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Common Dimensions of Social Skills of Children and Adolescents: A Review and Analysis of the Literature

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COMMON DIMENSIONS OF SOCIAL SKILLS OF CHILDREN AND

ADOLESCENTS: A REVIEW AND ANALYSIS OF THE LITERATURE

by

Paul Caldarella

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of

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ABSTRACT

Common Dimensions of Social Skills of Children and

Adolescents: A Review and Analysis of the Literature

by

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Utah State University, 1995

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Previous research in the area of social skills of children and adolescents has

resulted in confusion over the number and name of empirically derived dimensions.

While much work has been done to derive empirically based taxonomies of child and

adolescent problem behaviors, such is not the case for positive social behaviors. The

present study conducted an extensive review, analysis, and synthesis of over two

decades of factor analytic research on child and adolescent social skills to derive an

empirically based taxonomy.

Results suggest five dimensions that occurred in over one third of the studies:

Peer Relations, Self-Management, Academic, Cooperation, and Assertion. The most

common social skills associated with these dimensions are presented. It is advised

that clinicians and researchers begin employing this taxonomy to: (a) provide a

nomenclature by which to refer to the five positive social skill patterns, (b) identify

dimensions on which children or adolescents may have deficits, (c) design

interventions to increase the occurrence of these skills, all of which have been

empirically related to important social outcomes, (d) measure the effects of

interventions, and (e) aid in theory development.

(103 pages)

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<div style="text-align: right">Paul Caldarella</div>

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CHAPTER I

INTRODUCTION

Problem

Social skills have been identified as specific positive interpersonal behaviors that lead to desirable social outcomes (Young & West, 1984). These skills are particularly important with children and adolescents where skill development has been shown to be associated with positive peer relationships (Asher & Taylor, 1981) and academic success (Walker & Hops, 1976). Inadequate social skill development has been associated with the development of antisocial behaviors (Dodge, Coie, & Brakke, 1982), juvenile delinquency (Loeber, 1985), conduct-related discharges from the military (Roff, Sells, & Golden, 1972), mental health and adjustment problems later in life (Cowen, Pederson, Babigan, Izzo, & Trost, 1973; Hartup, 1992), and alcoholism (Chiauzzi, 1991).

As research has accumulated on the importance of early social skill development, so have the assessment methods designed to measure these skills. Merrell (1994a) has pointed out that there are at least five different methods for assessing the social skills of youth: direct behavioral observation, interviews, sociometric approaches, behavior rating scales, and self-reports. Within each of these methods there are numerous instruments or procedures that have been developed to measure the various aspects of social skills.

A behavioral dimensions approach to the study and classification of children's problem behavior is well developed (Quay, 1986) and has begun to be applied to

children's social skills. Researchers who endorse a quantitative view of human behavior have supported such an approach since it uses statistical techniques, such as factor analysis and cluster analysis, to identify behaviors that occur together. Dimensions of children's problem behavior have been identified, such as internalizing and externalizing disorders, which have greatly aided researchers and clinicians in identification, diagnosis, and intervention efforts (Cicchetti & Toth, 1991).

Such developments have not gone unnoticed by social skills researchers. Over the past quarter century research in this area has grown, yet the number of empirically derived social skill dimensions has yet to be agreed upon. This has resulted in some confusion with anywhere from one (Spence & Liddle, 1990) to six (Stumme, Gresham, & Scott, 1983) dimensions being reported.

The importance of determining the common dimensions of social skills for children and adolescents should not be underestimated. Walker, McConnell, and Clarke (1985) identified two major dimensions of social adaptation children must make when entering school: peer-related and school-related adjustment. Promising work is currently under way investigating the impact of interventions in these areas as a means of reducing antisocial and violent behavior patterns in children and youth (Walker, Colvin, & Ramsey, 1995). This important discovery was made, in part, by taking advantage of the behavioral dimensions approach, which aided researchers in theory, assessment, and intervention developments.

Purpose and Objectives

The major purpose of this thesis is to critique, analyze, and synthesize

previous empirical studies examining the dimensions of social skills of children and

adolescents. This study will be an initial attempt to account for the lack of consensus

in the literature, and develop a working dimensional model.

The specific objectives are

1. to review and describe the current state of research addressing the

empirically derived dimensions of social skills of children and adolescents;

2. to analyze these studies by describing their strengths and weaknesses; and

3. to synthesize data from these studies to derive an empirically based

taxonomy of childhood and adolescent social skills.

CHAPTER II

LITERATURE REVIEW

The topic area of this study involves two major concepts: social skills and social competence. Though often thought of as equivalent, these two constructs are actually quite different. The significant literature of each of these areas, as they apply to this study, will be briefly reviewed.

Social Skills

Definition

Despite countless studies done in the area of child and adolescent social skills over the past quarter century, a concise agreed upon definition does not yet exist. McFall (1982), in an important review of the topic, identified two general approaches that have been taken concerning the definition and conceptualization of social skills: a trait and a molecular approach.

The trait model views social skills as underlying personality characteristics or response predispositions that are exhibited in behavior. Here social skills are treated as psychological constructs, with a person's behavior being indicative of more or less of the underlying trait. For example, in developing a social skills measure based on the trait model, a researcher will attempt to

> obtain a representative sample of a subject's responses to a pool of
> items supposedly selected from a common domain of interpersonal
> situations. Invariably, a single score is derived from the measure. . .
> based on the sum of a subject's scored responses across all items. . . .

The investigator assumes that the subject's responses to all items are influenced by a common factor--the person's general level of social skillfulness--and that the most reliable and valid estimate of the person's *true* skill level is the mean level of skill evidenced across all items. (McFall, 1982, p. 4, emphasis in original)

The second approach, known as the molecular model, defines social skills as observable behaviors learned and exhibited in specific situations. This approach makes no reference to any underlying personality trait or characteristic. It simply posits that the best predictor of a person's future behavior is his/her past behavior in a similar situation. When developing an assessment instrument based on the molecular model, researchers will obtain measures of a subject's discrete observable behaviors (e.g., amount of eye contact, type of facial expressions, rate of talking, etc.) to determine a situation-specific rating of social skills. This rating does not indicate that the subject has any particular amount of social skills; rather, it is simply a rating of how skillfully the subject behaved in a particular situation, at a particular time.

Both the trait and molecular models have problems (McFall, 1982). The trait model seeks to integrate various observations of social behavior into a single construct. According to McFall, social skill instruments that have used a trait model have exhibited poor psychometric properties, including low agreement between measures, poor generalizability and factor structures, and weak criterion-related validity.

McFall (1982) criticized the molecular model for: (a) not having any system for pulling together the situation-specific behaviors proposed by the model, (b) not

delineating at what level behaviors are to be used to define social skills (e.g., eye contact versus facial expressions versus speech content), and (c) providing poor predictions of a person's future behavior.

Gresham (1986) proposed that the answer to McFall's dilemma between the trait and molecular models may be an intermediate position between the two. However, he goes on to acknowledge that such a definition of social skills has not yet been proposed, and that the concept is in need of further development.

Gresham and Elliott (1984) noted three general types of social skill definitions: a peer acceptance definition, which suggests that social skills are those behaviors that result in children and adolescents who are accepted by, or popular with, their peers; a behavioral definition, which states that social skills are situation-specific responses that increase the probability of positive reinforcement and decrease the probability of negative reinforcement or punishment; and a social validity definition stating that social skills are situation-specific behaviors that predict and/or correlate with important social outcomes such as peer acceptance, popularity, and the judgment of behavior by significant others.

It is this last definition, the social validity approach, which appears to have held sway over much of subsequent social skills assessment development. Gresham (1986) noted that methods that examine situation-specific behaviors that are correlated with important social outcomes have received strong empirical support in the literature.

Importance of Social Skills

Gilbert and Gilbert (1991) have noted that social skills are correlated with many important social, emotional, and behavioral outcomes, though the relationship to personality and psychopathology is a complex and multifaceted one. While pointing out that social skills training has proven highly effective in treating a number of psychopathologies and behavior problems, they note that there is still disagreement concerning the question of causality. To put it simply 'Do social skill deficits cause one to develop pathological behavior or does the pathology lead to the social skill deficit?' This is an important theoretical and practical question which is currently being debated.

By using the social validity approach outlined earlier, some important social outcomes which have been found to be correlated with social skills will now be reviewed. Hokanson and Rubert (1991) have noted that a negative relationship between depression and social skills is well documented, with the question of causality remaining open. They pointed out that this relationship has received empirical and theoretical support from several major researchers in the field.

Lewinsohn (1974) has noted that deficiencies in an individual's social skills can result in a low rate of response-contingent positive reinforcement from the social environment. Such low rates of positive reinforcement have been associated with a variety of depressive symptoms, including pessimism, reduced rate of verbal behavior, and decreased activity level.

