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Measuring Perceptions of Social Potential: The Development of an Instrument Assessing
Children's Perceived Potential for Improving Social Skills

by

Michelle Charpentier Manseau

A dissertation submitted in partial satisfaction

of the requirements for the degree of

Doctor of Philosophy

in

Education

in the

Graduate Division of the

University of California, Berkeley

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Professor Susan Stone

Spring 2010

Measuring Perceptions of Social Potential: The Development of an Instrument Assessing
Children's Perceived Potential for Improving Social Skills

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By Michelle Charpentier Manseau

Dedication

For my mom who would have kept a copy of this in her office. I'll always cherish our Alisan and Cheeseboard Fridays when I worked at the dining room table where two dissertations were born.

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Abstract

Measuring Perceptions of Social Potential: The Development of an Instrument Assessing
Children's Perceived Potential for Improving Social Skills

by

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Teachers, parents, and school administrators have become interested in implementing programs to teach children social interaction skills for developing friendships. These social skills training programs typically teach rote skills without addressing a fundamental aspect of social behavior, children's beliefs about their potential for increasing social skillfulness. Beliefs about one's ability to increase competence have been shown to have significant effects on performance and yet these beliefs are rarely considered or incorporated into social skills programs. This dissertation includes two scale development studies conducted to bring the field closer to effective measurement of children's beliefs in this domain. Such a measure will allow researchers to study how interventions shape children's beliefs, ultimately leading to interventions that better remediate social problem-solving weaknesses.

Results of exploratory factor analyses supported a one-factor structure with two composites instead of a five-factor structure. Item-level analyses—including frequencies, *p* values, and point-biserial correlations—were indicative of some potential weaknesses in the items, including poor item discrimination and some non-significant item-total correlations. Qualitative item-level analyses suggested that the items were not able to elicit the range of responses that was expected; overall students tended to endorse statements consistent with the idea that all children have the potential to improve friendship skills through effort and practice. Test-retest and split-half reliability measures indicated that the items were eliciting fairly reliable responses. Validity evidence supported the assertion that items were eliciting information about the purported constructs.

CHAPTER 1

Measuring perceptions of Social Potential: The Development of an Instrument Assessing Children's Perceived Potential for Improving Social Skills

In schools children participate in many different interventions. The efficacy of some of these interventions is measured and monitored, for example with standardized assessments to track student progress over time. Other interventions are less-well evaluated. This dissertation includes two scale development studies conducted to bring the field closer to effective measurement of one aspect of social skills interventions.

In schools many children participate in group and individual counseling to improve their ability to interact with peers in ways that will enhance their friendships. These interventions are generally referred to as *social skills* interventions, implying that the sole focus is the identification and practice of appropriate social behaviors. However, in addition to learning to employ certain behaviors, children's abilities to engage in social problem-solving are typically addressed as well. These social skills interventions frequently occur in the context of Special Education where areas of weakness—whether academic, social, or psychological—are identified and goals are created to guide remediation services.

Much research has been conducted to demonstrate how motivational orientations, including beliefs about capabilities and the goals people hold during tasks, can affect the quality of effort, outcomes, and persistence. A review of the literature suggests that while many researchers have studied how motivation theories can be incorporated into academic interventions (e.g., Cleary, 2009; Morisano, Hirsh, Peterson, Pihl, & Shore, 2010), far fewer studies can be found addressing motivation in social interventions. When educators speak to parents and students about improving academic outcomes, adaptive motivational orientations are typically thought of in terms of increasing students' sense of confidence so that students dedicate all their faculties to learning instead of being distracted by worries about their progress. Unfortunately, motivational variables are not typically given the same consideration when social skills interventions are designed and implemented for students who are not successfully developing and sustaining friendships.

Social skills interventions, and indeed all interventions in school, should incorporate features that foster the development of adaptive motivational orientations. As educators and parents have become more interested in motivational orientations, the authors of some academic programs, and an even smaller number of social skills intervention programs, have incorporated aspects of motivational theories into their programs. These programs' authors acknowledge the important effects that motivational orientations can have on outcomes and thus seek to influence children's capability beliefs as part of their interventions (e.g., Blackwell, Trzesniewski, & Dweck, 2007; Lepore, Kiely, Bempechat, & London, 1989).

Capability beliefs can affect learning in several ways (Elliott, & Dweck, 1988; Kinlaw, & Kurtz-Costes, 2003; Nicholls, 1984; Wood, & Bandura, 1989). Beliefs can dictate what kinds of learning experiences a child seeks out depending on whether a child

feels capable of taking on a challenge. Beliefs can also affect whether the child is prepared to persevere in the face of setbacks. These beliefs in turn can greatly influence whether a child progresses and learns or instead stagnates and gives up. Training students to adopt beliefs about their capabilities that will lead to seeking out challenge, to tolerating setbacks, and to working to increase ability is an important aspect of remediation programs. It continues to be difficult to determine the most effective ways to incorporate these into social skills programs however, as currently there is no way to measure students' adoption of capability beliefs. That is, at present, one social skills intervention cannot be compared to another in terms of its ability to affect capability beliefs.

The studies presented in this dissertation were conducted to begin to develop tools that would allow for comparing social skills interventions in terms of their effects on capability beliefs. The goal of the studies was to gather information about the potential utility of a new measure for estimating students' motivational orientation related to social skills. A measure of this type is an essential step that will enable researchers to create more effective evidence-based social skills interventions for use with school-aged children.

Before presenting the studies, a more exhaustive review of the motivation and social skills literature is presented. In this literature review, relevant motivation research is presented first. This is research that has been conducted to demonstrate the important effects that beliefs about capabilities and goals can have on achievement. The connection between social skills intervention and motivational theory and research is then explained. This is accomplished by reviewing social skills intervention theory and practice, especially the theory of social problem-solving. The important role motivational variables play in social thinking becomes clear once the affective and behavioral processes of social learning and problem-solving are explained. Next, existing measures of motivational variables in the social domain will be reviewed. Finally, the case will be made for the need to develop a new measure. Such a measure will be used to assess how well social skills interventions incorporate aspects of motivational theory into social problem-solving theories.

The study of a new measure of social capability beliefs is presented in the second chapter. This pilot study, which includes the development and analysis of the Measure of Children's Implicit Theories of Social Competence (MCITSC), is a first step in designing a multidimensional instrument. The design of the single-construct MCITSC was informed by theory and modified according to information provided by fifth graders who spoke with the author about the construct and about item wording. The measure was designed to be administered in a short period of time to a group of students in their classroom. The instrument was administered to a class of sixth grade students. Results were analyzed and based on these results, ideas for revisions and future directions were generated.

The third chapter is dedicated to the development and analysis of the Multidimensional Scale of Social Potential (MSSP). Like the MCITSC, The MSSP includes items that measure children's beliefs about the malleability of social abilities. Additionally, the MSSP was designed to measure children's goal orientations, the

stability of ability beliefs, and their ideas about the usefulness of certain strategies and efforts. MSSP items were created to be more linguistically simple and more construct-specific than those on the MCITSC and than items in other measures. Analyses were conducted to determine whether the MSSP results are reliable and valid.

Motivational Orientations that Affect Achievement

Theories about conceptions of ability and their effects on performance. Some motivation theorists (e.g., Blackwell et al., 2007; Dweck & Leggett, 1988) have developed theories and conducted research to investigate how much beliefs about ability can affect performance even when controlling for actual ability. Their research suggests that when people produce behavior, have cognitions or affect, or devise goals, they do so based on their conceptions about the nature of ability, specifically, its changeability. These beliefs about how changeable their ability is have been shown to affect performance through a series of mechanisms (Kinlaw & Kurtz-Costes, 2003). Some of the theories diverge in terms of the exact mechanisms, directionality, and terms, but many are quite complementary.

Dweck's theories of intelligence model. Dweck and her colleagues elaborated on their research on ability beliefs, investigating children's theories about the nature of intelligence and putting forth a cohesive theory about how children's ideas about whether ability is changeable affects goals and, in turn, outcomes (Kinlaw & Kurtz-Costes, 2003). They suggested that people fall into two categories. In one category, ability is thought to be a fixed entity, something that is predetermined, unchangeable, and is easily compared to others. Dweck and her colleagues have called this an *entity theory* of ability. Alternatively, there are those who believe ability can be developed. They think of their ability in terms of their improvement and how much they are learning. They think about their ability as something fluid and increasable. They are said to have an *incremental* view of ability or to have a *growth-minded* orientation. In several studies, they have presented evidence for the connection between ability beliefs and performance on tasks (e.g., Blackwell et al., 2007).

The model that Dweck and her colleagues developed explained how theories of ability lead to improved outcomes regardless of actual skills. They proposed that an incremental theory of ability leads to positive effort beliefs and goals focused on learning and mastery, which in turn leads to the adoption of more positive strategies and fewer ability-based helpless attributions while performing a task. That is, beliefs that people hold are posited to drive the kinds of goals and behaviors people adopt when they are engaged in challenging tasks (Diener & Dweck, 1978; Elliott & Dweck, 1988; Goetz & Dweck, 1980).

Goal orientations that follow from ability beliefs. Dweck and colleagues (e.g., Dweck & Leggett; 1988) assert that the two different conceptions of ability people have will mediate people's behaviors by directly influencing the kinds of goals they have. Individuals' goal orientations can be of two types. The first type of goal orientation is ascribed to people who have an entity view of ability. These individuals think that the sufficiency or superiority of one's overall ability or skills can be determined. Because they believe this, they consider a performance situation as an opportunity to demonstrate this ability. They may also view it as an instance where their lack of ability might be

demonstrated. Having their ability on display in this manner allows them to judge it for themselves, to compare it to others, and to have it be judged by others. In social settings, those with an entity theory will aim to have their social ability judged favorably while avoiding the possibility of revealing any inadequacy. This can mean that they will choose to engage in easy tasks where there is no danger of encountering difficulty or failure. They may also choose to avoid tasks in order to avoid being seen as incompetent. These kinds of goals are referred to as *performance goals* (Elliott & Dweck, 1988). Nicholls (1984), working independently of Dweck and other achievement motivation researchers, described a similar effect of what he termed *ego-involved goals*.

Conversely, when the goals of people with the incremental view of ability were explored, they tended to more closely resemble the second type of goal orientation: what Dweck and her colleagues have called *learning goals* (Bempechat, London, & Dweck, 1991). Learning goals are those associated with the incremental orientation because challenging situations are viewed as opportunities for ability to grow over time through learning. Incremental theorists tend to regard mistakes as indicators that efforts should be increased. They are more concerned with improvement and increasing their skills than with how their performance measures up to that of others (Bandura, 1990; Erdley, Cain, Loomis, Dumas-Hines, & Dweck, 1997).

There are effects on cognitions, affect, and engagement in tasks depending on whether one has the goal of learning from an experience or gauging one's ability from it. Dweck and her colleagues describe how certain kinds of cognitions and affect are influenced by whether one has performance or learning goals (Diener & Dweck, 1978; Elliott & Dweck, 1988). Specifically, they suggest that when people have performance goals, they will most likely interpret the results of a performance as indicative of ability. Thus, when people perform poorly, they will attribute this to a lack of ability and will experience negative affect. Moreover, if they have revealed themselves to be lacking in ability, which is a fixed entity in their estimation, then they will engage in the helpless response of giving up (Cain & Dweck, 1995).

Although they have done so independently, many researchers including Dweck and her colleagues, have described how performance goals can moderate performance following setbacks or failures by dictating whether people even choose to engage in a task at all (e.g., Ames, 1992; Nicholls, 1984; Roedel & Schraw, 1995). Nicholls described how ego-involvement, or performance goals for Dweck and Ames, can moderate whether tasks are avoided or confronted. Those who perceive failure to be indicative of low ability, as those who are ego-involved do, will seek to avoid demonstrating low ability, by avoiding certain tasks. Covington and Omelich (1979) also described this phenomenon of task avoidance in order to protect one's self-worth, as it is closely tied to one's conception of ability. Alternatively, if performance-oriented people elect to engage in tasks, their continued efforts following failure will not likely be as effectual as those of learning-oriented people. This is because instead of initiating solution-directed behavior, performance oriented individuals expend their cognitive resources searching for causes for their failures (Diener & Dweck, 1978). These cognitions are distracting and they can impair continued efforts to succeed. Examples of interfering cognitions include worry that poor performance might provide proof of a lack

of ability. Making attributions for failure can divert the individual's attention from the task and detract from performance (Elliott & Dweck, 1988).

Those with learning goals are expected to have behavioral, affective, and cognitive responses to failures that are more conducive to achieving advanced and productive levels of performance. Unlike those with performance goal orientations, learning-oriented individuals do not exhibit helpless or defensive responses, because their failures do not carry such dire implications about their ability. Instead, for them failures merely provide feedback regarding what still needs to be learned to increase their ability. Therefore, learning oriented individuals' responses tend to involve formation of more sophisticated problem-solving strategies, sustained effort, and the maintenance of positive affect (Elliott & Dweck, 1988). They exhibit what Elliott and Dweck have described as *mastery-oriented* responses to failure and difficulties.

Empirical evidence for the effects of conceptions of ability on performance. In several studies (e.g., Elliott & Dweck; Wood & Bandura, 1989) these differences in performance were shown to be related to capability beliefs. In the Wood and Bandura study, the authors were testing their hypothesis that aspects of goals theories, theories of ability, learned helplessness, and self-efficacy interact to affect performance. Self-efficacy refers to whether people believe that they are capable of acting in ways to produce the outcomes they desire. It is the set of beliefs people have regarding their ability to control their behaviors that affects the regulation of their thoughts, their motivation, and their affective and physiological states (Bandura, 1997). The Wood and Bandura study provided empirical evidence that performance on a variety of tasks is enhanced when people's thoughts remain focused on the task rather than on self-referent cognitions that create stress and alter goal-setting. By manipulating participants' capability beliefs, it could be seen that when people operate under a conception of ability as acquirable they are better able to maintain focus on the demands of the task more readily than when they operate under a conception of ability as fixed. This is due to the self-regulatory mechanisms that govern performance—goal setting and continued use of analytic strategies—being significantly impacted by conceptions of ability. Although Wood and Bandura explained that the effects of ability beliefs are mediated by their power to influence self-efficacy, their explanation of the mechanisms and results of ability beliefs are similar to those of Dweck and her colleagues.

In light of the connections between self-efficacy and learned helplessness, McFarlane, Bellissimo, and Norman's (1995) finding that those with strong sense of efficacy tend to exert greater effort to master a task is not surprising. Those who feel efficacious believe that mastery requires effort and that skill comes with practice. On the other hand, those who perceive themselves to lack efficacy are more likely to avoid social challenge or to demonstrate little persistence in the face of failure. Perceived social inefficacy can not only reduce the effectiveness of training by inhibiting practice, but it can also lead children to behave in socially ineffective ways (Bandura, Pastorelli, Barbaranelli, & Caprara, 1999).

