results of this dissertation support more recent findings that parents from minority groups from an urban school district are purposefully involved during homework, with every parent partaking in several forms of involvement. The manner in which parents in the study are involved may shed light on the mixed findings, since many of the practices that parents reported partaking in were not necessarily visible. For example, some of the highest quality parent involvement, as in the case of Jorge, was minimal involvement unless initiated. Therefore since urban parents are more likely to be involved at home rather than at school (Eccles & Harold, 1996), the visibility of

involvement to teachers and administrators may be low, even if parents are engaging in the highest quality involvement practices.

The results indicated that despite their level of involvement, the visibility of parents' practices varied depending on their intentions for involvement, perceptions towards involvement, and their own self-efficacy. This is in line with research from Schnee and Bose (2010) that studied minority parents in urban districts with the EM curriculum and found that parents were overwhelmingly involved in a multitude of practices that were shaped by their goals for their child's success and their perceived ability to help their child. Therefore, not all parents may have provided scaffolding or checking, other practices such as structuring, going beyond, or encouraging mathematical explanation may have been involvement practices that were not visible to teachers. This is congruent with research that suggests that minority parents within urban districts are involved in a manner that may not necessarily be recognized (Martin, 2006; Remillard & Jackson, 2006, Schnee & Bose, 2010). Overall, parents seemed to use the available resources and engaged in involvement practices that they deemed most beneficial for their children.

6.6 Limitations

The dissertation was informed by two pilot studies; therefore many of the previous limitations of those studies were addressed. For instance, this study framed the interview questions to more specifically address parent practices that facilitate basic needs. In addition, students were interviewed in order to account for their perspective and interpretation of their parents' basic needs support. Beyond reports, direct observation of parent and child interaction during homework yielded a more realistic impression of parents' practices. Finally, parent

profiles afforded the benefits of a rich analysis of the particular relationships of inhibitive and supportive practices. However, there are still several limitations that have yet to be addressed.

EM and Urban context. First, the sample in this study was solely from an urban context with ethnic minorities. I did not have a suburban or Caucasian comparison sample to investigate whether new involvement practices were unique to the sample, however the focus of SDT literature at large has been on this demographic and therefore the discussion attempts to make this contrast. Second, the students used a reform- based curriculum that is mandated by their district. Parents' practices may have also been unique to standards-based mathematics or to how parents respond to challenging or unfamiliar homework tasks more generally.

In addition, while the two teacher-approved sheets of mathematics homework tasks I assigned children helped to ensure that all students completed the same homework tasks at the same level of difficulty, these tasks were taken from the EM curriculum. This limited homework involvement to the unique context of the reform- based EM curriculum, and therefore it is not possible to disentangle the influence of parents' limited knowledge for mathematics and standards-based mathematics tasks given the overlap experienced for this sample.

Limited Data. While the original intent for this dissertation was to include more than seven parents and two home observations, the difficulty of gaining parent participation limited the available sample for this study. The parents who did agree to the home observation only agreed to a single observation, because of their schedules. Having more dyads would help increase reliability. In addition, more parent/ child dyads may help reveal practices that were not present during these observations or interviews. It is important to note though that the findings of the range of parent practices compliment the Rogat et al. (submitted manuscript) study which included 55 parents and had the similar goal of identifying parent practices during homework

that supported or inhibited children's basic needs for autonomy, competence, and relatedness. Additional observations would also help with consistency for framing the profiles of parents.

Methodology. The home observation allowed for a more natural observation of parents' practices and children's interactions during homework. Many times, children worked silently on their homework and only asked questions when they did not understand something. While the follow-up interview allowed children an opportunity to reflect on the homework, it would have been useful to include a think aloud in the two teacher-approved homework tasks. A think aloud would have allowed a deeper look into what children were focused on during homework. For example, it would have been interesting to see if children did encounter a problem with their homework, but they were able to resolve the issue on their own without seeking help. This, for instance, would have revealed that children were motivated to persist and potentially use self-regulation skills. Without asking children to think out loud during their homework or during at least one assignment, it is difficult to assess students on-task motivation.

Alternate explanations. Although the results suggest that the support of all three basic needs influenced motivation and achievement, it may be the case that the child's behaviors as previously observed by parents influenced the enactment of their practices. It is possible that the child's ability level dictated parents' involvement. It may be also that high achieving students did not need much support to succeed, therefore their parent was able to be less controlling without sacrificing necessary support. In addition, parents of low achieving children may feel more compelled to assist and therefore engage in more controlling behaviors (Natriello & Mc-Dill, 1986). While the possibility of parent practices being influenced by children's behaviors was addressed in the relatedness supportive practice of *knowing child*, it may be important to also consider how children's actions influenced parents' intentions and reasons for engaging in

certain practices. In addition, the results are limited in accounting for competence support or a boost in self-efficacy as the sole reason for low ability. Competence or self-efficacy support may not be enough to help a child whose ability is very low and therefore enhanced instructional support may be necessary beyond engaging in supportive practices. Finally, parents' actions seemed to contradict and counter practices children encountered in school. Engaging in multiple methods for solving mathematics problems may create a disconnect with the messages that teachers try to reinforce at school with the EM curriculum, which may also influence children's performance.