Depressed individuals, when compared to control subjects, have been found to

display fewer desirable social skills such as friendship, warmth, and reasonableness (Lewinsohn, Mischel, Chaplin, & Barton, 1980), as well as decreased levels of important nonverbal behaviors such as eye contact, facial pleasantness, and adaptive gestures (Youngren & Lewinsohn, 1980).

McColloch and Gilbert (1991) have noted that deficits in social skills covary with the development and maintenance of aggressive behavior patterns. This relationship has found unsettling support in studies of families. Robins (1979) found that the presence of antisocial behavior in parents is associated with an increased probability of antisocial and delinquent behavior in children, with probabilities increasing from 13% in White families without an antisocial parent (0% for Blacks), to 28% in White families with an antisocial parent (43% for Blacks). Ramsey, Patterson, and Walker (1990) found a high correlation ($r = .72$) between children's antisocial behavior displayed in the home and that displayed in school. These results suggest the importance of intervening early with such children (and their families) if we are to break the cycle of perpetuation of antisocial behaviors.

McColloch and Gilbert (1991) pointed out that aggressive children have been shown to be deficient in important social skills including academic, interpersonal, and self-control skills. These researchers also note three theoretical models that have been proposed to explain this relationship: (a) aggressive characteristics occur first, leading to the development of social skill deficits, (b) there is a parallel unfolding of social skill deficits and aggressive behavior, and (c) social skill deficiencies precede aggression.

Chiauzzi (1991) pointed out that social skill deficits have been implicated in the development and maintenance of alcoholism, with a person's beliefs about alcohol and its relationship to social behavior being a powerful determining factor. Social skills treatment of alcoholism has been shown to offer much promise, particularly when combined with a cognitive approach (Chiauzzi, 1991).

Finally, Walker et al. (1995) noted that social skill deficits, particularly those relating to teacher and peer acceptance, have been found to correlate with many factors which place children and adolescents at risk for developing antisocial and violent behavior patterns. Children who fail in both teacher and peer adjustment are more likely to experience a host of academic, social, and emotional problems leading to delinquency and aggression later in life.

Assessment

Because social skills are viewed as situation-specific behaviors, it is not surprising to find that researchers and clinicians seek to obtain various measures of these skills during assessment. McFall (1982) noted that different assessment methods have traditionally been aligned to different theoretical approaches: with paper-and-pencil self-report, semi-structured quasi-naturalistic observation, and ratings by significant others being more often aligned with a trait-type orientation; and behavioral role playing and naturalistic observation being the methods of choice for molecular models.

Merrell (1994a) noted that a multimethod, multisource, multisetting approach

is the best practice model for social-emotional assessments (see Figure 1). The reason for this preferred approach is both to decrease possible method, source, and/or setting bias as well as to provide a more detailed examination of where and with whom the child is experiencing difficulty. It is this approach to social skills assessment that appears to hold sway in research and practice.

Gresham (1986) has advocated for social skills assessment in four areas: skill deficits, where a child does not possess the necessary social skills to interact appropriately; performance deficits, where a child has the skills but is unable to perform them at adequate levels; self control deficits, where a child has been unable to learn the skills due to some type of emotional problem; and self control performance deficits, where a child possesses the skills but, due to an emotional arousal response, is unable to perform adequate.y. This model is unique in that it breaks social skill deficits down into more specific subcategories allowing clinicians and researchers to better identify why a child is not exhibiting appropriate social behaviors. For instance, a child who possesses the necessary social skills, but has an emotional problem that is preventing expression of these skills, will likely require interventions different from those of a child who has not yet had the opportunity to learn these skills. While ambitious, the model has yet to receive definitive empirical support.

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┌─────────────────────────────────────────────────────────┐
│            COMPONENTS OF ASSESSMENT                       │
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┌──────────────────┐  ┌──────────────────┐  ┌──────────────────┐
│ METHODS          │  │ SOURCES          │  │ SETTINGS         │
│                  │  │                  │  │                  │
│ Direct Observation│  │ Child or Adolescent│ │ Home            │
│ Behavior Rating  │  │ Parents          │  │ School           │
│ Interview        │  │ Teachers         │  │ Clinic           │
│ Record Review    │  │ Peers            │  │ Play             │
│ Sociometrics     │  │ Community Based  │  │ Community        │
│ Self-Report      │  │ Informants       │  │                  │
└──────────────────┘  └──────────────────┘  └──────────────────┘
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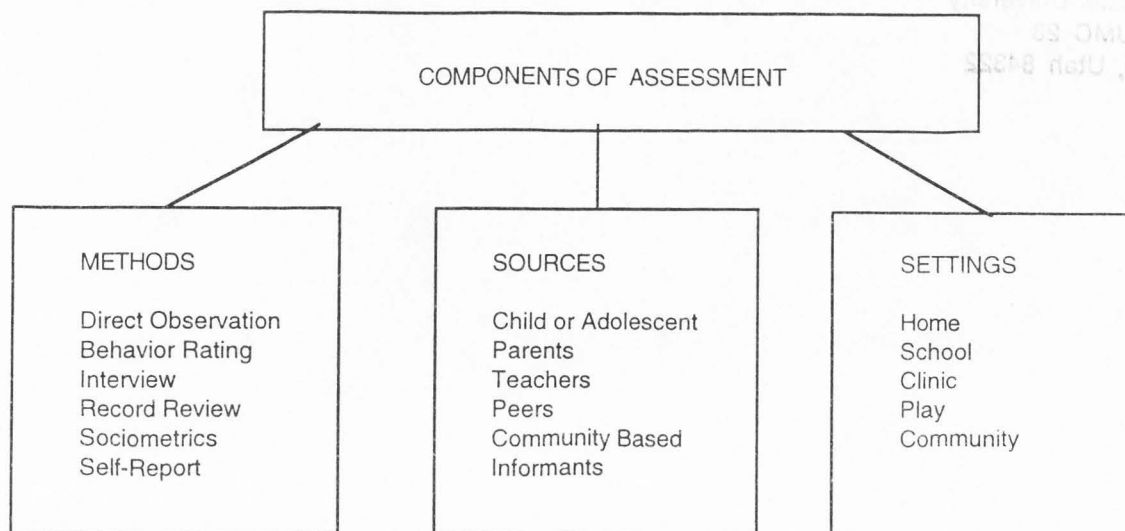
Figure 1. Potential components of a multiple method, source, and setting assessment (adapted from Merrell, 1994a).

Social Competence

Definition

Social competence, though often confused with social skills, is actually something quite different. McFall (1982) defined social competence as an evaluative term based upon someone's judgment that, according to some criteria, an individual has performed adequately on a task. To be considered competent, behavior only needs to be adequate, not exceptional.

Merrell (1993) has defined social competence as a multidimensional construct, consisting of several behavioral and cognitive components, including aspects of emotional development, needed to establish adequate social relations and obtain desirable social outcomes.

Gresham (1986) has conceptualized social competence as a tripartite structure composed of three subdomains: adaptive behavior, social skills, and peer acceptance. In this model, as well as those previously cited, social skills exhibited by an individual are viewed as a necessary but not sufficient condition of social competence. For instance, an individual might have a repertoire of social skills, but might suffer from some physical or emotional condition that makes expression of those skills difficult, or unlikely to be judged favorably by others. Social competence refers then, not just to an individual's social skills, but also to how effectively the individual is able to employ these skills in the environment.

Importance

A child's social competence, or lack thereof, will have a direct impact upon the quality and number of supportive relationships he/she has. As Walker et al. (1985) have pointed out, the child upon entering school has to make two critical forms of adjustment to the environment: peer-related and teacher-related. Should the individual fail at either one or both of these adjustments, the prospects are not good for successful relationships.

It is important that children have positive relationships with adults. Rutter (1979) has shown that children growing up in a disruptive family, who do not have at least one good relationship to an adult in the home, are 50% more likely to develop a conduct disorder. Rutter theorizes that this one good relationship need not be restricted to an adult in the home, but could be someone in the school (e.g., teacher)

or community.

It has been recognized that lack of children's social competence can lead to peer rejection and unpopularity. Rubin and Rose-Krasnor (1992) noted that children who are aggressive or withdrawn have been shown to differ considerably from their peers on a number of social competency variables, and that these children are also much more likely to be rejected by their peers. Denham and McKinley (1993) found that preschool children who exhibit socially incompetent behaviors, such as an inability to be friendly, nurturing, cooperative, and altruistic, and who in contrast are aggressive, or hyperactive, are at increased risk of being disliked and rejected by their peers.

Hartup (1979) has indicated that positive peer relationships during childhood have been associated with a number of important social outcomes. These include the development of moral reasoning, mastering of aggressive impulses, appropriate sexual socialization, and remaining in school versus dropping out. Hartup (1992) has also noted that maladjusted adults are more likely to have had peer difficulties in childhood than better adjusted individuals.

Assessment

Dodge, Pettit, McClaskey, and Brown (1986) have proposed a three-step model for the assessment of social competence. First, there is an identification of social incompetence through judgments or ratings by others. Next, a determination of situations in which social incompetence is thought to be a problem is made using

interviews and/or direct observation of the child. Finally, a determination of the origin of the rating of social incompetence (e.g., rater bias, the child's behavior, or some other aspect of the environment) is sought by combining data gleaned from the previous steps.