In short, the results of numerous research studies in achievement motivation have provided evidence for a link between goals in learning situations, between perceptions about one's competence, and about the nature of ability. Although some of this research

has focused on examining the role of goals and related affective states whereas other studies have been conducted to examine the nature of ability beliefs of children when they engage in learning activities, the results are worthy of consideration by educators as they design instructional programs. Whether a child's goals when trying a new task are to learn and improve or to prove that she is capable will determine the kinds of thoughts and feelings she will have in the face of failure or difficulty. These will in turn affect actual performance, learning, subsequent task choice, and perseverance. Because we know that for children to benefit from learning experiences they will have to try to apply what they have learned and continue to practice it even if they encounter difficulties, it will be important to limit distractions and fears. During practice opportunities, their focus should be on increasing and improving efforts rather than worrying excessively about the quality of the final product or fearing what setbacks indicate about them. It is prudent to seek to apply these findings to educational programs, in this case, programs where the education is social in nature.

Measuring Ability Beliefs

There are many studies of measures intended to estimate the types of beliefs and goals children have, with some like Wood and Bandura (1989) departing slightly from the more narrow definitions put forth by Dweck and her colleagues (Dweck & Bempechat, 1983; Dweck & Leggett, 1988). For example, Stipek and Gralinsky (1996) elected to examine related constructs such as effort beliefs in an attempt to obtain a more complete picture of how beliefs are intertwined with the learning process. This kind of multidimensional research has provided data pertaining to multiple constructs that might together, better inform our understanding of children's thought processes and beliefs than studies that examine one construct in isolation. Many different theories exist with different terminology, but the central theme is fairly constant across these theories: people have ideas about the nature of ability in different domains, which will affect the goals they have in learning situations in these domains. These beliefs and goals will in turn shape cognitions, affect, and behavior. The proposed pathways and moderators vary by theory, but the central idea seems to be akin to the notion of potential. That is, a person's potential to improve in a given domain depends on capability beliefs, goal orientations, notions about the usefulness of sustained effort as well as all the thoughts, feelings, and responses associated with these.

For many educators it is not difficult to extrapolate from the above studies in order to apply these theories to academic pursuits. However, for many, it is more difficult to conceptualize how motivational theories apply to social skill development. In order to understand how capability beliefs and beliefs about one's potential to improve skills can relate to social problem-solving and friendship development, it is useful to consider theory from the social development and social competence fields. As the complex cognitions and emotional responses involved in social problem-solving are better understood, it becomes apparent that children must stay focused on the task at hand free from distracting thoughts and emotions. Perseverance and the continued use of adaptive strategies are essential for effective social-problem solving that leads to useful social interactions.

Social Problem-Solving

Whereas some social behavioral research is aimed at identifying single social tasks that are considered essential for children to master in order to form and maintain friendships, other approaches have been focused on identifying cognitive processes that underlie behavior. Social problem-solving has been studied as a means to understand not only why and how individuals engage in discrete behaviors or omit certain behaviors, but also the cognitions and emotions that inform and result from social behaviors.

Introduction to social problem-solving. Proponents of a social problem-solving approach (e.g., Dodge, Pettit, McClaskey, Brown, & Gottman, 1986; Shure & Spivack, 1988; Yeates & Selman, 1989) criticize the study of what they consider to be discrete and isolated aspects of children's social functioning. They identified the tendency of researchers to look for the presence or absence of certain behaviors in order to explain social competence as insufficient; instead advocating an approach to defining the processes of social functioning. That is, instead of identifying single social tasks one group of children might find difficult to navigate or isolating the specific behaviors that seem socially inappropriate, it would be more useful to consider the cognitive processes that inform behavior, that is, the thinking that leads to and follows from social behaviors and interactions.

To this end, Dodge and his colleagues (e.g., Crick & Dodge, 1994; Dodge 1985; 1986) have developed models of social information processing that integrate the many facets of social interaction. The models elucidate the problem-solving processes involved in children's social interaction, including selecting and enacting behaviors, as well the modification of behaviors in response to the behaviors of others. Metacognitive processes are considered to be important throughout interaction because socially effective children must evaluate their behavior and its effects and modify their responses while engaged in conversations and play. This is as opposed to a child's entering a social situation with the intention to act out predetermined behaviors and to utter prescribed statements without regard to specific situational features and the reactions of peers. Crick and Dodge's (1994) cyclical model of social information processing also accounts for the effects of children's mental representations—including prior knowledge and beliefs—on behaviors. The complex cyclical social-problem solving model accounts for the multiple facets of interaction and bears further explanation.

Crick and Dodge's social problem-solving model. In this model, social problem-solving consists of a set of steps that occur in a cyclical manner. The cycle's progress is modified by feedback loops. Biology, personality, memory, and social knowledge are supposed to affect all aspects of the informational processing steps. As part of the cycle, peer evaluations and responses to the child's behavior are considered by the child concurrently with decision-making about and evaluation of potential behavioral responses. The encoding of cues is the first step of information processing, which via five other steps, eventually leads to the sixth and final step of behavioral enactment. Each step is worthy of description.

The cycle begins with children going through the first and second steps of social information processing: encoding and interpretation of cues, respectively. Here, it is proposed that children attend to, encode, and interpret both internal and situational cues. In attending to and encoding the features of the situation, they notice details such as how

many children are present and what the activity is. That is, they translate the visual and auditory features of the situation like conversations and positions of players into a coherent notion of what is happening. They notice where children are and how they are interacting in order to be able to interpret the situation, for instance, interpreting whether a game has just started or is in transition and whether it would be appropriate for new players to become involved. These processes are informed and influenced by memory and mental representations of social experiences, as well as by knowledge of social rules and past experiences.

The third step of the cycle is that of clarifying goals. Here, children select a goal or decide upon an optimal outcome for the situation. For example, the child might have the goal of joining the game. At Step 4, children are expected to be either pulling from memory or constructing based on current information, a potential behavioral response. This behavioral response is then evaluated in Step 5, in terms of its potential for achieving certain outcomes and likely repercussions. Finally, Step 6 consists of the enactment of a behavior, which restarts the cycle when this behavior elicits responses from peers and requires the child to encode situational cues. Along the way, feedback loops lead to the child's adjusting thoughts and actions, thus the steps do not occur in a consistent order.

A concrete example can be useful in understanding how the process could proceed. Consider a child who wants to join a group of children who are playing a game. The child's social problem-solving cycle of thought would begin with the child's encoding cues about the situation. Encoding refers to noticing the visual cues of the game and the players, noting what the children are talking about and how the children have reacted physically and verbally to his approach. The second step would be to interpret these cues. In the interpretation step, the child guesses about the meaning of the other children's behaviors. If he has noticed that the children briefly looked at him as he approached and then smiled at one another and continued to play, then he interprets these behaviors. The child's past experience will color this interpretation step. In this case, the child might remember that children who smiled at him were friendly in the past, and interprets their behavior as welcoming of him. He moves to Step 3 of the cycle, where he clarifies his goal: he will either have the goal of joining the group or will decide to get involved in a different activity.

Once he establishes that his goal is to join the group, the child considers the behavior he will need to enact to do this. He considers walking up to the group and sitting between two children without speaking. He also considers approaching no-one in particular and asking everyone if he can join. Before he chooses either one of these potential responses though, he evaluates each one. Predicting potential outcomes for each, he considers which might be the better choice. He also considers whether he possesses the skills and ability to enact each choice. He decides that he is not good at talking to groups of people, so he rules out the second choice. But he also recalls that if he joins the group by simply sitting down, he might not be welcomed by the group and they might not want him there. Thus, he has ruled out both potential behavioral responses he generated. Here we see an example of how the steps of the cycle do not always occur in the same order. In this case, the child gives himself the feedback that

neither of his generated behavior choices is desirable, and so he goes back to the response generation step, Step 4, instead of moving on to Step 6 after evaluating his choices.

Now he comes up with a third potential behavior. He thinks about approaching one group member and asking him if he can join the group. He goes on to evaluate this response, Step 5, and decides he feels himself capable of speaking to one child. He also thinks this allows the group to decide he cannot play, if that is their wish. He thinks this is potentially a good choice, and therefore moves on to the sixth and final step; that of behavioral enactment. He asks the one boy if he may join their game. Based on that boy's reaction, the child will begin the cycle again, when he encodes and interprets the reactions of his peers to his request.

Mental Representations in Social Problem-Solving and Motivation

The problem-solving cycle, as seen in this example, does not consist of a uniform set of steps nor are the outcomes likely to be constant across children. Rather, the course of the cycle varies based on situational features to which the child must react and adjust as well as upon the unique cognitions of the child. These cognitions include interpretations, expectations, and goals. They are informed by mental representations including memories, feedback from others, and beliefs about one's own capabilities. These mental representations are referred to by Crick and Dodge (1994) as a central *data base*. The role of the data base—including memories, beliefs, and goals—in social thinking has been examined by some researchers in the motivation field. Specifically, several researchers have investigated the roles of capability beliefs, goal orientations, and self-efficacy on social behaviors and outcomes (e.g., Erdley et al., 1997; Gaudiano & Herbert, 2006; Goetz & Dweck, 1980; Levy, Plaks, & Dweck, 1999).

In their study, Erdley et al. (1997) looked at several of these mental representations in the social domain. They demonstrated that when children entered a social challenge with a performance goal, they performed a social task more poorly and expressed more negative feelings about the task after experiencing setbacks. As expected, given the close relationship between goals and ability beliefs, children operating under the belief that their personality is a stable feature about themselves tended to have self-defeating reactions to failure in the same social situation. In these experiments, children's beliefs about the nature of capabilities and their goals for the task affected the outcome of the task by influencing persistence and the quality of ongoing efforts. Goetz and Dweck (1980) found that children's attribution patterns for failure in social situations was related to subsequent goal-directed behavior. Specifically, children who attributed their social failures to personal incompetence deteriorated in subsequent social performances regardless of their actual skill level.

Engaging in social problem solving and enacting social behaviors can clearly be construed as situations in which one's abilities are on display. Being able to find, create, and maintain friendships requires a strong sense of social efficacy (Bandura et al., 1999). Being willing and able to employ new strategies for thinking about and acting in social situations requires that children be focused on the task at hand, rather than being distracted by self-doubts and fear of self-exposure. There is compelling evidence that when children have more adaptive motivational orientations, including incremental theories, learning goals, and strong social self-efficacy, they are better able to persist and

to use productive strategies on these challenging social tasks. Thus, it seems reasonable that we would address beliefs if we are going to try to intervene with children to promote the development of social behaviors that facilitate the creation and maintenance of friendships. In order to truly promote social competence, a child's self-perceptions must also be monitored. If we intend for children to acquire new strategies for thinking about and acting in social situations, it is essential for researchers to consider how capability and efficacy beliefs might affect persistence and cognitions.

Measuring Social Ability-Related Beliefs

Several social skills interventions have incorporated aspects of social problem-solving processes into their programs (e.g., Piffner & McBurnett, 1997), with at least one seeking to specifically address children's capability beliefs. In their study, Gettinger, Doll, and Salmon (1994) tested the effectiveness of a social problem-solving training that included goal setting, problem identification, practice generating responses to social situations, and evaluation of responses. The training was designed to not only help children develop skills and a behavioral repertoire, but also to change how they felt about their ability to exert control and to improve their social experiences. Changes in social behaviors related to friendship and to more general functioning were predicted to change in response to the type of intervention children received. Behavioral changes were measured via pre and post intervention questionnaires and observations. Results of the study indicated that children who received goal-setting training and problem-solving training were more successful than their control group peers at attaining social goals and at engaging in prosocial play.

The possible explanations for the differences observed and reported in the intervention group members' behaviors was hypothesized to depend somewhat on changes in social ability beliefs. Although the children's ability beliefs were not explicitly manipulated, changes in their mental representations were hypothesized to occur secondarily to changes in problem-solving skills. Changes in mental representations were assessed using two instruments: one was a measure of global self-perception, and the other was Lepore, Kiely, Bempechat, and London's (1989) Social Ability and Responsibility Beliefs Scale (SARB). The SARB was created to measure the degree to which children have a fixed view of social ability and whether they believe they have control over social outcomes.

Lepore et al. designed the SARB as part of a study to assess whether students who had a malleable view of social ability and who believed themselves to have control over social outcomes exhibited less helplessness responses to social failure. They found significant negative correlations between helpless behaviors and students' scores on the MOSA, indicating that children with more malleable views of social ability have more adaptive responses to failure experiences.

Lepore et al. (1989) made an important first step toward assessing capability beliefs in the social domain. Their work was informed by that of Dweck and her colleagues including those who have been more concerned with social attributions and perceptions of control in social situations (e.g., Fincham & Hokoda, 1987). The SARB includes a total of 28 items composed of two subscales with 14 items each. The first subscale, the Malleability of Social Ability (MOSA) scale, assessed the degree to which

social ability was seen to be fixed. The other subscale, called Responsibility and Control (RAC) was designed to measure whether social outcomes are thought to be one's own responsibility and within one's control. The RAC items were modeled on locus of control-type items where attributions are made for outcomes (e.g., to luck, to talent, or to the kindness of others). Cronbach's alpha coefficients were collected for each of the subscales; for MOSA scores, it was .70, and for RAC scores, it was .56. The Pearson's correlation between the two subscales was nonsignificant ($r=.32, p=.10$). Validity evidence was obtained by having independent raters blindly assign items to the different subscales included in the instrument. The interrater reliability was satisfactory ($r = .90$). No other reliability or validity evidence was offered for the SARB.

It is not clear from the minimal amount of validity evidence collected whether the SARB is effectively measuring what it purports to measure. It would be important to conduct additional research on the measure prior to using it to measure children's beliefs, especially to collect additional validity evidence. If one were to seek to gather evidence of validity based on the instrument content, it would be important for the authors to discuss item development more completely, especially to outline the constructs in terms of the range of beliefs a person can have and to describe how responses would differ for respondents with different beliefs. In their discussion of item development, it would be useful for the authors to address how items were worded to align with the constructs they represent.

For example, items on the MOSA subscale are items that assess how malleable children believe their social abilities are and thus the items should be worded to specifically address that construct. Items that have been used in existing measures such as Dweck, Chiu, and Hong's (1995) have been construct-specific, asking the respondent to consider whether the ability can be changed, and whether that change is within a person's capabilities (e.g., "you have a certain amount of ability and you can't do much to change it"). Several of the SARB items do not appear to be adequately construct-specific. For example, the MOSA item, "kids who are popular now will be popular when they are adults," asks a respondent to consider whether the trait is a stable trait over time, rather than whether the child believes himself capable of changing the trait. A positive endorsement of the SARB item could be reflective of a belief that all children will be popular adults, but does not necessarily reveal whether the respondent believes popularity is something about a person that can be changed. Several of the MOSA items differ from items typically used to assess whether a child has an incremental theory of ability.