6.7 Future research recommendations

Future research may expand this study by addressing some of the limitations. First, parent involvement in this study was limited to mathematics. Future research might consider assessing parents' practices in another subject aside from mathematics which might evoke new homework practices or confirm the generalizability of these homework practices. Second, while this study was limited to ethnic minorities in an urban context, future research may include Caucasian or middle class parents as well in order to extend or support parents' identified involvement practices. In addition, this study was limited to the reform- based mathematics context, which many of the parents reported finding too novel or challenging. It would be interesting to observe parent involvement during homework assignments that parents felt comfortable with alongside a challenging task. This may help future research assess whether the challenge or novelty of the reform- based curriculum influenced the quality of involvement or parents' basic needs support. Moreover, children in this dissertation study reported on their own parents specific practices, future research may want to ask children directly how they view practices that other children reported as helpful, controlling, or loving. Quantitative studies may want to allow children an

opportunity to indicate or rate their perceived level of support or inhibition in response to parents' practices as well as having parents indicate a reason they are engaging in a specific practice. Finally, future research should consider whether parents' communication of their practices has implications for children's interpretations of their parents' practices as supportive or inhibitive of their basic needs.

6.8 Implications

The results of this dissertation indicate the importance of providing competence support during homework indicating that competence support may be more directly related to enhancing achievement. This suggests implications for SDT which has largely focused on autonomy as a primary need (Ryan & Deci, 2000). It may be that autonomy support is essential for internalizing practices as supportive rather than inhibitive, but autonomy support alone without competence support may not be enough to enhance achievement. SDT literature suggests the opposite, indicating that competence support needs to be autonomy supportive in order to benefit children (Deci & Ryan, 1985). SDT research generally highlights a specific basic need, however the interplay of autonomy, competence and relatedness has implications for the level of basic needs satisfaction.

This suggests that it is critical for parents to provide instructional support when children request assistance despite their own perceptions of their role as parents. The results also suggest that despite parents' supportive practices, inhibiting practices may have overshadowed those supportive practices. This may also have implications for SDT, which in the past has only highlighted the importance of controlling environments. In addition, SDT has not considered the role of parents' reasons and intentions for engaging in certain practices which may influence the quality of parents' practices. The mismatch between parents' intentions when engaging in a

certain practice and children's perceptions of their parents' practices as supportive or inhibitive suggests that the communication of parents' intentions has implications for SDT.

The findings of this study also highlight that children's motivation may account for mixed achievement results with parent involvement, which may have implications for the parent involvement literature. Parents' basic needs supportive practices promoted increased motivation which seemed to be associated with higher achievement. This suggests that it is important for parents to foster children's motivation as means for promoting academic achievement while helping with homework.

The standards-based curriculum seemed to introduce a level of novelty that presented challenge for some of the parents in ways that shaped their selection and enactment, and ultimately the quality of their involvement. This suggests that it is vital to address parents' understanding and familiarity of the mathematics content and the curriculum. Mathematics reform does not take into account parents expectations about how the mathematics homework might look or their thought on the difficulty that arises from this discrepancy between parents' and children's views on how mathematics looks (Schnee & Bose, 2010). Curriculum developers and researchers may benefit from this feedback from parents to better understand parents' concerns and to inform materials revision. It is also important for administrators and teachers to recognize parents' potential difficulty with the curriculum. They may benefit from introducing standards-based curricula to parents through workshops that attempt to bridge the methods presented in the curriculum with traditional strategies that parents are more comfortable using.

Parents' needs supportive practices were associated with increased motivation and achievement while their inhibitive practices were associated with decreased motivation and low achievement. As a result, it is therefore important for parents to learn what children find to be

supportive or inhibitive of their basic needs. Parent involvement interventions or workshops may help parents navigate involvement during homework (Fishel & Ramirez, 2005). These interventions would benefit from incorporating the results of this dissertation into their materials as a potential means to promote higher quality parent involvement practices during homework.

6.9 Conclusions

In conclusion, the highest quality parent involvement was evidenced through the complimentary support of children's autonomy, competence and relatedness. Autonomy support may be essential for internalizing practices as supportive rather than inhibitive, but autonomy support alone without competence support may not be enough to enhance achievement. Parent profiles suggested that when parents both supported and inhibited basic needs, the inhibiting practices overshadowed supportive practices, which seemed to influence the quality of parents' involvement, because children sought to support that need in ways that were often detrimental in an attempt to compensate for the missing need. Parents' reasons for engaging in certain practices were informed by their desire to promote responsibility, to foster independent problem solving, and as a product of some level of difficulty with the EM curriculum. Children's interpretations of a practice as unresponsive to their requests or inconsiderate of their opinions mismatched parents' reported intentions for promoting structure or responsibility. Parents' reasons and intent for engaging in a certain practice informed the selection and subsequent quality of their practices as facilitative and inhibitive of their children's needs. Even though the EM curriculum was challenging for some parents, they maintained support in ways that aligned with their own goals for their children's success. Future research should consider parents' communication of their intentions and its implications for both quality of enactment as well as children's interpretations of their parents' practices as supportive or inhibitive of their basic needs.