This method is similar to multiple-gating procedures described by Merrell (1994a) in which a child is first screened using a parent or teacher rating, followed by behavioral observation, and interviews. According to Merrell, such a procedure has been found to be an effective way of systematically using data from multiple methods, sources, and settings, resulting in few false positives.

Walker, Irvin, Noell, and Singer (1992) noted that with the advances in the methodology of construct score development, pulling together information from multiple methods of assessment, multiple settings, and multiple raters is much simpler. They see the future of social competence assessment moving towards a construct score approach using social validity definitions of social competence. Indeed, this may represent the rapprochement between McFall's (1982) trait and molecular models of social skills called for earlier by Gresham (1986). By using situation-specific social competence assessments of behaviors known to correlate with positive outcomes, and pulling the information together to form a construct, both the trait and molecular models are incorporated.

Social Skills Taxonomies

With the advances noted in the definition and assessment of social skills and

social competence, as well as the documented importance of both to a wide variety of critical social and emotional outcomes for children and adolescents, one might expect that a valid, agreed-upon taxonomy for classifying social skills would be available. Such is not the case. While many measures have been developed and marketed to measure social skills, few have empirically validated their classification system to arrive at a taxonomy of social skills (Merrell, 1994b).

Merrell (1994a) pointed out that one solution to this problem may lie in a behavioral dimensions approach. This approach to classification involves the use of factor analysis and/or cluster analysis to arrive at empirically derived clusters of highly intercorrelated behaviors. These clusters are then labeled by the researcher, based on the types of specific behaviors in the cluster, to identify the underlying behavioral dimension. While a relatively large body of research has been conducted using a dimensional approach to classify childhood problem behaviors, relatively few studies have used such an approach to classify children's and/or adolescents' social skills (Merrell, 1994b).

Quay (1986) reviewed 61 studies, all of which derived empirically based dimensions of children's problem behavior using factor analysis. Quay matched the results of these different studies by examining both the factor labels and the actual behaviors subsumed by the factors to develop a classification system of children's problem behavior. Quay (1986) noted that this approach has some distinct advantages over other methods of classification:

> First, empirical evidence is obtained showing that the dimension in fact exists as an observable constellation of behavior. Second, . . . the

relatively objective nature of most of the constituent behaviors utilized in the statistical analyses permits reliable measurement of the degree to which a child manifests the dimension. (p. 10)

The current thesis is proposed as an attempt both to account for the wide variety of social skill dimensions reported in the literature and to collect data from these studies to derive an empirically based taxonomy of childhood and adolescent social skills. Such a review will make an important contribution not only in the area of classification, but potentially in assessment and intervention efforts as well.

CHAPTER III

METHOD AND RESULTS

Locating Studies

To locate appropriate studies for this thesis, a computer-assisted search of PSYCLIT was completed covering a 20-year time period from 1974 through 1994. The same procedure was applied to the ERIC system covering the same time period. The following text descriptors were used:

Social skill(s)	Social Competence
Children	Adolescent(s)
Student(s)	Factor Analysis
Construct(s)	Assessment(s)
Rating Scale(s)	Validity

Bibliographies of all the articles obtained from this search were also examined for other relevant sources that met the inclusion criteria. Inclusion criteria for this review were the following:

1. Studies had to use factor analysis and/or cluster analysis to obtain common dimensions or constructs of social skills.

2. Studies had to examine social skills and/or social competence of children and/or adolescents.

Studies were first identified as appropriate for the review according to inclusion criteria. Initially, 31 studies were located. Upon subsequent investigation,

seven of these studies were found to be inappropriate for the review for two reasons; either they did not report the actual social skills that comprised the derived factors, or they focused primarily on adaptive or problem behaviors rather than on social skills. An additional five studies were eliminated because they essentially duplicated the results of prior investigations with a measure already represented in the review. This elimination of duplication was done to ensure a more balanced and representative body of studies (e.g., so that three studies using the same instrument, all which derived similar social skill factors, would not dominate the analysis and results).

This elimination process left 19 studies, one of which (Gresham & Elliott, 1990) was analyzed as three separate but related studies, bringing the total number of studies analyzed to 21. The Gresham and Elliott (1990) source is actually a test manual for the Social Skills Rating System, which is comprised of separate rating forms for teachers, parents, and students. Because the different forms of the instrument resulted in significantly different factor structures, each was viewed as a separate but related study.

<div align="center">Review and Analyses</div>

Four major levels of analysis were carried out: description of study characteristics, identification of common social skill dimensions, investigation of factor items associated with these dimensions, and the construction of an empirically based social skills taxonomy. These four levels (along with corresponding tables) are

summarized in Figure 2.

Level One Analysis

In the first level of analysis, each of the 21 studies was reviewed and coded using the Coding Sheet found in the Appendix A. A global comparison of the studies was made, with studies being compared in the following three general categories: subject characteristics (age, grade, and gender), methodological characteristics (theoretical orientation, sample size, name of data collection instrument, method of data collection, type of factor rotation used, overall study validity rating), and outcomes (number of factors found, name of factors, number of items comprising each factor, percentage of variance associated with each factor). The results of the first-level analysis are found in Appendix B.

Level Two Analysis

Summary information and relevant statistics describing the results of the first-level analysis were then compiled. The results of this second level of analysis of the three general categories are presented below.

Age Range

Study subjects age range was separated into three distinct categories: 3 through 6 years, 7 through 11 years, and 12 through 18 years. These age cutoffs were chosen because they are often used to distinguish between preschool-, elementary-, and secondary-age children.

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┌─────────────────────────────────────────────────┐
│  DESCRIPTION OF INDIVIDUAL STUDY                  │
│  CHARACTERISITCS                                  │
│  (APPENDIX 1)                                     │
└─────────────────────────────────────────────────┘
              ▼
    ┌─────────────────────────────────────────┐
    │  THE MOST COMMON DIMENSIONS OF            │
    │  SOCIAL SKILLS DERIVED ACROSS STUDIES     │
    │  (TABLE 11)                               │
    └─────────────────────────────────────────┘
                  ▼
        ┌─────────────────────────────────────┐
        │  INDIVIDUAL FACTORS ITEMS OF         │
        │  THE FACTORS COMPRISING THE          │
        │  MOST COMMON DIMENSIONS              │
        │  (APPENDICES 2 TO 6)                 │
        └─────────────────────────────────────┘
                      ▼
            ┌─────────────────────────────┐
            │  PRINCIPAL CHARACTERISTICS   │
            │  OF THE MOST COMMON          │
            │  DIMENSIONS OF SOCIAL        │
            │  SKILLS FOR CHILDREN AND     │
            │  ADOLESCENTS                 │
            │  (TABLES 14 TO 18)           │
            └─────────────────────────────┘
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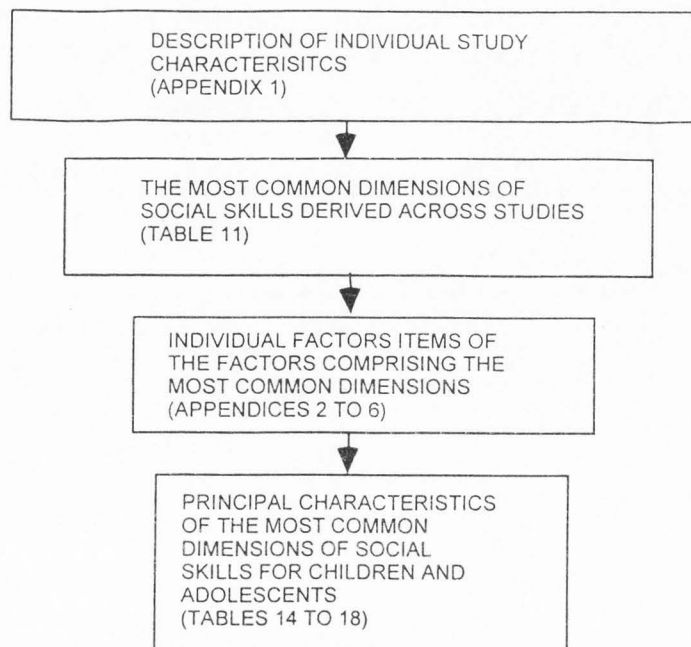
Figure 2. Summary of the major levels of analysis and associated tables.

Over three quarters of study subjects fit into the three- through six-year age range, with the two older age range categories being represented in five studies each. Eight studies examined children in more than one of these age ranges, while 12 did not report age data on their subjects (see Table 1).

Grade Range

Grade data were organized according to the following three grade range categories: preschool through second, third through sixth, and seventh through twelfth. These range categories were chosen because a majority of the studies reviewed used similar cutoffs.