Additional problems with content validity might arise because of the terms used to describe social ability. The authors do not explain why researchers use different terms for social ability and why the terms used in the SARB were selected for use. Among these terms are *popularity*, *number of friends one has*, *being voted "Least Friendly Kid"*, and *being a good friend*. Several social skills researchers have disputed the premise that a child's social standing is indicative of the presence or absence of social skills. This is because social status and social acceptance are not solely the result of the traits of a child, but also depend on the child's social milieu (Dodge, 1985; Mikami, Boucher, & Humphreys, 2005). Thus, data supporting the use of terms like *popularity* as a proxy for *socially capable* should be included in the SARB development literature. Furthermore,

additional data could be collected about whether using different phrases such as *being a good friend* and *being someone who makes friends easily* interchangeably affects response patterns.

Additional data could be gathered to determine whether the SARB items can be expected to perform consistently over time and across samples. If there were more data to support the notion that the SARB elicits information consistently at different administrations, for example, then researchers might be more confident about its utility.

Overall, the SARB is an important preliminary version of a tool for assessing children's beliefs about their potential for improving their ability. However for educators interested in assessing multiple constructs related to children's beliefs about their potential to improve their social abilities, there needs to be a more complete and construct-specific instrument. This instrument would allow for the assessment not only of children's growth mindedness beliefs, but also of their feelings of social self efficacy, their beliefs about the stability of social skillfulness, their beliefs about the value of effort, and their social goals (be they to approach tasks with the goal of improving skills or to maintain positive feelings about one's abilities). One of its functions should also be to assess whether wording used to describe social ability elicits different responses from children. It will be important to know if terms such as *good at getting along with others*, *being good at making friends*, and *how much others like you* are equal and interchangeable in children's estimation. Sufficient reliability and validity evidence should be gathered for a new instrument, demonstrating that the results can be expected to be consistent across administrations and that the instrument results are in fact representative of children's social capability beliefs.

The Current Research Project

Currently no comprehensive, multidimensional measure exists to assess children's mental representations related to social ability. Since these are likely to have important effects on the outcomes of social skill interventions, they should be incorporated into interventions. However, without an effective measure of children's perceptions of social ability, it is impossible to know whether interventions are contributing to children's development of adaptive beliefs. This dissertation describes two studies that are carried out to assess the usefulness of two measures of social ability-related beliefs. Research questions for Study 1, the study of the MCITSC, are three-fold. The first research question is whether the scores for the measure are reliable. Secondly, item and respondent fit are examined to determine whether the items are successfully differentiating respondents based on their beliefs. Thirdly, validity evidence is examined to determine whether MCITSC scores appear to be valid.

Based on results from Study 1 and on lessons learned during the administration and scoring of the MCITSC, a second study was conducted. Study 2 examines the MSSP. Research questions for the MSSP also concern the reliability and validity of scores. Additionally, the measure's ability to differentiate respondents and to determine what their beliefs are related to social ability and the potential to increase social skillfulness is examined. Finally, the study seeks to identify terms for social ability that are meaningful to children.

CHAPTER 2

Study 1: Development of the Measure of Children's Implicit Theories of Social Competence (MCITSC)

This project was the initial step in developing an instrument that could be used to measure children's beliefs about the malleability of their social abilities. The single-construct Measure of the Construct of Social Competence (MCITSC; Appendix A) was designed to be used with children ages 10 to 12. These are the ages of children usually in the fifth and sixth grades, who are transitioning to middle school. This age group was chosen because most children begin school with an overwhelming sense of optimism and an eagerness to learn. However, by middle school, many children's excessively optimistic view of their abilities has faded (Stipek & Gralinski, 1996). A measure such as the MCITSC that produces reliable and valid scores can be used to inform interventions with children at the time when they are beginning to appraise their competence more accurately. The measure was conceptualized as a questionnaire-type instrument that could be administered to a group of children in their classroom in about

The MCITSC was designed using the *construct modeling* approach. The construct modeling approach, similar to *item response theory*, is founded on the work of Rasch whose Rasch model was developed to reconcile the differences between the two traditional measurement model approaches from the first half of the twentieth century (Wilson, 2005). The first of the two historical approaches focused attention on the meaningfulness of the results from the instrument or on its validity. The second focused on the consistency of the results from the instrument, or its consistency (Wilson). The construct modeling approach is based on the premise that the probability of getting a certain score on an item is a function of that person's latent trait or attitude such as ability or belief. The intent of the MCITSC pilot was to gather evidence of construct validity and to assess the reliability of the scores.

Several research questions were examined in Study 1. These included examining (a) the reliability of scores on the measure, (b) the relationship between respondents' scores on individual items and total scores on the measure and (c) the construct validity of the scores. Test-retest reliability information was provided through two separate administrations of the measure to the same group of students. The second administration was two weeks later. Validity evidence was gathered throughout the item design process through response processes, and through comparison with other measures. Discriminant validity evidence was collected by examining the relationship between MCITSC items and an external measure. Items analysis was conducted to examine how well individual items were able to predict overall scores on the measure. Also of interest was whether the items were written at an appropriate reading level for fifth or sixth graders.

Method

Instrument development. The MCITSC was developed using Wilson's (2005) construct modeling approach that consists of what he calls four *building blocks*. The four building blocks are the four steps involved in instrument development that, if completed correctly, often result in an instrument that is a measure of the construct in question. The

four building blocks also yield evidence for construct validity. The first step (or building block) of instrument development was defining the construct to be measured. In this case, the construct to be measured was implicit theories or growth mindedness beliefs related to social ability, which was termed *social competence beliefs*.

The examiner began by asking students in the fifth grade at a Bay Area elementary school about their thoughts about social competence. Based on conversations with these students, it appeared that many of their beliefs about the nature of ability tended to be along a continuum from the entity view to the malleable view, with some students thinking of ability as somewhat innate and somewhat acquirable. The essential act of defining the construct for this measure was creating a *construct map* (see Figure 1). The construct map is a depiction of the unidimensional latent variable. The construct map was created to illustrate the different levels of attitudes or abilities that respondents would hold or have in between two extreme views—in this case either an entity belief or an incremental belief. The final feature of the construct map is its depiction of the types of responses that would be given by respondents at each level. In this case, there are five levels of respondents and five levels of potential responses representing beliefs along the continuum from entity to incremental.

After creating the construct map, the second building block consists of creating individual items. These items are intended to be realizations of the different levels on the construct map. For instance, an item would ask a respondent to endorse a statement which would then show where that respondent's belief falls along the continuum. That is, based on the response, one can infer what the person's actual belief is, and where it falls along the continuum. Based on several rounds of informal interviews, items were created after students had been asked to critique and respond to item drafts. Final versions were written with the goal of making the items easy to read and to answer. All items were multiple-choice with some space provided for adding more open-ended responses on some items.

The third step in the construct modeling approach is defining the outcome space. This refers to developing response categories and scores for various types of responses. On the MCITSC, response options varied. Some items were dichotomous, where students were asked to simply agree or disagree with a statement. Other items used Likert-type responses, where students could respond on a 4-point scale: 4 (*completely agree*), 3 (*agree somewhat*), 2 (*disagree somewhat*), or 1 (*disagree completely*). Some items featured a question stem followed by four long phrases. These items required students to choose the phrase that included an explanation for the statement in the question stem. These responses were long phrases that were examples of responses at the different levels of the construct map. The following is an example of this type of item:

Jeff is having difficulty making friends. Is this because:

- (a) Jeff does not make friends easily, and that has something to do with the way he is. It would not change.
- (b) Jeff has not been trying hard enough, anyone make friends.
- (c) It's not easy for Jeff to make friends, but he can get better at making friends.

Figure 1. Construct map depicting the five attitude levels and their corresponding potential responses along the social competence belief continuum.

RESPONDENTS	ENTITY THEORIST	ITEM RESPONSES
<p>Entity Theorist (Level 1)</p> <p>People in this category think of social skills as a fixed entity. A person is either socially skilled or not.</p>	↑	<p>a) I believe that a person's ability to make and keep friends is something that can't be changed, even if they try hard.</p> <p>b) I would say that a person's ability to get along with others is something that can't be changed.</p>
<p>Somewhat Malleable (Level 2)</p> <p>People in this category think people are generally socially skilled or unskilled, however they can learn to be a bit more polished.</p>		<p>a) I think that one can only be horribly inept at making and keeping friends if one doesn't try at all.</p> <p>b) I believe that with some good hints at how to be friendly, a person can become better at making and keeping friends, to a point.</p>
<p>Half and Half (Level 3)</p> <p>In this category the belief is that people's social skills are the result of a combination of natural skill and the amount of effort they put towards being socially competent.</p>		<p>a) I think that if two kids are equally good at making friends and being friends with others, but one tries harder to learn some ways to be even better, the one who tries harder will end up being better in the end.</p> <p>b) I would say that how good a person is at making and keeping good friends depends partly on how much ability they have, and partly on how hard they try to be good at those things.</p>
<p>Mostly Malleable (Level 4)</p> <p>People can work hard and practice social skills a lot, but at some level they are limited by their own abilities.</p>		<p>I believe that although a person can get very good, you could only be truly excellent at making and keeping friends if he were born that way.</p>
<p>Incremental Theorist (Level 5)</p> <p>People in this category think social skills are acquirable</p>	↓	<p>a) I believe that person's ability to make and keep friends is something that can change with effort</p>
	INCREMENTAL THEORIST	

(d) Jeff can get better at making friends, he just needs to try a little harder than some kids.

The MCITSC included a total of 27 items. Twenty-one of these items were original items meant to elicit information about whether the respondent had incremental or entity theories of ability. The other six items were adapted from the Life Orientation Test-Revised (LOT-R; Scheier, Carver, & Bridges, 1994) and included to assess discriminant validity. The intention was to collect information to demonstrate that children's beliefs about the malleability of social beliefs are not simply a reflection of how hopeful the child is. LOT-R items assess how optimistic a child is through questions such as, "Overall I expect more good things to happen to me than bad." The LOT-R was originally designed for use with adults, but given the brevity and linguistic simplicity of the items, the original items were used with one modification. Following Fischer and Leitenberg's (1986) suggestion that Likert-type items be reduced to dichotomous items for simplicity when administering scales to children, LOT-R response choices were collapsed to a true/false format. LOT-R items are labeled *LOT-R* in the MCITSC and can be found in Appendix A.

The fourth and final step of the construct modeling approach is called the *measurement model*. This is a way to "relate the scored outcome space back to the construct" (Wilson, 2005, p. 85). This step will be described in the procedures and results sections where the specific analyses used are explained.

Participants. Participants consisted of the same group of 31 sixth grade students at a middle school in the Bay Area who were administered the MCITSC at two different time periods. The students were a convenience sample from one classroom. Demographic information for the particular classroom was not available, but the classroom was thought to be roughly representative of the school and of the district as a whole. The school was ranked at the sixth decile compared to other schools in California in terms of student performance on standardized tests (Academic Accountability Team for the California Department of Education, 2008). District-level information indicates that the 34.1% of the students qualify as *economically disadvantaged*. The racial/ethnic composition of the district was 44% Asian/Pacific Islander, 31.8% Hispanic, 12.4 % White, 11.4% Black, and less than 1% Native American. At the first administration, 31 students completed the questionnaire; however, one student's data were not included in the analysis because that did not respond to the majority of items.. For the second administration, responses were collected for 29 of the original informants. Data from both administrations were included in analyses of items, but analyzed separately.

Procedure. The MCITSC was designed to be administered in 30 minutes. This amount of time seemed to be long enough to obtain adequate information without being so long that children lose interest. A relatively brief measure of this kind could be administered without taking away too much instructional time. The instrument was administered to a group of students with each student having a copy of the items. Each item was read to the students while they followed along. They were given time to answer each question before the next one was read. This design was intended to reduce the effects of reading difficulties among responders.

Several open-ended questions were included to get a sense of why students selected the answer choices they did. For example, after a dichotomous item, blank space was provided with the statement, "Please explain." This addition provided information that proved to be useful. Some students' comments sometimes indicated that they had misunderstood or misinterpreted the question. Other student feedback suggested that the question was too vague or could be interpreted in ways other than that which was intended. This feedback was used in revising the instrument that is examined in Study 2, the MSSP.

The MCITSC was administered a second time, two-weeks after the first administration.

Results

Analysis of data was conducted using the computer program Grade Map (Wilson, Kennedy, & Draney, 2004). With this program, Wright Maps, Item Fit Graphs, and Kid Maps were created to examine item response distributions, item fit, and respondent fit. The person-separation reliability was also calculated using Grade Map. Evidence for validity was collected on instrument content and the instrument's relationship to the LOT-R scores, and based on response processes, the results of talk-alouds with students.

Construct validity.

Evidence based on instrument content. Content validity evidence refers to the accuracy with which an instrument's items represent the construct or theoretical model being assessed. "To compile evidence based on an instrument's content, the measurer must engage in 'an analysis of the relationship between a test's [instrument's] content and the construct it is intended to measure'" (American Education Research Association, American Psychological Association, National Council for Measurement in Education, 1999 as cited in Wilson, 2005). Wilson goes on to explain that carrying out the steps of a) defining the construct (including creating a construct map), b) a description of the set of items, c) a strategy for coding and scoring the responses, and d) a "technically calibrated version of the construct—the Wright Map" (Wilson, p. 156).

These steps were carried out beginning with research on malleability of ability beliefs and about social capabilities that informed the theory (Dweck & Leggett, 1988; Goetz & Dweck, 1980). Conversation with potential respondents informed the language and levels along the continuum. Together theory and interviews drove the creation of the construct map, (again see Figure 1). The items design phase followed: here items were created based on the construct map. Some of these items were in turn read to the fifth grade students and revised according to some of their feedback. If they asked questions about wording or otherwise indicated confusion, items were revised to try to improve clarity. The next step of the instrument development process was the scoring and coding of potential responses, which resulted in a defined outcome space. Finally the Wright Map is a calibrated version of the construct map, where the theory was borne out by actual items and respondents.