Appendix A: Examples of Everyday Math problem Solving Strategies

Partial Sums Method (Addition)

The Partial Sums method (the Everyday Math focus algorithm for addition) is a two-stage process. In the first stage one looks at each column (working left to right) and adds up the place-values represented by the digits in that column. In the second stage those partial sums are added together. In the first example at right the process is applied to $148 + 67 + 266$. The Everyday Mathematics student reference does not recommend a specific algorithm for the addition problem in the second stage.

Frequently the second stage problem will be "easy" in that it can be done one column at a time without any carries, as is the case in the first example. Perhaps the pupil is expected to iterate the Partial Sums method in cases where the second stage addition problem involves carrying.

148	678
+ 67	+ 67
+ 266	+ 266
---	---
-> 300	-> 800
+ 160	+ 190
+ 21	+ 21
---	---
481	-> 900
	+ 110
	+ 1

	-> etc

The reader may want to explore the Partial Sums algorithm in a case where the second stage and even the logical third stage involve carrying. Try $148 + 855$ or, for an example that is a bit harder for mental arithmetic, see the second problem at right, $678 + 67 + 266$. The mathematically inclined reader will note that the Partial Sums method (iterated so long as carrying is required) terminates, because every application of the basic step will reduce, from the right, the range of columns for which carrying is required.

Trade First (Subtraction)

Closest to the traditional standard is a method that Everyday Mathematics calls "trade first". It is the Everyday Math focus algorithm for subtraction. It is a two stage process, first working right to left to do all the borrowing (recording the intermediate results above the top number) and then a second pass, in any order, doing the subtractions. The intermediate results are two-digit numbers, so one needs to use wide columns, and it is recommended to separate the columns with clear vertical lines. In the example at right, $325 - 58$, we first recognize that the ones column needs borrowing, so we replace $2*10+5$ by $1*10+15$. Then we recognize that the tens column also needs borrowing, so we replace $3*100+1*10$ by $2*100+11*10$. Then we do the subtraction in each column.

2		11	
		±	15
3		2	5
-		5	8
--		--	--
2		6	

Lattice Method (Multiplication)

The lattice method employs a grid of squares. One factor is written along the top, left to right, and the other factor is written along the right edge, top to bottom. In the example at right the factors are 83 and 27. Each square of the grid defined by the two factors is divided by a diagonal. The digits of the factors are multiplied pairwise and the two-digit result written down in the corresponding square in the manner shown. The result of the multiplication is then obtained by addition down the diagonals. The reference book suggests to use here the "fast method" for addition, working right to left and writing the carries in an appropriate box. In the example at right I used instead the column addition method of Everyday Mathematics, although I don't know if the Everyday Math teachers' guide would approve of that. In any case, the reader can as well visualize fast addition down the diagonals after the products have been filled in. I'm a bit puzzled by Everyday Math's preference for the use of fast addition here, since it is not the preferred method in Everyday Mathematics in the cleaner context of adding up a set of numbers written above one another.

$$\begin{array}{r}
 \begin{array}{c}
 8 \quad 3 \\
 +-----+ \\
 | 1 \ / \ 0 \ / | \\
 | \ / \ | \ / \ | \quad 2 \\
 1 \ | \ / \ 6 \ | \ / \ 6 \ | \\
 +-----+ \\
 | 5 \ / \ 2 \ / | \\
 | \ / \ | \ / \ | \quad 7 \\
 11 \ | \ / \ 6 \ | \ / \ 1 \ | \\
 +-----+ \\
 14 \quad 1
 \end{array} \\
 \\
 \begin{array}{r}
 1, 11, 14, 1 \\
 \rightarrow 1, 12, 4, 1 \\
 \rightarrow 2, 2, 4, 1 \\
 = 2241
 \end{array}
 \end{array}$$

Partial Quotients Method (Division)

The Partial Quotients Method, the Everyday Mathematics focus algorithm for division, might be described as successive approximation. It is suggested that a pupil will find it helpful to prepare first a table of some easy multiples of the divisor; say twice and five times the divisor. Then we work up towards the answer from below. In the example at right, 1220 divided by 16, we may have made a note first that $2 \times 16 = 32$ and $5 \times 16 = 80$. Then we work up towards 1220. $50 \times 16 = 800$ subtract from 1220, leaves 420; $20 \times 16 = 320$; etc..

$$\begin{array}{r}
 \begin{array}{r}
 \text{-----} \\
 16 \) \ 1220 \\
 \underline{- \ 800} \\
 420 \\
 \underline{- \ 320} \\
 100 \\
 \underline{- \ 80} \\
 20 \\
 \underline{- \ 16} \\
 4
 \end{array}
 \begin{array}{l}
 | \\
 | \\
 | \\
 | \\
 | \\
 | \\
 | \\
 | \\
 | \\
 |
 \end{array}
 \begin{array}{l}
 \\
 50 \\
 \\
 20 \\
 \\
 5 \\
 \\
 1 \\
 \\
 76
 \end{array}
 \end{array}$$

ans: 76 R4

Copied from: Braams, B. (2003, Feb) Everyday Mathematics (Chicago Math) Basic Algorithms. *New York City HOLD*. Retrieved 19 November, 2013, <http://nychold.com/em-arith.html>.