Study subjects were slightly more likely to be in preschool through second

Table 1

Age Range of Study Subjects

Age Range ($\underline{N}$ = 9, twelve studies did not report these data)	Frequency	Percentage
3 through 6 years	7	77.78
7 through 11 years	5	55.56
12 through 18 years	5	55.56

grade range, than the third through sixth grade range. Seventh through twelfth graders were only represented about half as often. Thirteen studies examined children in more than one of these age ranges, while four did not report grade data on their subjects. The results of this analysis are presented in Table 2.

Gender Ratio

Gender data were organized according to the ratio of males to females in study samples. There was, on average, an almost equal number of males and females sampled across studies, though seven studies did not report the gender composition of their samples. The results of this analysis are presented in Table 3.

Methodological Characteristics

Theoretical orientation. As discussed in Chapter II, one of three main theoretical positions is typically taken by investigators who are seeking to measure children's social skills: a peer acceptance, behavioral, or social validity position. Studies were carefully examined to determine which of these theoretical positions was

Table 2

Grade Range of Study Subjects

Grade Range ($\underline{N}$ = 17, four studies did not report these data)	Frequency	Percentage
Preschool through second grade	13	76.47
Third through sixth grade	11	64.71
Seventh through twelfth grade	6	35.29

Table 3

Gender Ratio of Study Subjects

Gender Ratio ($\underline{N}$ = 14, seven studies did not report these data)
Mean Ratio (males to females) = 53.21:46.79
Standard Deviation = 7.25
Median Ratio (males to females) = 51.50:48.50

predominant. In some case studies, authors clearly stated what their theoretical

orientation was, making the analysis quite straightforward. In other cases, some

inference was necessary to fit the study into one of these three categories. In such

cases, studies were closely examined in several areas (including rationale,

development, outcomes, and implications of the study) to find the best fit.

The social validity approach appeared to be used in a majority of the studies,

with the behavioral definition used in just one third of the studies, and the peer

acceptance position used in less then one tenth of the studies. These results are

presented in Table 4.

Sample size. Size of study samples ranged widely, from a low of just under 200, to a high of just over 4,000. On average, studies sampled about 1,000 subjects; however, there was a huge standard deviation almost equal to 1,000. The results of this analysis, including mode and median information, are presented in Table 5.

Names of data collection instruments. As stated earlier, no study was allowed in this analysis if it essentially duplicated the factorial results of prior investigations with the same measure. This requirement ensured that no factor structure was overrepresented in the analysis. Despite this requirement, a fairly wide cross section of instruments was represented. The names of these instruments are listed in order by study number in Table 6.

Method of Data Collection

As noted in Chapters I and II, there is a variety of methods that have been used to measure social skills and social competency in children and adolescents. Teacher rating scales were the method of choice for most investigators of the studies sampled, being used in almost three quarters of the studies. Parent ratings, youth self-report, and peer sociometrics were used much less often. Three studies used instruments with two methods of data collection. The results of this analysis are presented in Table 7.

Table 4

Theoretical Orientation of Studies

Theoretical Orientation ($\underline{N}$=21)	Frequency	Percentage
Social Validity	12	57.14
Behavioral	7	33.33
Peer Acceptance	2	9.53

Table 5

Size of Study Samples

Sample Size ($\underline{N}$=21)	
Range	184-4,177
Mean	1,068.48
Standard Deviation	992.54
Mean	669

Type of Factor Rotation

Two main types of factor rotation methods were used by the study investigators: orthogonal or oblique. An orthogonal rotation was most often used, being applied when investigators had reason to believe that the social skill factors were not significantly correlated. An oblique rotation was used only about half as often and was used for factors that were at least moderately correlated. Table 8 presents the results of this analysis.

Table 6

Names of Data Collection Instruments

Study Number--Name of Corresponding Instrument ($N=21$)
1. Preschool and Kindergarten Behavior Scales
2. School Social Behavior Scales
3. Preschool Socioaffective Profile
4. Preschool Social Behavior Questionnaire
5. Early School Behavior Scale
6. Walker-McConnell Scale of Social Competence and School Adjustment (Adolescent Version)
7a, b, c. Social Skills Rating System--Teacher, Parent, Student Versions
8. Class Conduct Questionnaire
9. Walker-McConnell Scale of Social Competence and School Adjustment
10. Social Behavior Assessment--Revised
11. Teacher-Child Rating Scale
12. Teacher Rating of Social Skills
13. Revised Class Play
14. Matson Evaluation of Social Skills with Youngsters
15. Social Behavior Assessment
16. Iowa Social Competency Scale for Preschool Children
17. Prosocial Behavior Questionnaire
18. Health Resources Inventory
19. Kohn Social Competence Scale

Table 7

Method of Data Collection

Method ($\underline{N}$=21)	Frequency	Percentage
Teacher Rating Scale	15	71.43
Parent Rating Scale	4	19.05
Self Report	4	19.05
Peer (Sociometric) Matching	1	4.76

Table 8

Type of Factor Rotation Used

Type of Factor Rotation ($\underline{N}$=21)	Frequency	Percentage
Orthogonal	13	61.90
Oblique	8	38.10

Study Validity Ratings

A global study validity rating using a five-point Likert scale (1 = excellent, 2 = good, 3 = fair, 4 = inferior, 5 = unacceptable) was made based upon the following seven threats: history, mortality, instrumentation, testing, selection, regression, and maturation. Each of these potential threats was also rated on a five-point Likert scale (1 = no major threat, 2 = possible slight threat, 3 = probable threat, 4 = definite threat, 5 = major threat) with the mean serving as the overall study validity rating. The majority of the studies received an global rating of "good."

One study received a rating of "inferior," but it was decided to include this study in the analysis since the validity threats did not appear to completely invalidate the factors derived. The results of this analysis are presented in Table 9.

An interrater reliability check was also performed on a subset of the study sample. One third of the studies (numbers 3, 4, 6, 11, 17, 18, and 19) were randomly selected and given an overall validity rating by a doctoral-level assistant professor of secondary education who also used the same criteria. A interrater reliability coefficient was then calculated using the Spearman rank correlation. The resulting reliability coefficient was .95, suggesting a high level of agreement between raters. When the agreement criterion was changed to allow for differences between raters of just one validity rating point, the resulting coefficient was 1.0.

Outcomes

Number of factors derived. The number of social skill factors derived across studies ranged widely, from a low of one to a high of five. The mean number of factors derived was close to three (2.67), with a standard deviation of just over one (1.35). The median was three, with a bimodal distribution. Over one quarter of the studies derived either one or three social skill factors. These results are presented in Table 10.

Name of factors derived. An important element of the second-level analysis was the identification and grouping together of similar social skill factors into common dimensions. This was accomplished by examining both the name of each social skill factor and the underlying behaviors subsumed by the factor (the approach

Table 9

Global Study Validity Ratings

Study Validity Ratings ($\underline{N}=21$)	Frequency	Percentage
Good	12	57.14
Fair	8	38.10
Inferior	1	4.76

Table 10

Number of Social Skill Factors Derived Across Studies

Number of Social Skill Factors Derived ($\underline{N}=21$)	Frequency	Percentage
one	6	28.57
two	3	14.20
three	6	28.57
four	4	19.05
five	2	9.52

used by Quay, 1986). For example, items comprising a factor labeled "Peer Interaction" were examined to insure that the majority of the items (at least 50%) were directly related to peers. If so, that factor would be grouped with other "Peer-Related" factors under a common dimension. The most common social skill dimensions, those occurring in one third or more of the studies reviewed, were then identified. This method was used to eliminate outliers, as well as study specific findings. This one-third cut-off is the same used by Quay in his landmark 1986

study. The most common dimensions appear in bold print in Table 11, and are followed by the respective individual factors names in parentheses.

Five social skill dimensions were found to occur in more than one third of the studies reviewed. A dimension labeled "Peer Relations" was present in over half of the studies, as was a "Self-Management" dimension. An "Academic" dimension appeared in close to half of the studies, while both "Cooperation" and "Assertion" were present in just over one third of the studies.

There were also some additional, but far less common social skill factors, all of which occurred in less than 10% of the studies. These factors contained items that were unable to fit into the five most common dimensions noted above. They are listed in Table 12. These factors were not examined in more detail because they occurred in so few studies, not meeting the one-third criterion cut-off.

Number of items comprising each factor. The number of items associated with each social skill factor varied widely from a low of 3 to a high of 26. The mean number of items per factor was 11.85, with a standard deviation of 5.04. The mode was 10. One study did not report this data.

Percentage of variance associated with each factor. The amount of total variance associated with each factor varied widely, from a low of just over 1%, to a high of almost 85%. Clearly some factors were more prominent than others. Study authors did not appear to use any consistent level of variance cut-off when deciding upon their factor structure. The results of this analysis are presented in Table 13.