Evidence based on response processes. During the administration of the instrument to the sixth grade respondents, four students were selected at random to engage in a *think-aloud* while they completed the questionnaire. These four students were chosen to talk about what they thought the questions were about, what their ideas

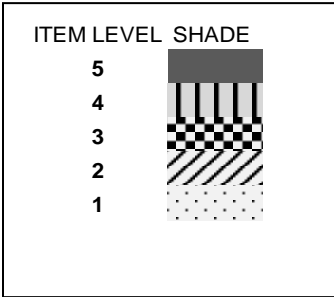
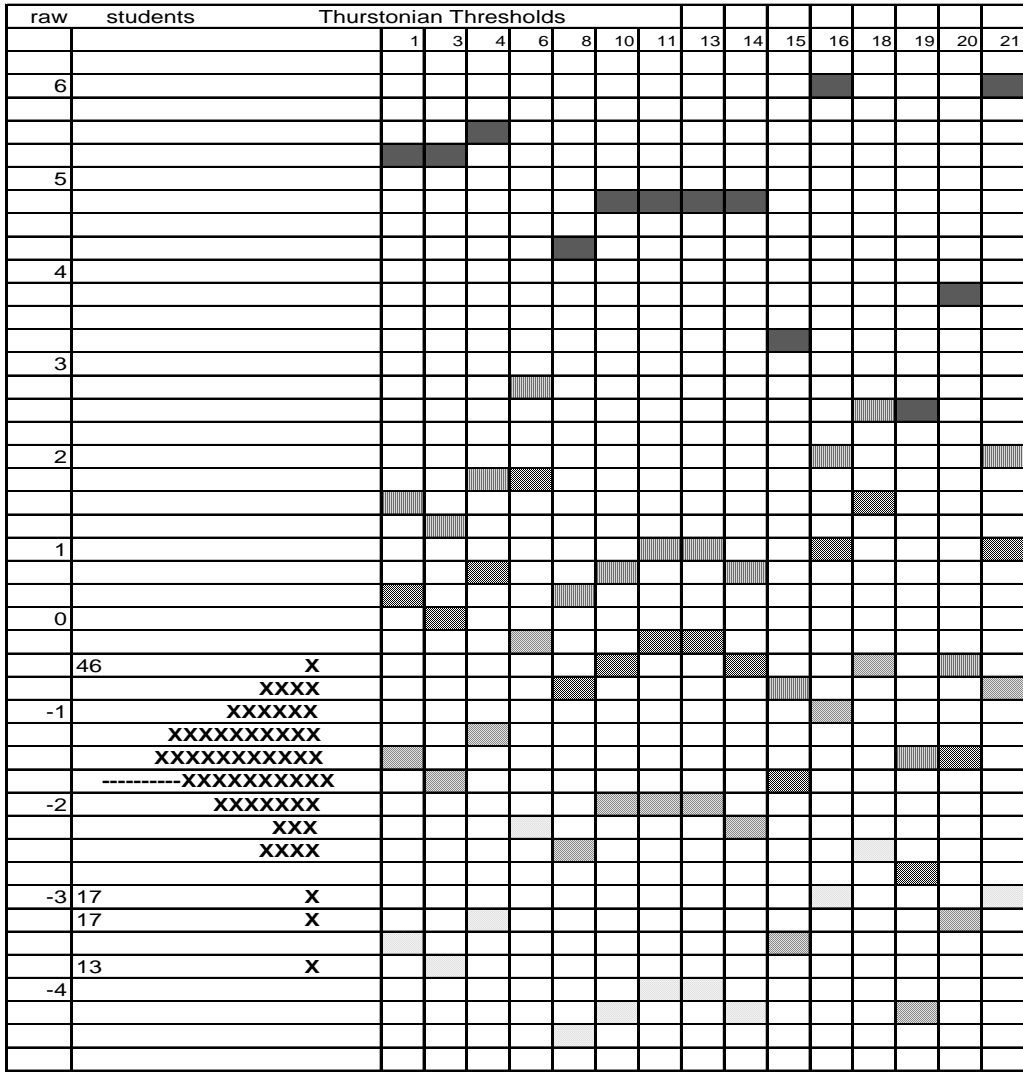
were on the subject, and how they chose their answers. In talking with them, several characteristics of the items and students became obvious. One was that students had quite different experiences completing the questionnaire, based on their reading ability. For the longer and more complicated items, the better readers were able to listen once to the question, and then go back and read it to themselves. On the other hand, poorer readers were not always able to independently re-read and understand the items. It became obvious during the think-aloud that one respondent was having trouble remembering and understanding the question after hearing it once, and needed it repeated. He admitted that instead of asking for clarification, he would probably choose an answer at random if he did not understand the question.

Another unexpected issue arose when the students were distracted by aspects of the item they thought were pertinent to the question. For example, one respondent commented that “people say you shouldn’t change for others,” when asked about the possibility of changing one’s ability. She was distracted by her idea about change and was not interpreting the item in the way it was intended. Reassuringly, the students for the most part seemed to be considering the questions in the way that they were meant. They seemed to understand the scenarios, especially after a second reading, and seemed to employ a fairly sturdy theory about the malleability of social competence throughout the administration of the measure.

Another problem that became obvious during think-alouds was the delicate nature of terms and concepts related to social ability. One respondent stated that everyone has friends, even if it does not seem like it. She seemed to be struggling with questions of acceptance and friendship at a personal level, apparently unable to think about ability in the abstract. The sensitive nature of the questions may stir up emotions in some students that might in turn color their interpretation of the item and shape their responding style. In any case, it seems unlikely that many students would endorse the premise that all children have adequate numbers and qualities of friendship. Nonetheless, it is clearly important to be cautious in the wording of items, and to try to focus on the social behaviors and actions of friendship rather than on the condition of acceptance. Because students indicated some unwillingness to think of other children as friendless, it seems likely that the validity of scores obtained on the MCITSC is reduced when items address acceptance rather than social behaviors and actions.

Structural validity. The first step in analysis of the data was to produce what is called a *Wright Map* (see Figure 2). The Wright Map is a convenient visual tool that gives information about the estimated location of respondents along the construct map and the estimated *difficulties* of the items and item-steps. It displays these results on a single scale. Here, the term, difficulty, refers here to how strong one’s beliefs must be in the incremental direction before a respondent will be likely to endorse the item. Displayed on the respondent (left hand) side are the estimated locations of respondents along the construct map based on their responses to all items: respondents higher up on the map hold progressively more incremental theories of social ability. The advantage of

Figure 2. The Wright Map displays information about the estimated location of respondents along the construct map and the estimated difficulties of the items and item-steps on a single scale.



the Wright Map is that it allows one to see how respondents are distributed along the construct continuum. The item difficulties are represented on the left side; the higher the item (or item-step), the more incremental one's theories needed to be before one was likely to endorse the item. One hopes to see respondents distributed somewhat evenly across the levels, indicating that there are respondents earning scores at all of the levels of the continuum. The distribution of respondents in the case of this study was fairly normal, indicating that respondents' scores represent a range of attitudes and that the instrument is able to differentiate respondents based on their attitudes.

On the right side of the Wright Map, an analysis of the items is depicted. The Wright Map shows what are termed *item thresholds* on the construct. It shows that there are varying levels of responses for each item. These varying levels should reflect the continuum of beliefs as portrayed on the construct map. An item's lowest response level on the Wright Map should be consistent with the response of a respondent at the lowest level on the construct map. In this case, a Level 1 response to an item should be an example of a response an entity theorist would give. The highest level response for that same item should be the response a participant at the highest level would give—a response characteristic of a person who holds an incremental theory.

What one hopes to see on the right side of the Wright Map is a set of items where each item has reasonable vertical spacing between item-steps. This spacing would be indicative of the difference between responses such as *strongly disagree* and *disagree*, for example. This was the case in the analysis of the pilot. No item had any levels that were in the wrong order, nor were any two levels on the same line. Some of the mid-level responses were a bit more widely spaced than is desirable. This indicated that many of the Level 3 responses—where students indicated whether they mostly agreed or mostly disagreed—may not have been eliciting unique information from respondents.

This information would be that which would differentiate their beliefs from those of Level 2 or Level 4 respondents. From the Wright Map, it could also be seen that the Level 5 responses for items were not frequently endorsed. This could have been attributable to one of two things. First, it could be that items that were representative of an entirely incremental orientation (i.e., Level 5) were much more difficult for respondents to endorse than are Level 4 responses. The other problem could be that the sample size was too small, and so there were not enough respondents who represented the fifth level of the construct.

Overall, the results from the Wright Map provide evidence for the validity of scores since the measure appears to be adequately differentiating respondents from one another. Furthermore, items appear to be adequately representing a range of attitudes, although items appear to be able to distinguish respondents with more extreme views. Items' ability to differentiate mid-level attitudes could be improved.

Item fit. After using the Wright Map to look at items and respondents together, the next step was investigating item fit, using the mean square fit statistic, which looks at the ratio of observed to expected fit residuals. This is done for the items and then for respondents. An Item Fit Graph indicated whether each item's mean square fit statistic fell within the acceptable reasonable range (.75 to 1.33). The weighted *t* statistic is also displayed for each item, testing the null hypothesis that the item's fit statistic is one. In

the items analysis phase three items with high mean squares were identified as a problem, as these items appeared to elicit responses that were too random (items 4, 15, and 19). The remaining 24 items were seen to be eliciting acceptable response patterns. Responses to the three poorly-fitting items did not seem to match responses the same respondent gave for other items, and therefore were not providing good information about the respondent's true beliefs about the malleability of social capabilities. In order to revise the content of these items for future versions of this measure, it was important to consider why these items fell outside the range of fit.

To do this, it was helpful to go back to examine features of the item including the content of the item, the type of item (e.g., dichotomous versus Likert type), and the placement of the item relative to other items. By going back to the items and considering whether responses were too random as well as considering the item content, type, and placement, it was possible to identify possible reasons why each of the three items' fits might be poor. Based on this consideration process, it appeared that some items were eliciting responses that seemed random due to problems with the wording. For example, some of these items may have been too lengthy or too open to different interpretations. Based on these results, it is reasonable to suspect that the validity of scores would be improved if the poorly fitting items were revised.

For those items that elicited more random or overly consistent responses, examination of the wording of some of the items was helpful to determine whether something about the item could be causing students to be confused or to respond more uniformly. Some of the items eliciting inconsistent responses were more linguistically and conceptually complex than others. Sometimes, students seemed to potentially have ignored or misread a statement where an opposite interpretation could hinge on a single word. For example, on the item, "Celina is a fifth grader who tells her teacher that everyone would be a good friend to others if they wanted to be. Do you agree with her?" a respondent could easily misread the statement if not reading carefully, thinking that the statement indicated that *not* everyone could be a good friend, thus reversing the meaning of the item.

In future scale developments, questions about poorly fitting respondents could potentially be answered if more information were available about the respondents, such as their reading ability. Future items would also be less linguistically complex so that respondents with a variety of reading abilities could reasonably expected to be able to understand the items. Furthermore, it became clear that items should be read to students and that it should be possible for items to be re-read according to students' needs. These improvements could enhance the utility of the measure, increasing the accuracy and the validity of results.

Respondent fit. Another important aspect of analysis was the consideration of how certain respondents' patterns of response fluctuated. For this purpose, attitude estimates and fit indexes for all respondents at both for the first and second administrations were examined. Analysis of the Time 1 and Time 2 data for each of the respondents was conducted. Based on these data, nine respondents were found to have infit mean squares outside the normal range of 0.75 to 1.33 as well as significant *t* statistics. The responses of individuals with infit mean square statistics indicating overly

random patterns of response (above 1.33) were investigated to determine why the individual's fit was poor. The response patterns of nine students were examined to look at how well responses on items fit with the student's expected responses given his location on the Wright Map. Responses each of the nine students with poor fit gave for items were examined in conjunction with the ability estimates generated by Grade map for each student. Five of the nine students' responses appeared to be somewhat random. That is, the students sometimes endorsed items indicative of a more incremental view than their overall score would predict. On other items, the student endorsed items more indicative of an entity view. Thus, based on their responses to many items, it is difficult to estimate the student's true beliefs. The other four students were responding with more consistency than is expected. These responding styles are less common, but are also more acceptable. Overall, investigation of respondent fit indicated that most of the respondents were fitting fairly well, since only nine of the sixty sets of responses were fitting poorly. This provides evidence for the validity of MCITSC scores since for the majority of respondents there is good fit between overall scores and responses to individual items. That is, responses to items appear to be predictive of overall attitudes and beliefs.

Evidence of reliability. For this measure, two measures of reliability were examined: a measure of internal consistency (the person-separation reliability), and a measure of consistency over time (test-retest reliability). The person-separation reliability coefficient, which is adjusted for missing data, is analogous to the Cronbach's alpha coefficient. Reported by Grade Map, the person separation reliability was 0.74. This value suggests that the measure displays moderate consistency across items and differentiated respondents fairly well.

The second measure of consistency was obtained by comparing participants' scores from the first administration to those at the second using a Pearson product-moment correlation coefficient. The test-retest correlation coefficient was 0.58. This suggests that participants' scores varied pretty widely from one administration to the next. A coefficient at this level indicates that the measure is not able to consistently provide information about sixth grade students' views on the malleability of social competence.

External validity. To assess if children's implicit theories as assessed by MCITSC scores are related to their level of optimism, as assessed by LOT-R scores, MCITSC scores were correlated with scores on the LOT-R. The correlation between students' optimism scale scores with their score on the implicit theory measure was 0.10. This correlation indicates that a respondent's level of optimism is not related to how malleable one believes social ability to be. This lack of a relationship between the MCITSC is evidence of discriminant validity. This is further evidence that the measure is actually measuring the construct in question.

Discussion

In this study, I developed and examined the structure and scores of the MCITSC in a sample of sixth grade students. Adequate evidence for MCITSC scores' content validity and discriminant validity was gathered. This validity evidence suggests a number of things a) that the development of MCITSC items and the methods for scoring

them were appropriate and that most of the items are likely measuring the construct they are intended to measure b) as the item fit statistics suggested, some items elicited responses that varied widely, which may suggest that those items are not effectively measuring the construct, but rather are tapping children's views about something else c) that the items are not actually measuring another potentially related construct and d) that there should be more care in the future to ask about the potential to improve social behaviors and actions rather than to increase one's social acceptance, because respondents were distracted by the idea of children being friendless, which in turn affected their responding to those items.

Reliability evidence was mixed. The measure's scores appear to have adequate internal consistency, but scores were less consistent over time as measured by test-retest. There are several possible explanations for the lack of consistency over time. One possible explanation is that there is a subject-construct mismatch—that is, maybe between the ages of 9 and 11, children's views about whether social competence is a malleable ability is not completely differentiated. Alternatively, perhaps students do have well-formed theories about this, but social desirability concerns affect their responses. It is possible that they feel compelled to disagree with certain kinds of statements because they think that there is a certain way they should answer. This reduced honesty could potentially lead students to provide widely variable answers, with decisions about when to be honest varying from one administration to the next. Of course there are many possible reasons for this lower correlation coefficient, the most obvious of which, is the small number of respondents. Perhaps with a bigger sample obtained for repeated investigations the consistency in retesting would improve.