Appendix B: Teacher Interview

1. How long have you been teaching?
 - a. What do you currently teach?
 - b. Which grades?
 - c. How long have you been teaching in this school?
 - d. Other schools?
 - I. If the teacher has taught in other schools, ask him/her to describe the differences between the schools.

2. What kind of teacher preparation did you have? (*four-year college, certification after undergrad, alternative certification, etc.*)

3. What are your goals for your students' mathematics learning this year?

Homework practices

4. Does you have a policy about giving math homework in particular?
 - a. If so, what is it?
 - b. How is that policy enforced?
 - c. (If the school has policies) How are these policies communicated to parents?
5. In general, how do you feel about giving homework?
6. What are your purposes for giving homework?
7. Where do you think your ideas about homework come from?

(*Probe about things like the teacher's own experiences in school, teacher preparation programs, other teachers in the school, etc.*)

 - a. Was the use of homework addressed in your teacher preparation?

(*If so, in what ways?*)
 - b. Have your ideas/practices with regard to homework changed over time?

(*If so, how have they changed? Why do you think they've changed?*)
8. Are there things you think your students get out of homework that you haven't already mentioned?
9. How long do you think math homework should take when you give it (at the grade level you teach)?

Parent involvement

10. What do you envision as the ideal types of parent involvement in your classroom?
11. How are parents involved in your classroom?
12. What do you envision as ideal ways parents can support their children's learning outside of school?
13. How does that fit with what you think actually happens with your students?

(*Probe to find out how the teacher knows.*)
14. What do you think the roles of the parent should be with regard to math homework?
15. From your observations of your current class, what kinds of roles do parents actually play with regard to their children's math homework?

(*Probe to find out how the teacher knows. Are there other roles that some parents play? How do you know? How do you feel about the various roles that parents play?*)
16. Aside from parents, are there other people who are involved in your students' math homework?
 - a. If so, in what ways and from whom do they get help?

(*Tutoring, after-school program, siblings, etc.?*)

17. How many of your students do you think receive help with their homework?
- a. How do you know that your students got help with their math homework?
 - b. When students get help, how do you feel? Is it OK with you?
 - c. Do you encourage your students to get help with their math homework?
(*Why or why not? How do you encourage your students to get help?*)
 - d. Are there circumstances where you'd want someone at home to help?
(*If so, what might those circumstances be?*)
 - e. Are there circumstances where you would prefer that someone *not* help their child with homework?
(*If so, what might those circumstances be?*)

Appendix C: Observation Template

Date:

Time of observation:

Student Name:

Parent Name:

Teacher name:

Grade:

Number of people in the room while student is doing homework:

Where student is doing homework

1. *Narrative description.* In a narrative, describe the what happens while child is doing homework (1-1/2 pages). Include homework topic, where child is, where the parent is, how often the parent help, who initiates the help, why the parent helps, how well the parent seems to help, and how the child seems after the help. In order list the major actions that take place.

2. *Homework.* Describe the homework.

- Is it Everyday Math homework?
- How much homework is it? (e.g., one sheet, three pages)
- How long does the homework take to be completed

3. *Parent presence.* Describe what the parent is doing while the child is doing their homework and how often, when, and how they help.

- Detail the level of assistance the parent provides (e.g., help with reading directions, remembering a math fact, or procedural assistance)
- Who initiates help?
- Does the parent modify the question in any way, making it easier or more difficult?
- Does the parent reward or punish the child in any manner during homework?
- Does the parent teach the child a new method to solving the problem?
- How does the parent respond to the child's response to their help?

4. *Student.* Describe how the student responds when they receive assistance from their parent in any manner and how they behave while doing homework.

- How does the child respond to assistance (e.g., resistant or welcoming)?
- How long after being stuck does a student ask for assistance?
- Does anyone else help the student and does the student ask anyone else for help?

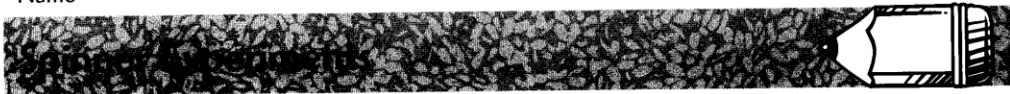
5. *Other.* Is there anything from your observation that pertains to the study that may be worth noting?

Appendix D: Homework Tasks

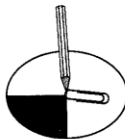
Name _____

Date _____

Time _____

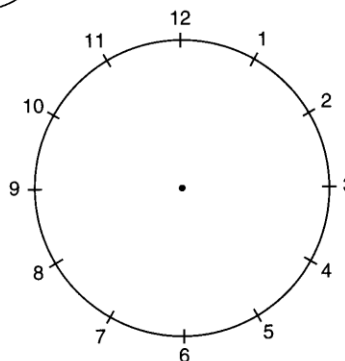


You can make a spinner by dividing a circle into different-color parts and holding a large paper clip in place with the point of a pencil.