Table 11

Social Skill Factors Grouped into the Most Common Dimensions

Names of the Most Common Social Skill Dimensions (listed in descending order of frequency)	Frequency (Individual Studies)	Percentage
Peer Relations (Social Interaction, Prosocial, Interpersonal, Peer Preferred Social Behavior, Empathy, Social Participation, Sociability-Leadership, Peer Reinforcement, General, Peer Sociability)	11 (1, 2, 4, 6, 7c, 9, 10, 12, 13, 17, 18)	52.38
Self Management (Self-Control/Social Convention, Social Independence, Social Competence, Social Responsibility, Rules, Frustration Tolerance)	11 (1, 2, 3, 6, 7a, 7b, 7c, 10, 11, 15, 18)	52.38
Academic (School Adjustment, Respect for Social Rules at School, Task Orientation, Academic Responsibility, Classroom Compliance, Good Student)	10 (2, 6, 8, 9, 10, 11, 12, 15, 17, 18)	47.62
Cooperation (Social Cooperation, Competence, Cooperation-Compliance)	8 (1, 5, 7a, 7b, 7c, 12, 15, 19)	38.09
Assertion (Assertive Social Skills, Social Initiation, Social Activator, Gutsy)	7 (7a, 7b, 7c, 11, 12, 16, 18)	33.33

Level Three Analysis

For the third level of analysis, the most common social skill dimensions (listed in Table 11) were examined to determine the most common social skills associated with each. This analysis was accomplished by listing the social skills constituting each of the facts that comprised the dimension. For example, all of the

Table 12

Less Common Social Skill Factors

Names of the Less Common Social Skill Factors (listed in decreasing order of frequency)	Frequency (Individual Studies)	Percentage
Empathy	2 (6, 7c)	9.52
Responsibility	2 (7b, 15)	9.52
Teacher Preferred Social Behavior	1 (9)	4.76
Compliance	1 (15)	4.76
Appropriate Social Skills (global rating)	1 (14)	4.76

Table 13

Total Variance Associated with Each Factor

Percentage of Total Variance Associated with Each Factor $N=11$, ten studies did not report this information)	
Range	1.6-84.5
Mean	22.55
Standard Deviation	22.22
Median	11.7

items comprising the first "Peer Relations" factor (Social Interaction) were listed.

Individual items of the next "Peer Relations" factor (Prosocial) were then listed, with

similar items being grouped together. This process was carried out for all five of the

most common dimensions with the results listed in Appendices C-1 through C-5.

Items printed in bold in these tables are those that occurred in one third or more of

the studies comprising that dimension.

Level Four Analysis

In the final stage of analysis, a social skills taxonomy was constructed. This

was accomplished by grouping together similar social skills to determine the principal

behavioral characteristics (those occurring in one third or more of the studies)

associated with each dimension. These principal social skills were then rank-ordered

(based upon frequency) and listed in descending order in Tables 14 through 18. This

method of classification according to principal characteristics was also the one used

by Quay (1986).

"Peer Relation" Skills

The "Peer Relations" dimension occurred in 11 (52.38%) of the studies

reviewed. Twelve social skills were found to be consistently associated with this

dimension (listed in Table 14). This dimension appears to be dominated by social

skills that reflect a child or youth who is "positive" with his/her peers, including

Table 14

Principal Social Skills of the "Peer Relations" Dimension

Primary "Peer Relations" Social Skills as Derived from Multivariate Statistical Studies	Frequency (Individual Studies)	Percentage of "Peer Relations" Studies
1. Compliments/praises/applauds peers	8 (2, 4, 6, 7c, 9, 10, 12, 17)	72.72
2. Offers help or assistance to peers when needed	8 (2, 4, 6, 9, 10, 13, 17, 18)	72.72
3. Invites peers to play/interact	6 (1, 2, 4, 6, 9, 17)	54.54
4. Participates in discussions, talks with peers for extended periods	5 (1, 2, 6, 9, 10)	45.45
5. Stands up for rights of peers, defends a peer in trouble	5 (1, 6, 7c, 10, 12)	45.45
6. Is sought out by peers to join activities, everyone likes to be with	5 (2, 6, 9, 13, 18)	45.45
7. Has skills or abilities that are admired by peers, participates skillfully in peer activities	4 (1, 2, 6, 9)	36.36
8. Skillfully initiates or joins conversations with peers	4 (2, 6, 9, 10)	36.36
9. Is sensitive to feelings of other students (empathy, sympathy)	4 (2, 4, 7c, 17)	36.36
10. Has good leadership skills, assumes leadership role in peer activities	4 (2, 6, 9, 13)	36.36
11. Makes friends easily, has many friends	4 (6, 9, 13, 18)	36.36
12. Has sense of humor, shares laughter with peers	4 (6, 9, 13, 18)	36.36

Table 15

Principal Social Skills of the "Self-Management" Dimension

Primary "Self-Management" Social Skills as Derived from Multivariate Statistical Studies	Frequency (Individual Studies)	Percentage of "Self-Management" Studies
1. Remains calm when problems arise, controls temper when angry	7 (2, 3, 6, 7a, 7b, 7c, 11)	63.63
2. Follows rules, accepts imposed limits	7 (2, 7a, 7b, 10, 11, 15, 18)	63.63
3. Will compromise with others when appropriate, will compromise in conflicts	6 (2, 6, 7a, 7b, 7c, 10)	54.54
4. Receives criticism well, accepts criticism from others (e.g., peers, parents, teacher)	6 (6, 7a, 7b, 7c, 10, 18)	54.54
5. Responds to teasing by ignoring peers, responds appropriately to teasing	6 (6, 7a, 7b, 7c, 15)	45.45
6. Cooperates with others in a variety of situations (e.g., at school, home, etc.,)	6 (2, 3, 7a, 7b, 10)	45.45

skills such as complimenting or praising others, offering help or assistance, and inviting others to play or interact.

"Self-Management" Skills

The "Self-Management" dimension also occurred in 11 studies. Six primary social skills were consistently associated with this dimension (see Table 15). The picture that emerges here is a child who might be labeled emotionally well adjusted. This dimension appears to reflect a child or youth who is able to control his/her

Table 16

Principal Social Skills of the "Academic" Dimension

Primary "Academic" Social Skills Derived from Multivariate Statistical Studies	Frequency (Individual Studies)	Percentage of "Academic" Studies
1. Accomplishes tasks/assignments independently, displays independent study skills	8 (2, 6, 9, 10, 11, 12, 15, 18)	80
2. Completes individual seatwork/assigned tasks	7 (2, 6, 9, 10, 11, 15, 18)	70
3. Listens to and carries out teacher directions	7 (2, 6, 8, 9, 10, 12, 15)	70
4. Produces work of acceptable quality for ability level, works up to potential	5 (2, 6, 9, 15, 18)	50
5. Uses free time appropriately	5 (6, 8, 9, 10, 12)	50
6. Is personally well organized (e.g., brings required materials to school, arrives to school on time)	5 (6, 8, 9, 10, 11)	50
7. Appropriately asks for assistance as needed, asks questions	4 (2, 6, 8, 15)	40
8. Ignores peer distractions while working, functions well despite distractions	4 (10, 11, 12, 18)	40

temper, follow rules and limits, compromise with others, and receive criticism well.

"Academic" Skills

The "Academic" dimension occurred in 10 (47.62%) of the studies reviewed.

Eight primary social skills were found to be consistently related with this dimension.

These skills are listed in descending order of frequency in Table 16. This dimension

Table 17

Principal Social Skills of the "Cooperation" Dimension

Primary "Cooperation" Social Skills as Derived from Multivariate Statistical Studies	Frequency (Individual Studies)	Percentage of "Cooperation Studies"
1. Follows instructions/directions	5 (1, 5, 7a, 7c, 19)	62.5
2. Follows rules	5 (1, 5, 7b, 12, 19)	62.5
3. Appropriately uses free time	4 (1, 7a, 7b, 7c)	50.0
4. Shares toys/materials/belongings	3 (1, 5, 12)	37.5
5. Responds appropriately to constructive criticism or when corrected	3 (1, 5, 12)	37.5
6. Finishes assignments, completes tasks	3 (7a, 7b, 7c)	37.5
7. Keeps desk/room clean	3 (7a, 7b, 7c)	37.5
8. Puts toys/work/property away	3 (7a, 7b, 12)	37.5

is dominated by social skills that reflect a child or youth who might be called an independent and productive worker by his/her teacher. Such skills as accomplishing tasks or assignments independently, completing individual seatwork/assignments, and carrying out teacher directions all appear to describe this dimension well.