Based on the administration of items in Study 1 to a small sample, some conclusions were drawn about item types and scoring practices. One major weakness in certain types of items was seen when the response choices did not necessarily align with the levels of the construct. For instance, an item that indicated that a child disagreed with the entity theory—and therefore was not at Level 1—did not always provide any additional information. That is, it indicated what belief the child did not hold, but did not indicate what level actually does describe the child's beliefs. This can be considered to be a weakness of the Construct Modeling Approach to designing instruments that measure beliefs and attitudes rather than abilities. If a child earned an incorrect answer on an ability test, then that could be seen to be an absence of ability whereas the same is not true on attitude measures. This problem was addressed in designing items for the second study.

As mentioned previously, based on the think-aloud process and responses that some students made to certain items, it appears that students struggled with wording associated with social ability; some students disputed the premise that there are children who have no friends; other students wondered whether some children seem less accepted because of circumstances beyond their control, such as unfriendly peers. Thus, questions remained about the best ways to ask children about social competence. Revised items should be designed to assess whether different terms for social abilities and competencies affect how students respond to questions about malleability beliefs.

Going from the MCITSC to the MSSP

The MCITSC pilot was a useful and informative preliminary study. There was some evidence for validity of scores, but also evidence that validity and reliability could be improved. Changes in wording of items, in response designs, in the number of constructs measured, and in the sample size should result in improved results. To improve efficiency and precision, the MCITSC was revised and a second study was conducted. Based on the results of Study 1 the MSSP, examined in Study 2, featured some important improvements. The MSSP includes items and responses that very clearly show where along the construct map a respondent is likely to be located. That is, no matter how the person responds, that response contributes towards a more complete understanding of the person's actual attitude. This is important both for collecting highly accurate information about each respondent, and also for being able to eventually reduce the number of items to a core set of items that can be administered quickly before and after interventions.

To gather information about the most meaningful and appropriate terms for social ability, the MSSP features identical, or nearly identical items, where only the terminology for social ability varies. Gathering information about how and if responses to items vary based on terms used to describe social abilities is an important function of the MSSP.

Finally on the MCITSC, it was considered a major limitation that only one construct could be measured. As stated before, the field of achievement motivation is replete with useful and complementary theories that when measured together can better inform adults as to how children think about their potential for growth and improvement and whether they hold goals that lead to the kind of effort achieving competence might require. As such, the MSSP was created as a multidimensional scale, drawing on several constructs. Techniques from classical test theory were used instead of the construct modeling approach, as the later gets quite unwieldy when multiple constructs are in use.

CHAPTER 3

Study 2: Development of the Multidimensional Scale of Social Potential (MSSP)

The present study is intended to assess the effectiveness of an instrument for measuring multiple constructs related to beliefs about the potential for improving social abilities. The instrument, called the Multidimensional Scale of Social Potential (MSSP), is intended to provide a more complete picture of children's beliefs about potential for improvement. It compares children's responses within distinct but related constructs to see whether theoretical relationships are borne out in children's responses. As described in previous sections, motivational theories have cross pollinated each other to the extent that there is good reason to collect information about many of these constructs. It is important to learn not only about children's theories of ability in terms of whether growth in ability is possible, but it is also important to know more about children's beliefs in terms of their potential for improvement by asking about effort beliefs, beliefs about the stability and consistency of capabilities, about their goals, and about whether they perceive trainings and activities to be helpful.

Similarities and differences between the MSSP and MCITSC. The MSSP is an expanded measure of children's beliefs compared to the MCITSC, featuring items representing numerous constructs. However, the MSSP does extend some of the findings and lessons from the MCITSC. Among the several constructs, the MSSP includes items to measure the construct of malleability beliefs in children that resemble those in the MCITSC. MSSP items that measure beliefs about malleability of ability have evolved in several ways. First, malleability items are referred to as growth-mindedness questions. Next, MSSP items are more concise and are thus less likely to be difficult for poor readers. Response choices are uniform and briefer as well. MSSP items are modeled more closely on items used by Dweck and her colleagues (e.g., Blackwell, et al. 2007) in an attempt to make items more construct specific. Finally, items were adapted so that each item could be expected to provide unique information about the respondent's location along the construct continuum. Although none of the MCITSC items appears verbatim in the MSSP, the examination of MCITSC items influenced the creation of the MSSP malleability items.

The MSSP was also expanded to include various motivation constructs. In addition to gathering information about beliefs about the nature of ability, or growth mindedness, the MSSP was designed to obtain information about whether children think interventions can help foster friendships, whether the ability to make and to keep friends is stable across time and situations, and whether children think it is worthwhile and effective to put effort into developing social skills. New terms for social ability were employed as well, to test whether terminology affects responding styles. To that end, items were created to provide feedback about children's beliefs regarding the nature of social capabilities, from their perceptions of the potential for it to change to their goals in friendship situations and their sense of their own capabilities.

Design and Structure of the MSSP

As with the MCITSC, the intention was to create an instrument that could be administered in about 30 minutes or less. Items were created again using Wilson's (2005) four building blocks model. This model is used to create items and potential responses and scoring processes that are a coherent representation of respondents' beliefs. Based on responses to items, it should be possible to know how a respondent feels about the constructs in question, and to be able to express this in the form of a score on the instrument. The first three steps of the four building blocks model are described for each set of items within each construct or subscale: stability, effort, self-efficacy, growth mindedness, goals orientation, and practice. Additionally, the terms used to describe social skills and social ability are described.

Research questions. Several research questions were addressed in this study. The first question centered on the reliability of MSSP scores in measuring children's beliefs about the potential to increase one's social competencies and abilities. The second question focused on the validity of the scores obtained, including content, structural, and external validity evidence. For the third question, I examined if the use of different terms for social capabilities affected responses to the items.

Additional content-related evidence was collected when independent experts were asked to evaluate the structure of the instrument. To gather evidence of external validity, the instrument's scores were correlated with scores from a task-choice item and another scale. Analyses were conducted to examine the subscales expected to be present. These included factor analyses and were carried out to examine whether the proposed structure of the scale would be supported and whether differences were seen in responses based on terminologies used. To answer questions about the reliability of the MSSP, correlations were obtained for the scale as a whole. Reliability measures were obtained for subscales within the MSSP and for comparing two administrations of the measure at different times.

Constructs Included in the Study

Items were designed within subscales based on each of the constructs. For each subscale, the construct is described and defined. This is followed by a description of how items are designed to describe different levels of that construct. The strategy for translating item responses into scores that illustrate a respondent's beliefs and orientations is explained.

Stability beliefs (STAB). Research has been conducted to parse out whether children differentiate between their own sense of control and factors outside their control in the development of their ability. In their study, Pomerantz and Saxon (2001) established that children do in fact distinguish between internal and external forces that might have effects on their abilities and that these lead to different beliefs regarding the stability of ability. Their results indicated that believing ability is stable and related to internal factors (e.g., believing that one is born with a certain amount of ability and that there is nothing one can do to change that) can have detrimental effects on ongoing motivation. However, results also indicated that believing ability to be stable and unrelated to external factors, such as time and place, can have positive effects on motivation. This belief in the stability of ability across situation and time has been called *constancy* (Pomerantz & Ruble, 1997). Although a good deal of research conducted to

examine children's beliefs about the temporal and contextual constancy of intellectual ability suggests that children older than age 9 are more likely to endorse the notion of constancy (Kinlaw & Kurtz-Costes, 2003), little or no research has considered beliefs about constancy of social abilities. Given this, it seems important to include a subscale comprised of items that probe children's beliefs about the stability of social ability, irrespective of external factors like time and place.

The construct of constancy can be conceptualized as having two poles. On one pole, children think that their social ability, whether strong or weak, will be constant and stable across time and situations. At the other pole, the belief will be that time and situational features affect a person's social ability. An example of a response reflecting a constancy point of view would be a child's endorsement of a statement that when he gets older, he will be as good as he is now at making friends. Conversely, a child who does not believe ability is constant might potentially say that although they are good at making friends, if they were at a different school, they might not be so able to make friends.

Between the two poles are positions that reflect some agreement and some disagreement with the extreme views. For instance, someone might state that she is overall a good friend who gets along well with others, but that she might have some trouble getting along with other children in a different situation. She might say something to the effect that "I am usually good at getting along with others, but in some situations I am better at it than in others." This respondent would have a mostly stable orientation, but would not say that her social ability is completely stable. If we imagine that the poles of the construct are Points 1 and 6 on a scale, with 1 representing a *constancy* orientation and 6 representing the view that ability is *variable*, then she might be a 2 or 3 on the scale. She is toward the stable end point, but is not all the way there.

Unfortunately, it becomes quite complicated when items are tailored to every possible view point. As became clear on administration of the MCITSC, when items such as the last example are included, it is possible to get a clear sense where on the construct map a respondent falls when a respondent agrees with the statement; for example within this subscale, we could safely say she is at a Level 2 or 3. However, if a respondent does not agree with the statement, then we cannot conclude anything about where she falls, except to say that she is not likely to be at a 2 or 3. She could think that ability is much more stable or that it is not stable at all. For that reason, items were designed so that responses to every item yield information about where the student lies along the 1 to 6 continuum. This was achieved by using Likert-type items where the number choices included descriptors, and the child indicated where his belief would best be located along the continuum. On this scale, items were of this type: "In middle school, I will be as good at making friends as I am now." Response choices were "*Strongly Disagree, Disagree, Disagree a Little, Agree a Little, Agree, Strongly Agree.*"

Effort (EFF). When attempting to measure how changeable children think their abilities are, some researchers have included items assessing whether children believe effort can affect academic ability (e.g., Stipek & Gralinsky, 1996). They have included items that ask children to agree or disagree with statements about how related effort is to one's academic performance. In their research, Dweck et al. (1995) have not typically asked children about how connected they think effort is to ability, instead focusing their

questions solely on whether one can or cannot change one's ability. They do not inquire about the ways that one might change that ability, if one believes the ability can be increased or decreased. Others have elected to extend the theory, examining a set of beliefs related to implicit theories or growth mindedness. Stipek and Gralinsky (1996) assessed what they considered to be the interconnected beliefs about intelligence, effort, performance, goals, and the use of learning strategies. Factor analysis suggested that items suggestive of a belief that effort is a cause of academic performance loaded on the same factor as items that were written to assess incremental beliefs, whereas items that suggested that for some children no amount of effort can lead to improvement loaded highly with entity theory items. Stipek and Gralinsky interpreted this result to mean that effort items are similar to and potentially related to implicit theories.

Items eliciting feedback about children's ideas about how effort and ability are related were included as a subscale in the MSSP in an attempt to replicate previous findings and with the hope of obtaining information not just about the degree to which ability is considered to be fixed, but about the potential for increasing it and possible strategies for doing so. The effort items can be thought of as extending the information that will be obtained from growth mindedness items. This extended information will shed light on whether and what kind of work can lead to increased ability, which will be helpful when designing social competence interventions that target skills and motivation.

The construct of effort is conceived of as a continuum of ideas. On one end is the pole where no amount of effort is believed to be able to result in more ability. This is where a respondent is described as a 1 on the scale from 1 to 6. At the opposite pole, are the Number 6 responses where no matter what, effort is thought to be able to lead to any level of achievement. In between these poles are less extreme views. Someone at Number 2 might say that effort can lead to some improved ability, but not very much of it. An example of a statement representing the Number 3 viewpoint is as follows: "with significant effort, a person can get much better at making friends, but some people will always be better at it."

Self-efficacy beliefs (S-E). In addition to knowing about children's beliefs about ability, fully assessing how children feel about their potential to improve in a certain domain will require information about children's self-efficacy. Items in this area have been adapted from the Social Self-Efficacy Scale (SSES; Gaudiano & Herbert, 2006). These items ask a child to report on how capable he feels in social situations. The SSES was written for adults and so the wording was altered to make the questions more relevant and easily understood by children reading at about a fifth grade level. This adaptation of SSES items can be seen in the side-by-side comparison of SESS items and their MSSP counterparts (see Table 1). Because these items were adapted from another instrument, no construct map was developed for the Self-efficacy items.

Goal orientation (GO). A set of items were designed based on an existing survey designed to assess achievement goals. In their instrument, the Patterns of Adaptive Learning Survey (PALS), Midgley, et al. (1998) designed a questionnaire to assess the kinds of goals children hold in achievement situations. Their items, based on research in the field of achievement motivation (e.g., Ames, 1992; Dweck & Leggett, 1988; Nicholls,

Table 1

Comparison of SESS items converted to MSSP items

ORIGINAL SESS ITEMS	CORRESPONDING MSSP ITEM
SESS Item 1: One reason some people have difficulties in certain social situations is because they don't believe they have the skills necessary to do a good job. How confident are you that you have the basic skills to perform well in social situations.	MSSP item: One reason some people have a hard time making friends is because they don't believe they have what it takes to do a good job. Do you think that you have what it takes to be friends with other kids?
SESS Item 2: How much do you think that any shortcomings you may have in social skills will bother you in social situations?	MSSP Item: How much do you think that any trouble you may have making friends will bother you when playing with kids?
SESS Item 3: Is it possible for you to perform well in social situations in spite of any weaknesses you may have in social skills?	MSSP item: Is it possible for you to make friends even if you have some trouble being a good friend?
SESS Item 4: How much do you think your thoughts and worries bother you during social situations?	MSSP item: How much do you think that any trouble you may have making friends will bother you when playing with kids?

1984), aim to assess the types of goals children have in academic settings. These goals, as explained in previous sections, are thought to be of two types: challenge seeking or demonstration seeking. The challenge seeking orientation is relatively straight forward; children who have these kinds of goals try to improve their abilities by seeking out challenging tasks where they may be able to acquire new knowledge and skills. The children who are more interested in documenting their ability will not only seek out tasks where they are likely to be able to succeed in order to show their ability, but they will also avoid documenting a lack thereof. Therefore, these children are said to have two kinds of goals, depending on the situation. They will embrace tasks on which they expect to succeed but will avoid challenging tasks where they risk being seen to fail. Thus, items are structured to be one of three kinds of question: challenge seeking, ability demonstrating, or avoiding the demonstration of inability. In the PALS these are termed: *task goal oriented*, *ability approach oriented*, and *ability avoid oriented* respectively. In the present questionnaire, items have been adapted to yield information about children's social goal orientations.

The theories endorsed by the motivation researchers have mostly indicated that the challenge seeking orientation is reflective of an incremental view of ability. The demonstration seeking goal orientation, and the challenge avoidance orientation are both thought to be manifestations of an entity theory—where the choice of an easy guaranteed success or the choice to avoid possible failure is made because ability is seen to be of a fixed quantity. The actor in this case does not want to find out or to let others see that that quantity is rather small and so chooses easy tasks or chooses not to try at all. The choice was made to score the challenge avoidance and demonstration-seeking statements as different manifestations of a similar goal orientation, so both are representative of a 1 on the goal orientation continuum, while challenge seeking is a 6. The differences between avoidance and demonstration-seeking will be examined in a task-choice item, but for the most part, those items are considered to be representative of the same orientation.