1. Divide the spinner at the right into 3 parts. Color the parts red, blue, and green so that the paper clip has

- a $\frac{1}{3}$ chance of landing on red;
- a $\frac{1}{2}$ chance of landing on blue; and
- a $\frac{1}{6}$ chance of landing on green.



2. Suppose you spun the paper clip 36 times. About how many times would you expect it to land on ...

a. red? _____ b. blue? _____ c. green? _____

3. Spin a paper clip on your spinner 36 times. Tally the results in the table.

Red	
Blue	
Green	

Did you get the results you expected? _____

4. Suppose you spun the paper clip 90 times. About how many times would you expect it to land on ...

a. red? _____ b. blue? _____ c. green? _____

5. Spin a paper clip on your spinner 90 times. Tally the results in the table.

Red	
Blue	
Green	

Did you get the results you expected? _____

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Name _____

Date _____

Time _____



Solve each problem.

1. Lucas was comparing prices on a pair of mini-speakers. At one store, the pair of speakers cost \$19.95. At a second store, the same speakers cost \$24.70. At a third store, they cost \$18.50. If he buys the speakers at the lowest price, how much will he save over the highest price?

a. List the numbers needed to solve the problem. _____

b. Describe what you want to find. _____

c. Open sentence: _____

d. Solution: _____ e. Answer: _____

2. Lucas earned \$45.50 babysitting. Could he buy both the lowest-priced speakers and a CD costing \$12.99? _____

Describe what you did to solve the problem. _____

3. Lucas decided to buy only the lowest-priced speakers. His brother Max wanted to pay half of the cost so that he could share the speakers. Lucas agreed. How much money did Lucas have left after paying for half of a set of speakers?

a. List the numbers needed to solve the problem. _____

b. Describe what you want to find. _____

c. Open sentence: _____

d. Solution: _____ e. Answer: _____

4. On the back of this page, write a number story of your own using the information on this page. Then solve the problem.

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Appendix E: Parent Interview

Child's Homework

Now I would like to ask some questions about your child's homework, especially math homework.

Typical Math Homework Practices

1. How typical was the math homework we observed your child doing today?
 - a. How do you feel about the math homework your child is assigned?
How often does your child receive math homework?
2. How do you think the teacher wants parents to be involved with math homework?
3. Do you know if the school provides any opportunities for children to get help with math homework? (*How does that work? Does your child participate? Why or why not?*)

Homework Routines

4. How typical was your homework routine today?
 - a. How is this routine established/maintained?
5. Where does your child usually complete homework? Other places?
6. Where are you when your child is working on hw, what are you doing during your child's hw? – to assess monitoring
 - a. Do you wait for them to ask for help or do you usually just provide help? Why?
7. How often does your child need/suggest that they need help with homework? (each day, once a week, several problems)
 - a. How do you respond to a question or needing help?
8. Do you help or encourage your child to do homework on their own? How do you do this?
9. Do you check homework or encourage your child to check it over on their own? Why? Tell me about that.
 - a. Why do you check hw? For completion, accuracy, quality of responses?
10. What do you think of this statement, "Students should complete homework on their own without help?" Why do you feel that way?
11. How do you respond (to this checking) when your child has completed their homework? Has all accurate responses?

12. If your child is productively working but is using a math strategy that is different than how you would solve the problem, do you help them learn your strategy or allow them to continue using their strategy (as long as it leads to an accurate answer)?

13. Have you ever helped or encouraged your child to finish homework faster?

Hitting a Bump in the Road

14. What happens when your child gets stuck on a problem in his/her math homework?

(Who is asked to help? Does s/he just not finish it?) What do you do?

15. Are there times when you teach your child methods for solving the problems? Explain.

Are these methods sometimes different from what they learned in class?

a. What happens after you teach them the method?

16. How comfortable do you feel helping your child with his or her math homework?

a. Why do you feel that way?

Motivational Support

17. Does your child need encouragement to work on homework or to get started on homework?

How do you get your child started on homework?

18. If your child does not do their homework, does not follow the routine, or has difficulty getting started, what do you do? (e.g., punishments?)

19. Has your child ever tried to quit doing their homework in the middle without finishing, because of frustration? What happened? What did you do in response?

20. Do you use any strategies for helping your child feel like they can do the homework or the math?

21. Do you use any strategies to help your child see how math is interesting? Or that they can use it in real life?

22. How would you describe the mood in the house during homework time?

23. Is homework time ever stressful? When? Why? How do you overcome this?

Personal History

24. How do you feel about math?

25. Do you find yourself using math in your daily life? (Can you give me an example)

26. What are your memories of your experiences learning math in school? Are they mostly good or bad memories?

a. What was the last math class you took?