"Cooperation" Skills

The "Cooperation" dimension occurred in eight (38.09%) of the studies

Table 18

Principal Social Skills of the "Assertion" Dimension

Primary "Assertion" Social Skills as Derived from Multivariate Statistical Studies	Frequency (Individual Studies)	Percentage of "Assertion Studies"
1. Initiates conversations with others	5 (71, 7b, 7c, 12, 16)	71.43
2. Acknowledges compliments	4 (7a, 7b, 7c, 12)	57.14
3. Invites peers to play, invites others	3 (7a, 7c, 12)	42.86
4. Says and/or does nice things for self, is self-confident	3 (7a, 7b, 12)	42.86
5. Makes friends	3 (7a, 7b, 7c)	42.86
6. Questions unfair rules	3 (7a, 11, 18)	42.86
7. Introduces self to new people	3 (7a, 7b, 12)	42.86
8. Appears confident with opposite sex	3 (7a, 7b, 7c)	42.86
9. Expressess feelings when wronged	3 (7a, 7b, 18)	42.86
10. Appropriately joins ongoing activity/group	3 (7a, 7b, 12)	42.86

reviewed. Eight primary social skills were consistently associated with this dimension (see Table 17). The picture that emerges here is a child who essentially gets along with others by following rules and expectations, appropriately using free time, and sharing things. This dimension might be more accurately described as

compliance since the most frequent skills here appear to be ones involving doing
what others ask. The label "Cooperation" was maintained since a majority of study
authors used it.

"Assertion" Skills

The "Assertion" dimension occurred in seven (33.33%) of the studies
reviewed, just barely meeting the one-third frequency criterion cut-off. Ten primary
social skills were found to be consistently associated with this dimension. These are
listed in descending order of frequency in Table 18. This dimension is dominated by
social skills that reflect a child or youth who might be called "outgoing or
extroverted" by others. Such skills as initiating conversations with others,
acknowledging compliments, and inviting others to interact all appear to describe
this dimension well.

CHAPTER IV

DISCUSSION

Summary of Results

The major purpose of this thesis was to critique, analyze, and synthesize previous studies that examined the critical dimensions of social skills of children and adolescents. The three main research objectives were to provide: (a) a review and description of the studies done in this area, (b) an analysis of study findings, and (c) a synthesis of these findings into an empirically based social skills taxonomy. These three research objectives, along with their respective findings and implications, are discussed below. Recommendations for future research are also made where appropriate.

Review and Description of Studies

Locating the Studies

The first step of the review involved scanning studies completed over the past 20 years and locating 21 that were deemed appropriate. If one considers the breadth of research done in the area of child and adolescent behavior, it is perhaps surprising to find that so few appropriate studies were located. This tends to support Merrell's (1994b) perception that, while there is a large body of research concerning the common dimensions of child and adolescent problem behaviors, such is not the case for positive, socially competent behaviors.

Gesten (1976) has also noted the tendency of the field of psychology to focus its emphasis on identifying symptoms of pathology, rather than symptoms of emotional/behavioral health, as well as the inadequacies of intervention strategies based only on negative behaviors. Apparently this tendency to focus on pathology rather than health is also present in the field of children's and adolescent behavior. Indeed, a number of studies in the review had to be eliminated since they focused primarily on problem behaviors. It is hoped that the results of this thesis will make an important contribution to help balance the emphasis on negative behaviors with a focused examination of child and adolescent positive behaviors.

Description of the Studies

Studies were described in three general categories: subject characteristics (age, grade, and gender), methodological characteristics (theoretical orientation, sample size, name of data collection instrument, method of data collection, type of factor rotation used, overall study validity rating), and outcomes (number of factors found, name of factors, number of items comprising each factor, percentage of variance associated with each factor). The analysis of major findings in these areas will now be discussed.

Analysis of Study Findings

Subject Characteristics

With over three quarters of study subjects in the 3- through 6-year age range, and with subjects more likely to be in preschool through second grade, it appears that

researchers may be focusing on younger children perhaps in an attempt at early intervention. If so, the field appears to be moving in the right direction. Walker et al. (1995) have noted that recent research has identified a number of precursors of later antisocial behavior patterns (including early stealing, lying, peer rejection, and aggressive behavior) that are evident in the preschool years. Early screening in the areas of social skills and problem behavior are recommended as best practice approaches to prevent later behavior problems (Walker et al., 1995). With over half of the studies not reporting age-range data, and four not reporting grade data, the conclusion that researchers are targeting younger children must be viewed as tentative. It would be helpful if future researchers in this area reported both age and grade data on their subjects.

Subject data also suggest that researchers are doing a good job of representative sampling in terms of gender. There was, on average, a close to equal number of males and females sampled across studies, though seven studies did not report the gender composition of their samples. Few if any of the studies reported different factor structures based on gender.

Methodological Characteristics

In terms of theoretical orientation, a social validity approach appeared to be used by most researchers. These results tend to support Gresham's (1986) observation that methods examining situation-specific behaviors that are correlated with important social outcomes have received strong empirical support in the literature.

The size of study samples ranged widely, with an average of about 1,000 subjects, but with a large standard deviation of almost the same size. These results are of some concern, since they suggest that there is little consensus in the field about what constitutes an appropriate sample size. More unanimity among researchers in this area may be helpful.

Twenty-one separate instruments were represented in this thesis with the vast majority (over two thirds) being teacher-rating scales. This finding supports Merrell's (1993) position that teacher-rating scales are being increasingly used as measures of various student characteristics because they offer a relatively inexpensive, quick, and easy method by which to obtain important information on children's behavior. Teacher-rating scales have received empirical support from many studies in terms of their reliability and validity (see Hoge, 1983 for an excellent review of this issue).

Recent research suggests that upon entering the school environment, a child must make adjustments in two critical areas: teacher-related and peer-related behaviors, and that failure at either or both of these adjustments puts a child at increased risk for academic, social, and emotional problems later in life (Walker et al., 1995). It is not surprising that teacher-rating scales are viewed as powerful and essential components of any comprehensive evaluation of a student's behavior (Merrell, 1993), and were the method of choice for a vast majority of study researchers.

A fairly large majority of study authors found that an orthogonal (independent) factor solution was the most appropriate for their data. This suggests

that the most common social dimensions identified in this study may be viewed as relatively independent and unrelated. However, given the fact that several social skills loaded on more than one dimension (e.g., follows instructions, follows rules, uses free time appropriately, etc.), this independence may not truly exist.

Walker et al. (1992) have proposed an empirically based model suggesting two primary dimensions of children's social competence in school settings (peer-related and teacher-related), both of which contain elements of the five most common dimensions identified in this thesis (see Table 19). It may be the case that the five dimensions identified here are highly interrelated (and on a face validity level this appears to be the case), and might, upon further testing, result in fewer dimensions. It should be noted, however, that Walker et al.'s emphasis was on school adjustment per se and not necessarily on other adjustments necessary in the home or community. Future studies using these five most common dimensions, along with the corresponding social skills, would be helpful in resolving this question of relatedness, as well as establishing a definitive dimensional model.

Finally, with the majority of studies receiving a global validity rating of "good," and an interrater reliability coefficient of .95, it appears that a sufficient degree of confidence can be placed in the quality of the studies reviewed.

Outcomes

The mean number of social skill factors derived across studies was close to three, with a median equal to three. However, with a standard deviation of 1.35, and a clearly bimodal distribution, there appears to have been considerable variability in

Table 19

A Model of Social Competence Within School Settings (adapted from Walker et al. 1992)

Primary "Teacher-Related" Adaptive Behaviors	Primary "Peer-Related" Adaptive Behaviors
1. Complies promptly	1. Cooperates with peers
2. Follows rules	2. Supports peers
3. Controls anger	3. Defends self in arguments
4. Makes assistance needs known appropriately	4. Remains calm
5. Produces acceptable-quality work	5. Achieves much
6. Works independently	6. Leads peers
7. Adjusts to different instructional settings	7. Acts independently
8. Responds to teacher corrections	8. Compliments peers
9. Listens carefully to teacher	9. Affiliates with peers

the number of social skill factors derived. These results tend to support the observation made in Chapter I, that despite the growth in research on the social skills of children and adolescents, the number of empirically derived social skill dimensions has yet to be agreed upon.

The five most common dimensions identified in this thesis have the advantage of a strong base of empirical support, being derived in more than one third of the studies reviewed, with two derived in over half the studies. To date no other research has been located which has done such an extensive review of empirically derived

social skill dimensions of children and adolescents. Indeed, this thesis could be said to be breaking new ground by applying a well validated and respected research method used by Quay (1986), which combines aspects of both meta-analysis and qualitative review, to an area of critical importance: child and adolescent positive social behaviors.

The mean number of items comprising each social factor was approximately 12 (standard deviation = 5.04), while the mode was 10. This finding tends to correspond fairly well with the mean of approximately nine social skills associated with the five most common dimensions.

The amount of total variance associated with each factor varied widely, from a low of just over 1%, to a high of almost 85%. Clearly some factors were more prominent than others. Study authors did not appear to use any consistent level of variance cut-off when deciding upon their factor structure. More agreement among researchers in terms of what constitutes an adequate amount of variance accounted for by an individual factor would be welcome.

Synthesis of Study Findings into a Social Skills Taxonomy

The Taxonomy

The ultimate aim of this thesis was the development of an empirically based taxonomy of social skills of children and adolescents. Blashfield (1984) has noted four major purposes for developing a taxonomy of human behavior: (a) to provide a "nomenclature" by which professionals may communicate about known behavior

patterns; (b) to provide for "description and retrieval" of information helping to recognize a behavior pattern and its likely symptoms, prognosis, and treatment; (c) to provide a basis for making "predictions" about current and future behaviors, and (d) to aid in "theory formation" concerning etiology, prognosis, and response to treatment.