Growth mindedness or incremental and entity theories (GM). Items in this subscale were developed based on some items from the MCITSC and based on items used by Dweck et al. (1995) and Erdley et al. (1997) in their studies. Unlike in the MCITSC, the questions were straight forward and did not include scenarios or questions about characters. Instead of using names of imaginary children, as in the MCITSC, the items resembled those from studies by Dweck and her colleagues where items ask about an impersonal “you” as in “you have a certain personality and it is something that you can't do much about” (Erdley et al., 1997). This decision was made because some of the sixth graders who participated in the pilot study apparently struggled with the length of the item. Since the MSSP sample would include fifth graders, every effort was made to keep the questions as concise as possible. Furthermore, since previous studies have effectively detected differences in children's ability beliefs, it seemed prudent to emulate their design as closely as possible. In keeping the wording simple and clear, the items also stayed true to the construct, avoiding asking about effort or beliefs.

Proxy terms for social ability. As described in the section describing existing instruments, it is difficult for adults to ask children about social ability. Asking about

social skillfulness without also asking about social acceptance and peer group dynamics has proven to be a weakness of previous scales. As this is a current challenge, another purpose of this study is to establish whether children conceptualize several possible terminologies as equivalent. Many nearly identical items will be included that have slight alterations in their terminology regarding social abilities. The three terminologies used will refer to getting along with other kids, making friends, and being liked by other kids.

Task choice. Research has demonstrated that performance and learning goals have implications for the kinds of tasks children choose to undertake in academic and other settings (Stipek & Gralinski, 1996). To see if this relationship between task-choice and goal orientation holds up in reference to social competence, in addition to asking about goals, children will be asked to choose a task on the MSSP. The wording and nature of this choice is based on Elliott and Dweck's (1988) research in which children were asked to choose between an activity that would be difficult, but could offer learning opportunities (called the *learning option*) or an activity where they would complete tasks at a chosen level to either display or avoid display of their ability, without learning anything new (called the *performance option*). This will be a choice presented to the children, but it will be a hypothetical choice.

Practice beliefs and beliefs about existing programs. Finally, because this questionnaire is to be used to inform parents and educators about children's beliefs regarding their potential to improve, it seems logical to ask about potential in different school settings. Items were created asking about whether children feel they have the potential to benefit from existing programs, such as social skill groups and other interventions where skills are practiced and ability is thought by adults to increase.

Participants. A convenience sample of 155 students in the fifth grade were recruited from six schools in four Northern California school districts. The investigator was able to gain entry to the schools and access to the students because of familiarity with the staff or administration. The districts ranged from high achieving to average based on state standards. One district included schools that were very high achieving based on 2008 testing data collected by the California Department of Education; the schools' state rankings were in the top 10 percent of California public school districts (Academic Accountability Team for the California Department of Education, 2008). The population was 68% Caucasian, 19% Asian/Pacific Islander, less than 3% Hispanic, and 2% African-American. Its rate of economically disadvantaged students was less than 1%. The lowest achieving school district included schools that varied in state rankings from the bottom 20% to top 10%. The school at which data were collected was in the 60th percentile. That district had and an economically disadvantaged student rate of 42%. The majority of students (51%) were Hispanic. Twenty-eight percent were Caucasian, 15% Asian/Pacific Islander, and 3% African-American. Although the participants are not a representative sample, they are somewhat racially and socioeconomically diverse and are achieving at a variety of levels.

The rationale for choosing fifth graders is based on the fact that most children begin school with a certain degree of optimism. They are curious, eager to learn and believe anyone can do well at school, learning new material and making good friends. Yet over time, children develop a more accurate sense of their own capabilities (Harter,

1998). By the age of eight years old, students will be more realistic about what they can achieve.

Experience working in school districts and interviews with staff and parents also informed the choice of grade levels. School staff and parents regularly cite fifth grade as a time when children are becoming more aware of their differences, including strengths and weaknesses in different domains. This becomes an especial concern when children are getting singled out for interventions and services above and beyond those intended for the general classroom population. Since a goal for this questionnaire is to provide information to school staff and to parents about children's orientations and beliefs about potential which can in turn inform their conversations with students around the need for interventions, it is believed that a questionnaire appropriate for this age group would be very useful.

Method

Measure. A total of 35 items were created to ask children about each of the constructs or areas of interest described above—Growth mindedness, Goal orientation, Self-efficacy, Stability, Effort—as well as a task choice item and questions about opportunities for practice. The items employed several different terminologies to refer to social skills and competence. For ease of data collection and for potential future research, the items were administered as part of a larger questionnaire that included items addressing similar constructs in another domain. These items were designed by another researcher and will not be addressed here. As such, the students were asked to think about social interactions and reading in the introduction of the project and in the instructions for completing the questionnaire. The entire questionnaire included 69 items.

Within the 35-item MSSP questionnaire addressed in the present analysis, it was hypothesized that a five factor structure would emerge, including factors comprised of items representing each of the five constructs. Twelve Growth mindedness items were included. All 12 items were Likert-type items with six response choices asking the respondents to indicate how much they agreed or disagreed with each statement. The seven Goal orientation items, six Effort items, two Practice items and four Stability items were also Likert-type with six choices where students were asked how much they agreed or disagreed with statements. The four Self-efficacy items appeared toward the end of the questionnaire so that students were well-trained in using Likert-type items. The wording paired with each of the six numbered responses varied with each Self-efficacy item. Finally, the task choice item asked students to select a task to try at another time. There were three choices ranging from an easy to a challenging task.

Higher overall scores on the MSSP were indicative of more mastery-oriented, growth minded beliefs. Respondents with higher scores endorsed items suggesting that effort and practice result in better social outcomes. They see social ability as acquirable and subject to change. They tended to indicate that they believe that social ability is within one's control.

Recruitment procedures. District superintendents and school principals approved the recruitment of the students at their schools. Classroom teachers were approached and asked for their cooperation in this study. Eleven classroom teachers

agreed to participate, permitting the investigator or an assistant to make a 10 minute presentation to the students about the project. Students were informed that the investigator wanted “to know about what kids think about reading and what they think about getting along with other kids” and that the project involved getting permission from parents as well as assent from each student in order to participate. The project was likened to a science experiment and the students were informed that they would be assisting the investigator in her school work. The students were allowed to ask questions before consent forms were distributed for them to take home. The consent form and other study materials were approved by the University Human Subjects Committee. Roughly 300 consent forms were distributed. Consent from parents and guardians was obtained for a total of 155 participants ($\approx 50\%$ of the students solicited).

Administration procedure. Students for whom consent had been received were met in their classrooms by the investigator or the assistant. Participating teachers found it more manageable to have the all of the eligible students complete the questionnaire at the same time, rather than working with the investigator in small groups. The size of groups averaged around 10 students. A standard set of instructions was read to the students, reiterating the goal of the task. Confidentiality was explained and the students were shown how it would be maintained. Students were trained in the use of Likert-type response scales and were given some practice items. Questions about the process and about the items themselves were solicited from students throughout the introduction. Assent forms were distributed and read to the students. Those students who elected to sign and to continue their participation were given a copy of the questionnaire.

Once all initial questions had been answered, students were asked to turn to the first page and to follow along in the questionnaire while each item was read aloud. Participants were asked to respond individually to each question read by circling their responses on their copy of the questionnaire. The investigator moved around the room, checking that students were able to follow along and to respond in this group format. Each question was usually read twice or more. Students often asked for repetition. Students were asked to move through the questionnaire with the group, to insure that they heard each question correctly. The reading of questions to the students was also intended to prevent differences in responding based on reading ability or care. No respondents elected to discontinue participation at any time during the study, despite expressing some fatigue part way through the administration. Completion of the whole questionnaire took approximately 35 minutes.

A small group of students was selected to complete the questionnaire a second time approximately two weeks after the initial administration. This group was selected based on the teachers’ willingness to have students participate again. A total of two classroom teachers agreed to participate, and a total of 29 students completed the questionnaire a second time.

Analyses. Item-level analyses were carried out by examining the item-total (point-biserial) correlation for each test item and the difficulty (p value) of each item. Reliability of scores on the whole scale was computed using Cronbach’s alpha. Test-retest results were analyzed using the Pearson correlation. Exploratory factor analyses

were used to investigate the structure of the MSSP. Correlations between subscales and key items were examined to investigate relationships between variables.

Validity evidence was collected throughout the construction of the items and during subsequent analyses. To examine the internal structure of the MSSP, subscale-level correlations were obtained and exploratory factor analyses were performed. Independent experts also were asked to assign items to factors according to their knowledge of the underlying constructs, and groupings derived from this process were compared with groupings obtained through factor analyses. External validity was examined by a comparison of responses to the scale to those on the self-efficacy items adapted from the SESS.

Results

Descriptive statistics. Descriptive statistics were calculated for each item of the MSSP. Approximately one third of the items were negatively skewed. There was some variation in the types of items that tended to be more skewed, but most of them were items from the Growth Mindedness and Effort subscales. Items that were phrased to represent a more fixed view (labeled *entity* items) seemed to be the most likely to be skewed. Descriptive statistics for each scale of the MSSP are shown in Table 2. As can be seen, participants' mean scores were within the mid-level range (2-4) on the 1-6 scales for three of the scales, GO, S-E, and STAB. Scores on GM, EFF, and PRAC were above the mid-point. These results suggest that most respondents' scores were within the higher ranges, and thus most respondents seem to endorse the idea that social ability is subject to change and can be increased. Respondents seem to endorse the idea that effort leads to improved social outcome. That there is less variety in responding is a potential problem with the measure. This concern is addressed again in relation to results from additional analyses discussed in subsequent sections. Internal consistency estimates (Cronbach's α) for the GM and EFF scales were in the medium to high range ($\alpha > .70$). These results indicate that the GM and EFF items are contributing meaningful information. Internal consistency estimates for the other scales (S-E, GO, STAB, and PRAC) were below the acceptable level of .60

Subscale intercorrelations, shown in Table 3, are low with the exception of the correlation between the EFF and GO scales ($\alpha = .74$). This correlation is expected given that these scales are theoretically very similar. It is surprising however, that the other intercorrelations were not higher.

Content validity. Several types of validity evidence were collected throughout the items design process. First, evidence based on the instrument's content was documented during the items design phase. This was done per the standards set forth by the American Psychological Association, the American Education Research Association, and the National Council for Measurement in Education (as cited in Wilson, 2005) stating that the compilation of evidence based on an instrument's content should include an "analysis of the relationships between a test's content and the construct it is supposed to measure." The description of the construct, of the items design and content, and description of how these would be scored serves as validity evidence and is described in subsequent sections.

Four experts in the fields of motivation and psychology were asked to

Table 2

Descriptive statistics of MSSP scales

Scale	<i>M</i>	<i>SD</i>	α
GM	4.61	.7	.79
GO	3.53	.81	.53
S-E	4.09	.9	.42
STAB	3.62	.65	.09
EFF	4.89	.17	.81
PRAC	4.63	.67	.19

n=155

Note: GM, Growthmindedness; GO, Goal orientation; S-E, Self-efficacy; STAB, Stability; EFF, Efficacy; PRAC, Practice

Table 3
Intercorrelations among MSSP scale scores

	GM	GO	S-E	STAB	EFF	PRAC
GM		0.27	0.38	0.35	0.74	0.49
GO	0.27		0.27	0.15	0.32	0.08
S-E	0.38	0.27		-0.04	0.42	0.1
STAB	0.35	0.15	-0.04		0.25	0.2
EFF	0.74	0.32	0.42	0.25		0.39
PRAC	0.49	0.08	0.1	0.2	0.39	

Note: GM, Growthmindedness; GO, Goal orientation; S-E, Self-efficacy; STAB, Stability; EFF, Efficacy; PRAC, Practice

independently assign items to one of the six subscales the items were intended to represent. The raters, graduate students and one assistant professor, had no prior knowledge of how the items had been constructed. There was 100% agreement for 16 of the 35 items. Overall, 26 (or 74%) of the items had 75% or higher agreement among the raters that the items represented the proposed constructs. The raters disagreed about the remaining nine items, with raters disagreeing most often about whether items represented the growth-minded or the effort constructs especially. For an example of an item that caused some confusion, consider the item that reads: “No matter how hard you try, you can’t really get better at being a good friend.” This item was written to elicit information about whether effort can lead to improved performance. It is subtly different from a growth mindedness item because it alludes to a strategy of trying hard that would not be addressed in a question about whether ability can be increased. A growth-mindedness item would only include the second half of the item, asking whether or not one can get better at being a good friend.

Not surprisingly, several of the items upon which the inter-rater agreement was low did not correlate highly with other items within their subscales or with the factor on which they loaded. These were some of the items that were examined more closely in the items analyses and were many of the items dropped from the factor analyses.

Item level analyses. Item discrimination and item difficulty analyses were used to examine the how participants responded to items. To examine item difficulty, p -values for each item were computed. The proportion of examinees who answer a question correctly (or p -value) is typically used in ability testing to indicate an item’s difficulty, but in this case, it is indicative of the respondent’s agreement with the unstable, incremental orientation where effort is thought to lead to improved ability. To obtain p -values, the responses were collapsed from the 6 point Likert-type scale into dichotomous responses reflecting whether the respondents agreed or disagreed with statements overall. This was done by splitting the responses into categories of 1-3 and 4-6. The p -values obtained for the 35 items were examined and found to be on the higher end in general instead of within the .50 range. This indicates that the items were not eliciting equal numbers of responses across the range of possible responses. Since most of the p -values were .60 and above ($M = .7$), it can be said that a majority of students was endorsing most statements.

Not surprisingly, the items with higher p -values were those where the distribution of responses were negatively skewed. The higher p -values can be interpreted to indicate one of two things. The first possibility is that the majority of respondents tend to have more growth-minded orientations. The other interpretation would be that the items were not differentiating among the respondents very well. Eight mid-level scores were obtained, suggesting that these items elicit relatively even numbers of endorsements and disagreements.

The point-biserial correlation between each item and the total score on the measure was obtained. In general, a low point-biserial value implies that students who endorsed that item highly did not tend to endorse similar items on the entire measure highly. There were 15 items for which the item-total correlation was low or non-significant. These were noted so that during factor analysis and reliability analyses, these

items could be examined carefully to see if they appeared to be contributing any meaningful information and loading with other items on appropriate factors. Nine items were dropped after subsequent analyses because the item-total correlation was non-significant and because they were not correlated highly with the factors that emerged.

Reliability. Two reliability coefficients were obtained. These include the *Split half* and *Test-retest*.

Split-half reliability. A split half reliability coefficient was obtained for the twenty-two items that were included in the final analyses. Cronbach's α for these items was .88 suggesting that the MSSP is a reliable measure. Cronbach's α for factor 1 (positively-worded) was .86. The bivariate correlations for each of the two composites obtained through factor analysis were not as high, suggesting that each of the two-item composites could be more reliable. For the GO composite, the correlation was .46. For the S-E composite, the bivariate correlation was .34.