27. What do you think of the Everyday Math curriculum (if not applicable, ask about the math homework in general)?
28. Have there been times when ***you*** don't understand the directions or assignments?
- a. If yes, what did you do?
 - b. Did you approach the school or teacher about it? (*If yes what happened?*)

Appendix F: Child Interview

1. Is this what usually happens when you do homework? What was different?
(Identify specific practices that took place and ask about the child to describe what happened). *Autonomy*
2. Are there times when you feel like you get stuck on your math homework? What do you do when that happens? *Competence*
3. How does your parent usually help you? Does anyone else ever help? *Competence*
4. Are there times when you receive help during homework when you really could be doing it on by yourself? Why does this happen? Did this happen today? *Autonomy*
5. What do you think about this quote? “Ms. Rogers helps her child Mary with her homework even before she asks for help.” *Autonomy*
 - a. Do you think that happens here? How?
6. Do you choose when and where to do your homework? Would you ever want to do your homework somewhere else or at another time? *Autonomy*
7. Do you ever solve your math problems in different way from how your parent solved it? What happened? How did you solve it in the end? *Competence, Autonomy*
8. Has there ever been a time when you had to teach your parent how to solve a problem during your math homework? Can you give me an example *Competence*
9. (If parent said they go beyond homework and provide workbooks or extra materials) What do you think about the extra activities your parent provides? *Competence*
10. Is homework a time when you feel you can spend special time with your parent or are there other times when that happens? When? Why? *Relatedness*
11. How do you feel when doing math homework: excited, frustrated, happy, worried? Why? *Relatedness, Competence, Affect*
12. Have you ever wanted to quit doing your math homework before you finished? What happened? What did your parent do in response? *Relatedness, Competence, Autonomy*
13. Why do you try to do well on your math homework? *Competence, Mastery*
14. Do you get rewards for doing your homework? Did you ever get in trouble for not doing your homework at all, nor doing it right, or not doing it quickly enough? What happened? *Relatedness, Competence, Autonomy*

Motivation for math

1. Do you like math class? *Competence, Interest, Intrinsic motivation*
2. If you had to list your most to least favorite class, where is math? *Competence, Interest, Intrinsic motivation*
3. Do you feel like you can do your math work? *Competence, Self- efficacy*
4. Do you do math activities outside of school? *Competence, Interest, Intrinsic motivation, Value*

Appendix G: Codebook

Note: In instances where the interviewee is referencing something that the other person might say or impresses upon them, the item will be coded appropriately but with an additional letter to indicate that it is in reference to the opposite person not being interviewed at that time (If a parent indicates that something is a belief of the child, I will code it appropriately but put a c for child. If a child indicates that something is a belief of the parent, I will code it appropriately but put a p for parent).

Note: After coding is concluded for that interview, I will write a summary statement after coding the interview as a whole in order to note salient features.

Code	Definition	Example
Autonomy support	<p>Practices that foster choice and a sense of control during homework.</p> <ul style="list-style-type: none"> • Having choice in when, where, or how homework is done • Encouraging independent problem solving • Allowing the child to use their own strategy • Waiting for the child to initiate help • Not giving the answers; keeping the multiple routes to the solution open (i.e., not telling the one solution path) • Incorporating the child's suggestion • Active listening and being responsive to the child's perspective or content idea • Providing silent nods or cues to indicate feedback, so as not to provide unsolicited feedback and allow child to continue working independently • Parent sitting on hands so as to control themselves from over directing the child 	<p>Um, he does his homework on the bus if there's a day when he knows he wants some extra time outside or something, so I don't think that that's his preferred place, but if he knows he's got time constraints later, and he doesn't want to miss his chance to play basketball"- Parent Stevens D</p>
Autonomy inhibiting	<p>Practices that are characterized by actions that are controlling or inhibit students sense of control or choice.</p> <ul style="list-style-type: none"> • Controlling when how or where the child did homework • Imposing/requiring solution strategy • Surveillance of the child's hw behavior, completion and work • Elicit compliance • Closing off dialogue • Parent dominates talk; telling the (one) answer • Giving unsolicited answer • Ignoring student contributions, cutting off the student (i.e., not being responsive) • Taking over, controlling reading • Rushing the child to work faster or think faster • Taking away child's pen or pencil 	<p>"Straight after school, we try to do it. Straight after school, we sit at the kitchen table and we'll do homework"- Parent Irlandez</p>
Competence support	<p>Actions that support understanding of how to do the homework or attempts to help students better understand an assignment</p> <ul style="list-style-type: none"> • Introducing new and alternative solution strategies, especially in response to child's questions or help-seeking; introducing another way to deepen 	<p>"I always give her a demonstration or tell her another way. I have to, if I don't she'll never know."- Parent Washington</p>