Clearly the classification of behaviors is a major goal of both psychology and psychiatry, evidenced by the importance and variety of such systems in assessment, diagnosis, theory development, treatment, and outcome research. Quay (1986) has identified four major behavior classification systems that are currently used by practitioners and researchers: (a) the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 1994) system, (b) the World Health Organization (WHO) multiaxial system, (c) the International Classification of Diseases (ICD-9), and (d) the Multivariate Statistical Approach.

Quay (1986) argued that the Multivariate Statistical Approach has distinct advantages over the other approaches since it uses both: (a) empirical evidence to show that behavioral dimensions in fact exist (as observable constellations of behaviors) and (b) relatively objective constituent behaviors permitting more reliable measurement of behavior.

Evidence of Validity

The social skills taxonomy proposed in this thesis has the advantage of support from studies that have all used a dimensional approach, as well as factor analysis, in their methodology. Every study reviewed used factor analysis to derive

empirically based clusters of behaviors. Anastasi (1988) has noted that factor analysis

provides important evidence of the construct validity of an assessment instrument.

Additional evidence of the validity of the taxonomy falls into two different

categories: (a) what will loosely be called "convergent" face validity, that is, "How

well do the dimensions appear to compare with other (current) research in this area?"

and (b) what will loosely be called "discriminant" face validity, that is, "How well

do the dimensions appear to discriminate unique positive behavior patterns from

negative ones which have already received empirical support in the literature?" This

additional evidence of validity must be viewed as extremely preliminary and

qualitative, since the only way to obtain definitive validity evidence for this taxonomy

would be to design an instrument based upon it and administer the instrument to a

representative sample of children and adolescents, along with other criterion

measures. This is certainly an area worthy of future study though beyond the scope

of the current investigation.

"Peer Relations" Dimension

The "Peer Relations" dimension, derived in over half of the studies reviewed,

corresponds closely with Walker et al.'s (1995) "Peer-related" adjustment factor

noted in Table 19. Behaviors such as complimenting others, leadership skills, and

supporting peers have all been associated with both of these dimensions.

Additionally, the "Peer Relations" dimension appears to effectively discriminate a

unique pattern of positive behaviors in direct contrast to a well established pattern of

negative behaviors labeled by Quay (1986) as "Social Ineptness" (see Table 20).

Table 20

Contrast Between "Peer Relations" and "Social Ineptness"

"Peer Relations" Social Skills as Derived from Multivariate Statistical Studies	Behaviors Associated with "Social Ineptness" According to Quay (1986)
1. Compliments/praises/applauds peers	1. Poor peer relations
2. Offers help or assistance to peers when needed	2. Likes to be alone
3. Invites peers to play/interact	3. Is teased or picked on by peers
4. Participates in discussions, talks with peers for extended periods	4. Prefers younger companions
5. Stands up for rights of peers, defends a peer in trouble	5. Shy, timid
6. Is sought out by peers to join activities, everyone likes to be with	6. Stays with adults, is ignored by peers
7. Has skills or abilities that are admired by peers, participates skillfully in peer activities	
8. Skillfully initiates or joins conversations with peers	
9. Is sensitive to feelings of other students (empathy, sympathy)	
10. Has good leadership skills, assumes leadership role in peer activities	
11. Makes friends easily, has many friends	
12. Has sense of humor, shares laughter with peers	

"Self-Management" Dimension

The "Self-Management" dimension also occurred in over half the studies. Walker et al. (1995) have also proposed an empirically supported "self-related" form of adjustment occurring later in a child's life (during middle school years) that shares behaviors similar to the "Self-Management" dimension. This dimension appears to effectively discriminate a pattern of positive behaviors from a well established pattern of negative behaviors labeled by Quay (1986) as "Undersocialized Aggressive Conduct Disorder" (see Table 21).

"Academic" Dimension

The "Academic" dimension, which appeared in close to half of the studies, was almost a mirror image of the "Teacher-Related" adjustment noted in Table 19. Such skills as accomplishing tasks or assignments independently, carrying out teacher directions, and producing quality work, all appear in both. This dimension appears to effectively discriminate a pattern of positive behaviors from a well established pattern of negative behaviors labeled by Quay (1986) as Attention Deficit Disorder (see Table 22).

"Cooperation" Dimension

A dimension labeled "Cooperation" was present in just over one third of the studies. It appears to measure skills that are in direct contrast to "Oppositional Defiant Disorder" found in the Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition (DSM-IV; American Psychiatric Association, 1994). This

Table 21

Contrast Between "Self-Management" and "Undersocialized Aggressive Conduct

Disorder"

"Self-Management" Social Skills as Derived from Multivariate Statistical Studies	Behaviors Associated with "Undersocialized Aggressive Conduct Disorder" According to Quay (1986)
1. Remains calm when problems arise, controls temper when angry	1. Temper Tantrums
2. Follows rules, accepts imposed limits	2. Negative, refuses directions
3. Will compromise with others when appropriate, will compromise in conflicts	3. Dominates, bullies, threatens
4. Receives criticism well, accepts criticism from others (e.g., peers, parents, teacher)	4. Impertinent, "smart", impudent
5. Responds to teasing by ignoring peers, responds appropriately to teasing	5. Fighting, hitting, assaultive
6. Cooperates with others in a variety of situations (e.g., at school, home, etc.)	6. Uncooperative, resistant, inconsiderate, stubborn
6. Is personally well organized (e.g., brings required materials to school, arrives to school on time)	6. Sluggish, lazy
7. Appropriately asks for assistance as needed, asks questions	7. Fidgety, restless
8. Ignores peer distractions while working, functions well despite distractions	8. Hyperactive/impulsive

Table 22

Contrast Between the "Academic" Dimension and "Attention Deficit Disorder"

"Academic" Social Skills as Derived from Multivariate Statistical Studies	Behaviors Associated with "Attention Deficit Disorder" According to Quay (1986)
1. Accomplishes tasks/assignments independently, displays independent study skills	1. Passive, lacks initiative, easily led
2. Completes individual seatwork/ assigned tasks	2. Fails to finish tasks, lack of perseverance
3. Listens to and carries out teacher directions	3. Inattentive, distractible, poor concentration, short attention span
4. Produces work of acceptable quality for ability level, works up to potential	4. Clumsy, poor coordination
5. Uses free time appropriately	5. Daydreaming

finding (see Table 23) lends further credence to the notion that what Quay (1986) did

for children's problem behavior, this thesis has done for child and adolescent positive

social behaviors.

"Assertion" Dimension

The "Assertion" dimension, derived in just one third of the studies, was

dominated by social skills that reflect a child or youth who might be called outgoing

or extroverted by others. Quay (1986) identified a dimension which appears to be a

polar opposite of "Assertion," which he labeled as "Schizoid-unresponsive." Table

24 represents the contrast between these two apparent poles of child and adolescent

Table 23

Contrast Between the "Cooperation" and "Oppositional Defiant Disorder"

"Cooperation" Social Skills as Derived from Multivariate Statistical Studied	Behaviors Associated with "Oppositional Defiant Disorder" According to DSM-IV
1. Follows instructions/directions	1. Often argues with adults
2. Follows rules	2. Often actively defies or refuses to comply with adult's requests or rules
3. Appropriately uses free time	3. Often deliberately annoys people
4. Shares toys/materials/belongings	4. Is often touchy or easily annoyed by others
5. Responds appropriately to constructive criticism or when corrected	5. Often blames others for his/her mistakes
6. Finishes assignments, completes tasks	6. Is often spiteful and vindictive
7. Keeps desk/room clean	7. Is often angry and resentful
8. Puts toys/work/property away	8. Often loses temper

behavior. The degree of similarity in terms of behaviors subsumed is quite striking, with "Assertion" and "Schizoid-unresponsive" seemingly on opposite ends of a behavioral continuum.

Implications for Future Research and Practice

Based on the frequency with which these dimensions of social skills have been identified over the past 20 years of research, practitioners and researchers would be well advised to focus on these areas in terms of assessment and intervention. Many of the social skills subsumed by these dimensions have already been incorporated into

Table 24

Contrast Between "Assertion" and "Schizoid-Unresponsive" Behaviors

"Assertion" Social Skills as Derived from Multivariate Statistical Studies	Behaviors Associated with "Schizoid-Unresponsive" According to Quay (1986)
1. Initiates conversations with others	1. Will not talk
2. Acknowledges compliments	2. Shy, timid, bashful
3. Invites peers to play, invites others	3. Withdrawn
4. Says and/or does nice things for self, is self-confident	4. Cold and unresponsive
5. Makes friends	5. Likes to be alone
6. Questions unfair rules	6. Secretive
7. Introduces self to new people	7. Stares blankly
8. Appears confident with opposite sex	8. Confused
9. Expresses feelings when wronged	9. Appears sad
10. Appropriately joins ongoing activity/group	10. Lack of interest

excellent, well validated assessment (see Merrell, 1994a; Walker et al., 1995) and intervention (see McGinnis & Goldstein, 1984; Black, Downs, Bastien, Brown, & Wells, 1987) strategies. What this thesis has provided is further empirical support for the five essential social skills dimensions comprising the taxonomy.