Test-retest reliability. The coefficient of reliability for the first and second administrations of the MSSP was 0.74, suggesting that it is moderately reliable after two weeks. It should be noted that the sample that participated in this re-test was fairly small ($n=31$). Furthermore, the sample was not representative of the entire first administration sample. Rather, the re-test sample was a convenience sample taken from one school. Given these limitations, it is possible that the reliability could actually be higher, but this would need to be tested on a larger sample.

Structural Validity.

Item-subscale correlations. Analyses were carried out in order to test the hypothesis that a five-factor structure would emerge from among the 35 variables. The five factors were expected to represent the Growth mindedness, Goals Orientation, Effort, Self-Efficacy, and Stability subscales. Table 4 shows the means, standard deviations, and internal consistency estimates (Cronbach's α) for the MPSS subscales GM, GO, S-E, EFF, and STAB after omitting items that were not correlating highly with the other items in the scale. As can be seen in the table, the items correlated reasonably well for four of the subscales with alpha ranging from 0.42 to 0.81. One of the subscales, Stability ($x = 4$), appeared to be functioning poorly in that the alpha was quite low (0.09). Upon further inspection, several of the items within that subscale also had low item-total correlations. Based on these analyses, it seemed reasonable to conclude that the Stability items were not functioning well as a subscale, and many were not functioning well individually. It was decided to consider those items individually and potentially as part of another factor depending on results of factor analyses of the whole scale.

From the table, it can also be seen that EFF and GM subscales have the higher internal consistency estimates. These seem to be the strongest of the scales. It can be seen in Table 4 that the participants' mean scores are within the higher end of the medium range of responses (3-4) for response choices numbering from 1 to 6. As was noted earlier based on examination of the frequencies for each item, the MSSP items did not appear to be eliciting a wide array of responses, and in general seem to be negatively skewed.

Table 4

Means, standard deviations, and reliability coefficients for the MSSP subscales with poorly fitting items omitted

Subscale	<i>M</i>	<i>SD</i>	<i>α</i>
GM	4.61	.32	.79
EFF	4.89	.17	.81
GO	3.53	.57	.54
S.E.	4.09	.70	.42
STAB	3.63	.66	.09

Note: GM, Growth Mindedness; EFF, Effort; GO, Goals orientation; S.E., Self-efficacy; STAB, Stability beliefs.

n = 155

Within the Growth-mindedness (GM, $x = 10$), Goals (GO, $x = 6$), Effort (EFF, $x = 7$), and Self-Efficacy (S-E, $x = 4$) subscales, individual items that were not highly correlated with the rest were examined more carefully. Several of these were items that had been flagged in the previous analyses because of insignificant or low point-biserial values. It became clear when reviewing these items that something about the wording was confusing to respondents or was misleading them so that they were not responding to these as would be expected given response patterns on similar items. These items were not included in subsequent analyses because of concerns about their reliability.

Factor analysis Exploratory factor analyses (principal axis extraction) were used to further examine the structure of the MSSP and to evaluate whether theoretical assumptions were upheld. Specifically, each subscale was analyzed to verify the assertion that each subscale truly represented one single construct. The measure was analyzed as a whole, using exploratory factor analysis, to try to gather further evidence for the subscale structure of the MSSP.

Gorsuch (1997) explains the benefits of using factor analysis to establish the presence of meaningful constructs in an instrument based on analysis of the items that make up that instrument. Gorsuch suggests that instead of basing item-groupings solely on the investigator's judgment, in factor analysis, factors are determined based on a set of highly correlated items. In addition to reducing the possibility of misjudgments about what items measure, factor analysis allows for new constructs to emerge. These may be variations of the original constructs that were proposed. This was the case when Kaufman discovered the *freedom from distractibility* factor on the Wechsler Intelligence Scale for Children-Revised (as cited in Floyd & Widaman, 1995). Additionally, factor analysis would pick up contaminants that could otherwise go unnoticed.

The choice to use exploratory factor analysis was further influenced by Gorsuch's (1997) assertion that confirmatory structural model analyses fail to provide "clear results" if the investigator's hypotheses and data are not perfect. When problems arise, including inter-factor correlations that are too high, Gorsuch asserts that investigators often make exploratory "adjustments" to the structural equations model. These can result in inaccurate probabilities. These types of adjustments have worse effects on smaller sample sizes (1997). Gorsuch states that exploratory factor analysis is actually something of a misnomer, as it is a confirmatory process. It is a multi-tailed test, whereas confirmatory factor analysis is a one-tailed test. Also, the same factors that would appear in exploratory factor analysis would appear in a confirmatory factor analysis, but as opposed to in confirmatory factor analysis, in exploratory factor analysis there is a way to test if a particular factor is replicated. The correlations between each exploratory factor found in each exploratory factor analysis can be calculated, tested for significance, and interpreted. Furthermore, since this is a new instrument, there is no previously empirically tested structure that can be supposed to be confirmed in this analysis.

For each of the four hypothesized subscales (GM, GO, EFF, and S-E) Bartlett's test of sphericity was significant. However, for several of the subscales, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was fairly low, indicating that factor analysis should not be used because the partial correlations between pairs of items are too large. For those subscales where the KMO was above 0.6 (GM and EFF), an exploratory

factor analysis was carried out by means of principal axis factoring. The Self-Efficacy and Goals subscales were not factorable. For the both the Growth Mindedness and Effort subscales, an unrotated solution suggested a single factor based on the scree plot and a single eigenvalue greater than one. Thus, the theoretically-based grouping of those items was supported by the factor analyses.

A total pool of 22 items were seen to be functioning reliably and to be adequately representing students' true beliefs, as indicated by significant point-biserial correlations and reasonable internal consistency estimates. These 22 items were included in the whole-scale factor analysis. Items from each of the constructs were included in the analyses of the 22 items seen to make up the instrument as a whole, because it was hypothesized that these could still be useful in measuring children's beliefs about social potential as free-standing items, or as parts of composites.

Bartlett's test of sphericity was significant $\chi^2(231, N = 155) = 1104, p < .000$, and the Kaiser-Meyer-Olkin measure of sampling adequacy was .83, indicating that the correlation matrix of the MSSP scores was factorable. Communalities scores were in the moderate range (see Table 5) with a median value of .45. Recommendations for sample size relative to the number of factors and communality values vary. Some suggest that with the range of communalities being within the .5 range and a reasonable factor-to-item ratio of 5:1, a sample size of 100 is adequate (MacCallum, Widaman, Zhang, & Hong, 1999). However, Fabrigar, Wegener, MacCallum, and Strahan (1999) suggest that a sample of 200 would be advisable. In any case, it seems that the sample size of 155 is within the appropriate range.

Exploratory factor analysis (principal axis factoring) was done. Because the constructs were expected to be correlated with one another, an oblique rotation was used but both oblique and orthogonal rotations were examined per the recommendation set forth by Floyd and Widaman (1995). The number of factors to extract was set at four because items from the four factors (S-E, GO, GM, and EFF) were included in the analyses. The eigenvalue rule suggested six factors, but the scree test, parallel analysis (Watkins, 2000), and the theory suggested fewer. The four-factor structure was examined first. As suggested by Tabachnick and Fidell (as cited in Gardner-Kitt & Worrell, 2007) a floor of .40 was used to determine whether items were correlated highly enough with the factor. Results of the oblique and orthogonal rotations were similar, but since a relationship between the GM and EFF scores was expected, the oblique rotation was retained. Results of the Promax rotation are shown in Table 5. As can be seen, all the items loaded onto one of four factors, at or above the .4 level, however the factor loadings were not exactly as expected. Instead, the EFF and GM items were fairly evenly split between two factors. The two S-E items loaded together and the two GO items loaded together.

The GM and EFF items loaded onto each of the two major factors according to how the items were worded. Positive phrased items such as the GM item: "You can always get better at making friends" generally loaded with positively phrased EFF items such as: "If you work hard at being a good friend, you can get better at it." These could overall, be described as positively-worded items, so factor one was labeled: *positively-worded*. Items from the GM and EFF subscales that were negatively worded and

Table 5

Structure Coefficients (principal axis extraction/Promax rotation) of MSSP scores (N=149)

	Factor 1 Incremental	Factor 2 Entity	Factor 3 Performance composite	Factor 4 Self-efficacy composite	h^2
53S_Eff7_53	0.82	0.36	0.29	0.06	0.67
35S_Eff3_35	0.74	0.46	0.54	0.01	0.71
52S_Inc7_52	0.72	0.44	0.20	0.01	0.61
34S_Eff2_34	0.72	0.38	0.57	0.09	0.67
26S_Inc3_26	0.71	0.42	0.38	0.05	0.58
18S_Inc2_18	0.66	0.39	0.18	-0.10	0.52
33S_Inc5_33	0.65	0.33	0.38	0.10	0.48
58S_SE2_58	0.49	0.38	0.28	0.02	0.34
14S_Inc1_14	0.46	0.36	0.14	-0.09	0.36
45S_Eff4_45	0.43	0.28	0.26	0.18	0.30
8S_Ent2_8	0.31	0.69	0.27	0.03	0.44
31S_Ent5_31	0.31	0.69	0.16	0.11	0.45
49S_Eff5neg_49	0.42	0.64	0.37	0.20	0.56
20S_Eff1_20	0.54	0.63	0.36	0.03	0.54
30S_Ent4_30	0.42	0.60	0.48	0.06	0.46
51S_Eff6_51	0.51	0.56	0.39	0.20	0.45
55S_SE1_55	0.46	0.50	0.28	0.04	0.43
1S_Ent1_1	0.37	0.41	0.21	-0.07	0.34
47S_Perf5_47	0.31	0.37	0.70	0.12	0.44
43S_Perf4_43	0.25	0.19	0.65	0.17	0.35
60S_SE3_60	0.05	0.08	0.14	0.97	0.35
62S_SE4_62	0.06	0.13	0.19	0.43	0.30
Eigenvalues	6.98	1.86	1.60	1.26	
% Variance	31.70	8.50	7.30	5.80	
construct α	0.86	0.80	0.46	0.34	

subsequently reverse coded loaded on the second factor. The GM item: “If you’re not getting along with other kids, you can’t do much to change it” is an example of these types of items. Factor two was labeled: *negatively-worded*. It appears that the separation of these items into two factors is an artifact of the wording. It also appears that the way the item is phrased overwhelms the difference between GM and EFF items. Respondents seemed to think of these items as assessing the same beliefs. Overall, it seems appropriate to think of the MSSP as composed of one factor comprised of EFF and GM items, and two *composites* made up of two items each from the S-E and the GO subscales. Clearly factor analysis did not support the hypothesis that the MSSP would be composed of five subscales. It did lend some support to the idea that EFF and GM items could be combined to assess social potential beliefs in general, by asking about the potential for effort and other strategies to lead to change in ability.

Total scores were obtained for each respondent on the positively-worded factor (Factor 1) for the negatively-worded factor (Factor 2), and for both of the composites (Composite 1=GO and Composite 2=S-E). Means and standard deviations for these factors and composites can be seen in Table 6. As the table indicates, students’ scores on the incremental factor tend to be slightly higher. This suggests that students are more extreme in their endorsement of these positively phrased items. Distributions of scores on these items tend to be slightly more skewed than negatively-worded items. There were no differences seen in the way items were loading onto factors based on the terminology for social ability used. Therefore, it seems reasonable to conclude that respondents did not differentiate between the three new terminologies employed: making and keeping friends, getting along with others, and being a good friend. This is an important conclusion as satisfactory terms have not been found in the past.

To investigate the relationship between ability beliefs and the belief in the potential for social skills interventions to be useful, students’ scores on the incremental factor were compared to their responses on the practice item that was seen to be reliably functioning. The correlation was small but significant $r_s=.32$, p (one tailed) $< .001$.

External validity. The total score on the positively-worded Factor 1 was used to examine whether there was a relationship between respondents’ mean scores on the MSSP items and their scores on the S-E composite. Because the S-E items were adapted from the SSES, it was hypothesized that there would be a moderate correlation, however the two scores were not found to be significantly correlated. This lack of a relationship could be due to several factors, the first of which could be that no relationship exists. Other explanations could be that in adapting the SSES items for use with children, they were altered too much from their original form and no longer adequately elicited information about social self-efficacy. Throughout the items-level analyses it became clear that many of the S-E items were functioning poorly and were dropped from final analyses, leaving only two items in the composite. Since this was a small number of items, it is possible that a significant correlation could be found in subsequent analyses when a larger number of reliable and discriminating items are designed and analyzed. The total score on the GO composite was used to examine whether there was a relationship between respondents’ mean scores on the goals items and their choice of

Table 6

Correlation coefficients, means, and standard deviations for two factors and two composites

	α	M	SD
Factor 1	.86	4.84	.28
Factor 2	.80	4.68	.34
	Pearson correlation	M	SD
Composite 1	.46	3.41	1.48
Composite 2	.34	3.30	1.54

tasks in the task-choice condition. One-way ANOVA was used to compare the means. Results indicated that there was not a significant effect of goal orientation on task-choice $F(3,123) = .713, p > .05$. Since the GO composite only included two items, it is possible that the apparent lack of a significant relationship is due to insufficient data. In subsequent versions of the MSSP, additional goal orientation items would be included and ideally, more external validity evidence could be gathered.

CHAPTER 4

General Discussion

Review of Study 1: the MCITSC

In this dissertation, two studies were presented. In the first study, the MCITSC was examined. In this study, evidence for MCITSC scores' content validity and discriminant validity was gathered and found to be adequate. Reliability evidence was mixed, with internal consistency being satisfactory, but test-retest suggested that scores were more variable over time than is expected. Unsatisfactory consistency over time could have been due to children at that age not having differentiated views about the malleability of ability. Alternatively, social desirability may have influenced responding. Yet another source of inconsistency could be due to features of the items themselves, as item fit statistics indicated that some items elicited widely variable responses. Finally, the small number of respondents is an important potential source of reliability problems. For this reason, the second study would include a much larger sample size.

Weaknesses in the items themselves were also seen in the first study. One such problem was that respondents' attitudes were not also clearly discernable based on responses to items. This problem was addressed in designing items for the second study. Also addressed were diction issues that students seemed to struggle with whether because of the complexity or the sensitive nature of the language.

The final limitation of the MCITSC was that it measured a single construct. In the second study, the MSSP was examined with a sample of fifth grade students. Some items evolved from earlier ones tested in the MCITSC, and many new items were added in order to represent additional constructs. Lessons from the MCITSC pilot lead to changes in language and in response options and items structure. A set of research questions was set forth, again informed in part by results of the pilot study.