	<p>understanding</p> <ul style="list-style-type: none"> • Provision of resources • Evoking prior knowledge • Giving examples and application • Checking work⁴ • Providing feedback • Questioning students' selected solution strategy • Asking the student for explanations • Learning from the students employed strategy • Modifying or scaffolding the assignment to be more manageable. • Communicating belief that child is capable of making progress and achieving; high expectations • Engaging in mathematical conversation about hw and other relevant topics, with benefits for deepening understanding 	
Competence inhibiting	<p>Practices that make the student feel incapable of doing or understanding an assignment; practices not supportive of understanding.</p> <ul style="list-style-type: none"> • Imposing help in a manner that makes student feel as if they are not capable of doing it on their own • Inhibiting opportunities for child to explain (e.g., finding other resources rather than allow the child the opportunity to explain) • Overly complicating a homework problem when trying to explain a solution strategy (vague or unclear direction) • Not trusting the child to explain or solve (when parent has difficulty) • Cutting the conversation short; not engaging in mathematical dialogue with child • Not responding to child's questions • Brief or absent feedback (during checking work) • Rushing the child to work faster or think faster⁵ 	<p>"She don't like coming to me for help, she want to do it all on her own. I told her, you can't do it on your own. You always need help in some area"- Parent Sanderson</p>
Relatedness support	<p>Feeling of closeness and bonding that stems from working together/near during homework.</p> <ul style="list-style-type: none"> • Parent stays near the child, doing something else, while the child does their homework (without hovering and child seems to accept it) • Expressing their feelings about enjoying the time spent together during homework. • Active listening • Arm around child; touching • Demonstrating empathy when child experiences challenge • Caring • Experiencing enjoyment with one another around the math 	<p>"So we have bonding time. We'll- I'll sit down and ask him, how was school, what happened? You know, and then they'll ask me how was your day mom? What happened with you? And then we'll sit down, we'll read"- Parent Sanderson.</p>

⁴ Checking work is conceptualized as controlling by Grolnick et al., (2002) and Pomerantz & Eaton (2001) if unsolicited by child but as mastery- oriented and competence supportive by Pomerantz , Ng, & Wang (2006). We conceptualize checking work in a manner similar to Pomerantz.

⁵ Conceptualized by Grolnick et al., (2007) as autonomy inhibitive.

	<ul style="list-style-type: none"> • Asking about the child's day at school 	
Relatedness inhibiting	<p>Practices characterized by actions that make the student feel a lack of closeness or neglect.</p> <ul style="list-style-type: none"> • Impatience; not having time or patience to assist with homework when they ask for help • Frustrated or irritated while working with the child • Withdrawing love or attention when the child does not follow the parent's rules or instructions. • Not available or not being proximal • Uncaring or unresponsive to child's experienced challenge 	"We often argue during homework"- hypothetical
Positive Affect	<p>Interactions during homework that seem to be pleasant, patient, and happy.</p> <ul style="list-style-type: none"> • Indicating fun; laughing, • Happiness; joy • Excited • Calm; Smiling, content 	"I really enjoy working with her while she is doing her working. We both make it fun"- hypothetical
Negative affect	<p>Interactions during homework that seem to be frustrated, impatient, and irritated.</p> <ul style="list-style-type: none"> • Frowning, crying, sadness, upset • Frustration; aggression • Bored or dull • Tired 	"I can't be here all day working on the same problem with you, because we both get frustrated and you stop trying."- hypothetical.
Self- Efficacy	<p>Indications or interactions that suggest capability in understanding of how to do the homework or the math</p> <ul style="list-style-type: none"> • Communicating belief that they are (or are not) capable of making progress and achieving; high (or low) expectations of self • Suggests that they can do even the hardest math problem/ math homework • Indicating feelings of being good (or bad) at math or smart in math/ math homework • Engaging in mathematical conversation about hw and other relevant topics, suggesting a deep understanding • Questioning parents' selected solution strategy • Offering explanation to parent • Feeling confident in teaching others 	"I could easily explain how I got this answer"- hypothetical
Intrinsic motivation	<p>The communicated focus is on the task, interest, or personal satisfaction</p> <ul style="list-style-type: none"> • Indicating what is interesting about a math task/mathematics • Indicating that it is interesting that a problem can be solved with multiple solution methods (parent and child's different method) • Encouraging mathematical curiosity • Enjoyment for its own sake • Seek moderate challenge; puzzles • Evidence of going beyond the task requirements 	"Math homework is really interesting and I like working on a problem that takes a while to figure out."- hypothetical
Extrinsic motivation	<p>The communicated focus is on external rewards.</p> <ul style="list-style-type: none"> • Suggesting a reward like stickers or candy • Aim for points administered by the teacher or 	"He wants to do well on his homework so he can get a sticker for that week."-

	<p>recognition</p> <ul style="list-style-type: none"> • Focus on attaining high grades for an external reward/as an end such as praise, recognition, or money 	hypothetical
Amotivation	<p>Disengagement during hw</p> <ul style="list-style-type: none"> • Voicing not wanting to do homework • Off-task behavior • Incomplete work 	“I don’t even care to do my homework.” - hypothetical
Completion goal	<p>Being intent on just getting the work done, completing the task</p> <ul style="list-style-type: none"> • Focus on just getting homework done (and not on understanding or learning from the task) • Mentions looking forward to what they will do after homework; playtime, recreation, tv. • Rushing the child to work faster⁶ 	“I only have to worry about getting my homework done.” - hypothetical
Mastery goal, process focus	<p>Focusing on the process involved in learning and understanding the task; sustaining a task focus.</p> <ul style="list-style-type: none"> • Acknowledging that mistakes are a part of learning • Highlighting the importance of effort, hard work, and persistence in learning • Highlight progress, developing skills, deepening understanding • Creating an environment that fosters comprehension and learning • Wanting to develop improved math skills • Parent encourages challenge • Focus on task (vs. completion, grade, anxiety); on learning from the task, not just finishing it • Emphasis on enjoyment in the process of learning the math 	<p>“You should make sure you understand every problem before handing in your homework.” – hypothetical</p> <p>I get excited about learning something that really makes me think hard.”- (Gurland and Grolnick, 2005)</p>
Performance goal. Person focus (we differentiate performance-approach and performance-avoid)	<p>Focusing on demonstrating competence, often in relation to others, to the teacher, or the parent. In this case, the focus is on high achievement.</p> <ul style="list-style-type: none"> • Proving to parent high competence through high performance or outcome • Talking about how easy/simple the work is; how fast they are getting the work done with minimal effort • Emphasizing showing teacher the child is smart • Emphasis on grades in order to demonstrate intelligence/smart • Emphasis on grades in an attempt to obtain praise suggesting intelligence (you are smart). • Focus on relative comparison to other students or peers (or other children) • Parent concern with innate ability in solving the problems • Praising as “smart” or suggesting low ability “stupid” <p>Performance avoidance Focus on avoiding the demonstration of incompetence, often in relation to others.</p>	<p>“Doing well on your homework shows your teacher that you are smart.”- hypothetical</p> <p>I get frustrated when the teacher or books explain things more than I need to know for the test).”- (Gurland and Grolnick, 2005)</p>

⁶ Conceptualized by Grolnick et al., (2007) as autonomy inhibitive.

	<ul style="list-style-type: none"> • Wanting to avoid making or acknowledge mistakes • Avoiding challenge • Not wanting to appear stupid • Parent avoids advanced feedback when helping • Avoiding assignments that may generate a low grade in order to avoid criticism about intelligence or feelings of unintelligence. 	
Maladaptive Attribution - Stability/uncontrollable	<p>Success or failure/difficulty is attributed to unchanging features like intelligence/smart.</p> <ul style="list-style-type: none"> • Difficulty with homework cannot be controlled and cannot be helped • Indicating that they will never understand the math or never be good at it. • Avoiding advanced feedback when helping so as not to overwhelm child who may be perceived as incapable- <i>there must be evidence of why from the parent</i> • Empathy and wanting to help because perceive child as not smart • Indicating that this (math) is just too difficult because they don't expect child will be able to do well • Suggesting I don't have to work hard on homework because I just 'get math' and I'm smart. 	<p>"She just really doesn't understand math very well, so I start very basic with her."- hypothetical</p> <p>"I will never get this, no matter what I try."</p>
Instability/controllable	<p>Success or difficulty is attributed to malleable features such as a lack of effort/high effort or the employed strategy</p> <ul style="list-style-type: none"> • Difficulty with homework is controllable and can improve, seek new strategies; • Explain task failure/success due to invested effort, hard work and persistence at math • Encouraging more challenge when helping in order to demonstrate that hard work, effort, and persistence can alleviate difficulty. • Indicating that child is not trying hard enough or child admitting to a lack of effort • Encouraging or identifying progress and that grades can improve over time or that they have improved over time • Pointing to specific mistakes that have been made in the past that can be or have been improved 	<p>"He really doesn't put much effort into his homework, otherwise he would do much better on it."- hypothetical</p>
Value	<p>The homework problems and mathematics content is valued and identified as important.</p> <ul style="list-style-type: none"> • Child values homework as important for practicing skills • Math content is viewed as important • Indicates real world relevance, examples and application • Identifies importance for future goals (next year in school; another unit; middle school; job...) 	<p>"People use math every day, so I know it is important to understand it."- hypothetical</p>
Self-Regulation	<p>Deliberate planning, monitoring, and evaluation of behavioral, cognitive, and emotional processes during homework as a product of the non-academic influences</p>	<p>"I taught her how to manage her time, now it's up to her to decide when it is best for her</p>

	<p>during and/or after doing homework together</p> <ul style="list-style-type: none"> • Finding an optimal environment for homework before homework starts (ie., table with enough space). • Finding a place free from distraction (ie., in a quiet room or away from external noise). • Restructuring or reacting to physical and psychological environment in response to a new distraction (ie., siblings come into the room or tv is on) • Structuring a time or routine for homework⁷ • Encouraging students to plan, organize, or strategize homework on their own • Encouraging child to check work • Encouraging modification of a strategy in the face of difficulty • Managing time for homework so that there is enough time to do homework and other planned activities. • Managing time when there is multiple homework assignments and a deadline (ie., due tomorrow) • Managing order of how to do homework problems or when to skip a problem or save it for the end • Transferring the responsibility on child to have them independently manage their concentration level or emotion during homework (ie., keep attention on homework). • Redirecting emotional response that may occur during homework like frustration, or a broken pencil, or a spill. • Stopping distracting conversation not about homework • Keeping up motivation level by saying motivating things like “you can do this” 	<p>to do her homework.”- Hypothetical</p> <p>"He has a desk in his room, but he likes to work near me; and there is really no place for me to help him there.”- Xu & Corno, 1998</p> <p>"Nothing to worry about. Just put some tape over it and stop leaning on it. All right. Let's go.”- Xu & Corno, 1998</p>
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⁷ Conceptualized as potentially autonomy inhibitive or supportive depending on the level of control that is perceived by the child Grolnick & Ryan (1989)

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