Review of Study 2: the MSSP

The question of whether the MSSP would reliably measure children's beliefs about the potential to increase one's social competencies and abilities was answered in Study 2. Based on internal consistency information and consistency across administrations, it appears that the MSSP scores are reliable. Questions about the validity of scores were not answered unequivocally. Content, structural, and external validity evidence was reviewed, with some evidence pointing to the need for additional analysis. Some validity evidence, including the ratings of independent experts and the reliability of the responses suggests that this measure was able to show that children have definite ideas and opinions about the nature of social capabilities. It appears that the scores obtained were valid for examining beliefs about potential and doing so consistently. What the findings suggest though, is that this sample of fifth grade students tends to overwhelmingly endorse statements suggesting that all children can increase their social skills and that they can do this through their own efforts. They are also very likely to disagree with assertions that nothing can be done to change one's social ability. Since Entity items did slightly better at eliciting variety in responding than did

incremental items, in future versions of this measure, questions about effort and growth mindedness will only be phrased in the negative.

Through factor analysis, one core group of items was found to be theoretically related and responses were reasonably highly correlated. Responses to the items in this factor (Factor 1) were consistent. It could be the case that this set of items in Factor 1, are complimentary and representative of a new construct that is an amalgam of existing theories of motivation; together these items might be said to represent children's beliefs about the potential to increase ability and improve skills. Additional research will be necessary to assess whether this finding could be replicated with a different sample of students.

Evidence for the measure's relation to other instruments was very weak. One potential explanation for the lack of a relationship between the MSSP and the adapted Social Self-Efficacy Scale could be due to the fact that the SSES items were adapted from their original form and because the items were administered to children. Comparison between the MSSP and another instrument would likely provide additional information about whether the MSSP results are correlated with those of existing measures. Again, additional research is warranted here. Finally, the question about whether different terminologies for social capabilities would influence responding was examined. No differences were seen based on the different terminologies, therefore it appears that the terms: making friends, getting along with others, and being a good friend may be used interchangeably in future instruments.

Limitations. The sample for this administration was not optimal in that it was somewhat small (N=155). It was not representative of a national sample of children in terms of socioeconomic status, race and ethnicity, or geographical location. Additional research should be conducted with an expanded pool of items on a larger and more representative sample of students.

The format for this administration was designed out of convenience in order to maximize the number of participants. It had many limitations; the first of which was the large number of students present for each administration. It was obvious that the children required different amounts of time to read and to comprehend the items. Some were quite fast and others much slower. Although every effort was made to attend to each and every student throughout the administration, it was necessary to move more slowly for some students, offering repetition of items frequently. Even with this slower pace, some students seemed rushed from time to time. Other students became bored with the repetition and were seen to try to move through the items on their own. This is a concern, because there are so many articles on which the entire meaning of the item rests, that could be overlooked when reading quickly. For instance skipping the word "not" could reverse the entire sense of the item. To this end, it would be preferable to administer the MSSP to a very small group or to individuals in the future.

Another drawback to the format was the combination of MSSP items with those from a separate, but related instrument. This lengthened the administration time and could potentially have affected response styles. For instance, because the items from the other instrument were related, they might have influenced students' responding on the MSSP. Students may have made efforts to be consistent instead of answering items as if

they were independent of each other. Relatedly, if the MSSP were administered by itself, the length could be extended. In its current form, the limited number of MSSP items was a limitation. In the future it will be essential to increase the ratio of items to subscales. It is possible that with more items, the constructs will be more readily extracted in factor analysis.

Conclusions and Future Directions

Overall, the MSSP can be seen to be an improvement on its predecessor, the MCTISC, in that it measures a wider and more complete set of constructs. Its scores are also more reliable and it can be administered more easily. Satisfactory terms for social competencies and skills were established so that henceforth, ambiguous terms will no longer need to be used in research in this domain. The MSSP malleability and effort items asked students to ponder whether, with effort, one can get better at being a good friend. Based on the results of this study, it seems fair to conclude that most children will endorse this idea when it pertains to people in general. In a revision of the MSSP, it may be more informative to ask about each child's own potential for improvement. It is possible that the students will have different, and perhaps less universally incremental views, if asked to speculate about their own potential for improvement. Care will have to be taken to ensure that students feel comfortable and are motivated to be honest about deeply personal items of this kind, to minimize the effect of emotions on responses. Administration to a smaller group of students where the pace could be tailored to students' needs more closely might allow investigators to talk more with students throughout the administration, helping to reduce negative emotions and potentially also reducing the effects of reading difficulties students may have.

It will be important in the next version of the instrument to establish some evidence of its relation to other variables and to expand the number of items in order to effectively measure more of the constructs. Another measure of a related construct should be used that would not have to be adapted in order to be used with children. If a relationship is still not found, then the reasons for that can more confidently be surmised to be due to something about the MSSP.

With these kinds of amendments, a revised MSSP has the potential to be a psychometrically sound measure of children's social competence-related beliefs. Such a measure would be most useful in the design and improvement of social skills interventions where problem-solving, goals, and beliefs about the utility of practice and training are addressed. These kinds of interventions could become more effective and more prevalent as a result.

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Appendix A

MCITSC Survey About Friendships

1. If there were a third grader at your school who did not seem to fit in, even though he'd been there for a long time, do you think he could learn to do some things differently so he would be more of a person other kids wanted to be friends with ?

- a) Yes
- b) Maybe
- c) Probably no
- d) No

Why do you think that? _____

2. In uncertain times, I usually expect the best. (LOT-R)

- a) True
- b) False

3. Jim was talking to Damon, a new kid at school, for the first time and Damon started talking about something Jim thought was boring. Jim tried to tell Damon that he did not know anything about the TV show Damon had seen and he even tried looking away to show Damon he was not interested. Damon just kept talking to Jim. What might be true about Damon:

- a) He is not very good at making new friends, and he probably will have a hard time making friends at school.
- b) He is not very good at making friends, but he might get better if he learns to talk about more interesting things.
- c) He has not figured out something to talk about with Jim, but he might find something if he keeps trying.
- d) He and Jim are a bad match, and were not meant to be friends.

4. Some kids are just naturally friendly, because they cooperate and share and help other kids out. It is not something a kid can really learn, it's just part of the way they are. Do you think this is...

- a) True
- b) Maybe true
- c) Maybe false
- d) False

5. Overall, I expect more good things to happen to me than bad. (LOT-R)

- a) True
- b) False

6. Kimi, a fifth grader, said: "Some kids are just rude and mean and they can't really change that about themselves." Do you think Kimi is

- a) Right
- b) Wrong
- c) Not sure

7. If something can go wrong for me, it will. (LOT-R)

- a) True
- b) False

8. A sixth grader at recess said: "sometimes certain kids are nice, friendly and want to be friends with other kids, but other kids don't want to be friends with them. Some kids are just not going to be able to make friends even if they try." Do you

Agree Agree a little Disagree a little Disagree

Why? _____

9. I'm always optimistic about my future. (LOT-R)

a) True

b) False

10. If you heard Charlie say: “You can learn to do some things better, but how good you get depends on how much skill you were born with. Like, if a kid was someone other kids did not want to be friends with, but then they changed some ways they acted and did things, they could get better but they could never get to be as good at making friends as some kids. Would you say Charlie is:

Right

Mostly right

Mostly Wrong

Wrong

11. Anthony is someone who other kids think is really good at making friends. He talks with everyone and always is helpful, cooperative and supportive of others. Mario, one of Anthony’s friends decides he would like to be friendly like Anthony. Do you think Mario could learn to be someone other kids want to be friends with?

YES

NO

Why or Why not?

12. I rarely count on good things happening to me.

(LOT-R)

a) True

b) False

13. Chris tells his mom about his friend Jarrett whom he says makes friends really easily. His mom asks what he does and Chris says Jarrett was just born that way. Do you think Chris is right?

a) Yes

b) Mostly yes

c) Mostly no

d) No

14. Celina is a fifth grader who tells her teacher that everyone would be a good friend to others if they wanted to be. Do you agree with her?

YES NO

Why or why not?

15. A sixth grader named Marco told his teacher that sometimes trying hard isn't enough, some kids just won't be good at being friends with other kids, no matter how hard they try. Please circle whether you

Agree Maybe Agree Probably Disagree Disagree Don't Know

16. A new student, Jeff, came to a fourth grade class and his tries at making friends didn't work. Some of the kids in the class tell the teacher that they think Jeff is someone who is not good at making friends. Three kids tell the teacher three different ideas about Jeff. Which do you agree with:

- a) Jeff does not make friends easily, but if another kid helped him talk to other kids, he could get better.
- b) Jeff does not make friends easily, but that is because he has not really been trying hard enough. If he tries hard, he can become just as friendly as anyone else.
- c) Jeff does not make friends easily, and that has something to do with the way he is. It would not change easily.

17. I hardly ever expect things to go my way. (LOT-R)

a) True

b) False

18. When is it too late for a person to become someone that other people want to be friends with?

- a) after age 6
- b) after age 8
- c) after age 10

- d) after age 16
- e) after age 20 or maybe later
- f) I don't think it gets too late

19. A sixth grade teacher wants to know if he should do some lessons for his class on how to be helpful and supportive of each other because he has noticed that some kids don't seem to have many friends. He wants to know if kids think this would help. What would you tell him?

20. Kelly, a seventh grader said "Kids can learn a lot of things, but how to make friends is not one of them." Do you think Kelly is...

- a) Right
- b) Kind of right
- c) A little wrong
- d) Wrong

21. Sam tells his friend: "I think that if two kids are equally good at making friends and being friends with others, but one tries harder to learn some ways to be even better, then the one who tries harder will end up being better in the end." Circle whether you:

Agree Mostly Agree Half Agree and Half Disagree Mostly Disagree Disagree

22. If you heard Malia tell you that she thinks only the only way a kid could not have any friends would be if that kid didn't try at all to be friends with other kids. Circle whether you think Malia is

RIGHT or WRONG?

Please explain _____

23. Willy and Krissy were talking in class. Willy said: "I think that how good a person is at making friends depends partly on how much ability they have and partly on how hard they try. It half depends on ability and half on trying." Is Willy

Right Partly right Partly wrong Wrong Not sure

24. A fifth grader, Jaime, said that all kids can get better at making friends, but kids who are born being good at making friends are usually the best at it. What do you think?

25. Becky told her brother: “there are some kids that others don’t want to be friends with. There’s just something about those kids, and even if they try, they just won’t able to make friends.” Do you think that

- a) Becky is right, some kids just are not able to make friends
- b) Becky is partly right, it is harder for some kids to make friends, but it’s not impossible
- c) Becky is partly right, some kids have to try harder to make friends, but they can end up having lots of them
- d) Becky is partly wrong, because a kid can learn some ways to be someone other kids want to be friends with
- e) Becky is wrong, because whether or not you are someone others want to be friends with depends on how hard you try to be that way.

26. Bobbie, a seventh grader, told his friend: “some kids just don’t know how to talk to other kids about interesting things at recess. They might try to learn how, but I don’t think that would help. You can’t really learn that stuff.” Do you think Bobbie is:

Right Partly right Partly wrong Wrong Not sure

27. Rosalia was talking with her sister. She told her that some kids are really nice, but they still don’t have any friends on the playground. Her sister said that there are some kids who are just bad at making friends. It’s not something they can really change about themselves. Do you agree with Rosalia and her sister?

- a) Yes
- b) Yes, a little
- c) No, not completely
- d) No

Appendix B

MSSP STUDENT QUESTIONNAIRE

1. If you're not getting along with other kids, you can't do much to change it.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

2. I want other kids to think I'm having fun at recess.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

3. If you changed schools, you would probably make about the same number of friends as you have now.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

4. You can learn a lot of things in school, but you can't really change how well you get along with other kids.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

5. If someone isn't very good at making friends, they're probably going to stay that way.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

6. If you don't get along well with others, you can always learn to get along better.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

7. Practicing ways to be a good friend can help you be a better friend.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

8. You can always learn how to get better at making friends.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

9. You can't really get better at making friends, even if you try hard.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

10. I want other kids to think I'm good at getting along with kids.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

11. It's impossible for some kids to make friends.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

12. You can always get better at making friends.

1	2	3	4	5	6
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Strongly Disagree Disagree Disagree a little Agree a little Agree Strongly Agree

13. You can always do something about how much other kids like you.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

14. It's better to just play by yourself than to have other kids say you can't play with them.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

15. Either you are good at making friends or you aren't and there's not much you can do to change that.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

16. How much other kids like you is something about you that you can't really change.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

17. Kids who only have a few friends can learn to make lots of new friends.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

18. If you're not good at getting along with other kids, you can try hard and can get better at it.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

19. If you try hard, you can get better at making friends.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

20. In Middle School I will be about as good as I am now at making friends.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

21. When kids grow up, they get better at getting along.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

22. Going to a play group with other kids and a teacher can help you learn to get along better with other kids.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

23. If getting along with someone is hard at first, it's worth trying to get along with them anyway.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

24. I'd like to show other kids that I have plenty of friends.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

25. It would be OK if I didn't make friends with someone right away as long as I tried to make friends.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

26. When you change schools, you can get better at getting along with other kids.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

27. I'd rather talk to kids I already know than try to talk to new kids who might not like me.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

28. No matter how hard you try, you can't really get better at being a good friend.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

29. If you're not good at getting along with other kids, trying hard won't make you better at it.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

30. You can always improve how well you get along with other kids.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

31. If you work hard at being a good friend, you can get better at it.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

OK, now that you're experts at circling the answer that shows what you think, we're going to try some with different types of answers. For example, a question might ask if the sentence sounds a lot like you, very different from you, or somewhere in between. Please ask if you are confused about the question.

32. One reason some people have a hard time making friends is because they don't believe they have what it takes to do a good job. Do you think that you have what it takes to be friends with other kids?

1	2	3	4	5	6
No, I don't		I sort of do			Yes, I do

33. Is it possible for you to make friends even if you have some trouble being a good friend?

1	2	3	4	5	6
Not possible		sort of possible			very possible

34. Thoughts and worries sometimes get in the way when I try to talk and play with other kids.

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

35. How much do you think that any trouble you may have making friends will bother you when playing with kids?

1	2	3	4	5	6
Strongly Disagree	Disagree	Disagree a little	Agree a little	Agree	Strongly Agree

36. *In a few weeks, I may come back and ask you to do something with me again. You can have a choice now about that. Look at these three boxes:*

- 1)** In box 1 there is a friendship activity. Although you won't learn any new things, it will really show how good you are at making friends.
- 2)** In box 2 there is a friendship activity that's really easy. You probably won't make many mistakes if you choose it.
- 3)** In box 3 there is a friendship activity where if you do it you will probably learn a lot of things about being a good friend, but you'll probably make a lot of mistakes, get a little confused, and maybe even feel like you're not good at being friends with other kids, but eventually you'll learn some useful things.

We don't have time to do any of the activities today, but if you could choose one, which would you choose? Circle your choice.

Box 1

Box 2

Box 3