Gesten (1976) has noted that competencies in clients must be identified and reinforced to maximize (treatment and research) outcomes. The field of psychology has tended to focus on the identification and elimination of negative behaviors, rather than on the teaching and reinforcement of positive behaviors. It is hoped that the

resulting taxonomy will help to identify appropriate behaviors to reinforce, as well as balance the scales by assessing for positive, as well as negative, behaviors in children and adolescents.

As noted by Blashfield (1984), behavioral taxonomies can have far-reaching effects on how professionals conceptualize, communicate about, and treat well established behavior patterns. Given the results of this thesis, it appears that five major dimensions exist in the area of child and adolescent social skills: "Peer Relations," "Self-Management," "Academic," "Cooperation," and "Assertion." It is advised that clinicians and researchers begin employing this taxonomy to: (a) provide a "nomenclature" by which to refer to the five positive social skill patterns; (b) identify dimensions on which children or adolescents may be strong, or may have deficits; (c) design interventions (e.g., teaching skills, reinforcement system, role playing, etc.), to increase the occurrence of these skills (all of which have been empirically related to important social outcomes for children and youth, such as teacher, peer, and parent acceptance); (d) measure the effects of interventions; and (e) aid in theory development regarding the etiology, prognosis, and response of child and adolescent behavior to interventions.

Limitations of This Study

As has been noted throughout the text, a certain degree of qualitative subjectivity was employed in this research. While steps were taken to minimize (or measure) the impact of this subjectivity (e.g., using specific criterion cutoffs,

explicitly stating how individual factors were grouped into dimensions, using an inter-rater reliability check on the study validity ratings, etc.), one cannot deny that validity and reliability of the results have yet to be confirmed. Perhaps future research efforts will attempt to replicate this study as a means of establishing both its validity and reliability.

Second, while this study has identified the most common social skill dimensions of children and adolescents, it did not attempt to operationalize these skills into discrete behavioral steps. It is hoped that future researchers will address this issue by developing a list of the critical steps to each of these social skills, with evidence to support their validity. Such a list would make an important contribution to efforts in the areas of assessment, diagnosis, and intervention.

A third potential limitation of this study was the combined examination of children ranging in age from 3 to 18 years. Clearly, differences may exist in terms of social skills appropriate for a preschooler, which are inappropriate for a high-school student. However, with one exception (Walker, Steiber, & Eisert, 1991), no major differences were noted between studies targeting older versus younger children. Indeed, most studies that looked for differences in factor structure based on age did not find significant differences. More research in this area would be welcome to help account for and validate this finding.

Finally, a major limitation of this review was the inability to measure the situational specificity of the most common social skills. As has been noted by Gresham (1986), methods that examine situation-specific behaviors correlated with

important social outcomes have received strong empirical support in the literature. Unfortunately, we can only postulate that the majority of skills identified by this review are those that occur in a school setting (given the preponderance of teacher-rating scales). Future research addressing the situation specificity of the skills and dimensions identified in this thesis would make a valuable contribution to the literature.

REFERENCES

American Psychiatric Association. (1994). Diagnostic and statistical manual of mental disorders (4th ed.). Washington, DC: Author.

Anastasi, A. (1988). Psychological testing (6th ed.). New York: Macmillan.

Asher, S. R., & Taylor, A. R. (1981). The social outcomes of mainstreaming: Sociometric assessment and beyond. Exceptional Children Quarterly, 1, 13-30.

Black, D. D., Downs, J., Bastien, J., Brown, L. J., & Wells, P. (1987). S3 workshop manual: Social skills in the school. Boys' Town, NE: Father Flanagan's Boys' Home.

Blashfield, R. K. (1984). The classification of psychopathology: Neo-kraepelinian and quantitative approaches. New York: Plenum.

Chiauzzi, E. (1991). Social skills training for alcoholics: Conceptual, methodological, and treatment issues. In D. G. Gilbert & J. J. Connolly (Eds.) Personality, social skills, and psychopathology: An individual difference approach (pp. 211-227). New York: Plenum.

Cicchetti, D., & Toth, S. L. (1991). A developmental perspective on internalizing and externalizing disorders. In D. Cicchetti & S. L. Toth (Eds.) Internalizing and externalizing expressions of dysfunction (pp. 1-19). Hillsdale, NJ: Lawrence Erlbaum.

Cowen, E. L., Pederson, A., Babigan, H., Izzo, L. D., & Trost, M. A. (1973). Long-term follow-up of early detected vulnerable children. Journal of Consulting and Clinical Psychology, 41, 438-446.

Denham, S. A., & McKinley, M., (1993). Sociometric nominations of preschoolers: A psychometric analysis. Early Education and Development, 4(2), 109-122.

Dodge, K., Coie, J., & Brakke, N. (1982). Behavior patterns of socially and neglected adolescents: The roles of social approach and aggression. Journal of Abnormal Child Psychology, 10, 389-410.

Dodge, K., Pettit, G., McClaskey, C. L., & Brown, M. (1986). Social competence in children. Monographs of the Society for Research in Child Development, 51, 1-84.

Gesten, E. L. (1976). A health resources inventory: The development of a measure of the personal and social competence of primary-grade children. Journal of Consulting and Clinical Psychology, 44(5), 775-786.

Gilbert, B. O., & Gilbert, D. G. (1991). Personality, social skills, and disturbed behavior patterns: An introduction to the issues. In D. G. Gilbert & J. J. Connolly (Eds.) Personality, social skills, and psychopathology: An individual difference approach (pp. 1-15). New York: Plenum.

Gresham, F. M. (1986). Conceptual and definitional issues in the assessment of children's social skills: Implications for classification and training. Journal of Clinical Child Psychology, 15(1) 3-15.

Gresham, F. M., & Elliot, S. N. (1984). Assessment and classification of children's social skills: A review of methods and issues. School Psychology Review, 13, 292-301.

Gresham, F. M., & Elliot, S. N. (1990). Social skills rating system test manual. Circle Pines, MN: American Guidance Service.

Hartup, W. W. (1979). Peer relations and social competence. In M. W. Kent & J. E. Rolf (Eds.), Social competence in children (pp. 150-170). London: University Press of New England.

Hartup, W. W. (1992). Peer relations in early and middle childhood. In V. B. Van Hasselt & M. Hersen (Eds.), Handbook of social development: A lifespan perspective (pp. 257-281). New York: Plenum.

Hoge, R. D. (1983). Psychometric properties of teacher-judgement measures of pupil aptitudes, classroom behaviors, and achievement levels. The Journal of Special Education, 17 (4), 401-429.

Hokanson, J. E., & Rubert, M. P. (1991). Interpersonal factors in depression. In D. G. Gilbert & J. J. Connolly (Eds.), Personality, social skills, and psychopathology: An individual difference approach (pp. 157-184). New York: Plenum.

Lewinsohn, P. M. (1974). A behavioral approach to depression. In R. J. Friedman & M. M. Katz (Eds.), The psychology of depression: Contemporary theory and research (pp. 157-178). New York: Wiley.

Lewinsohn, P. M., Mischel, W., Chaplin, W., & Barton, R. (1980). Social

competence and depression: The role of illusory self-perceptions. Journal of

Abnormal Psychology, 89, 203-212.

Loeber, R. (1985). Patterns of development of antisocial child behavior. Annals of

Child Development, 2, 77-116.

McColloch, M. A., & Gilbert, B. O. (1991). Development and maintenance of

aggressive behavioral patterns. In D. G. Gilbert & J. J. Connolly (Eds.)

Personality, social skills, and psychopathology: An individual difference approach

(pp. 185-210). New York: Plenum.

McFall, R. M. (1982). A review and reformulation of the concept of social skills.

Behavior Assessment, 4, 1-33.

McGinnis, E., & Goldstein, A. P. (1984). Skillstreaming the elementary school

child: A guide for teaching prosocial skills. Champaign, IL: Research Press.

Merrell, K. W. (1993). Using behavior rating scales to assess social skills and

antisocial behavior in school settings: Development of the School Social Behavior

Scales. School Psychology Review, 22, 115-133.

Merrell, K. W. (1994a). Assessment of behavioral, social, and emotional problems.

White Plains, NY: Longman.

Merrell, K. W. (1994b). Preschool and kindergarten behavior scales test manual.

Brandon, VT: Clinical Psychology Publishing.

Quay, H. C. (1986). Classification. In H. C. Quay & J. S. Werry (Eds.),

Psychopathological disorders of childhood (3rd ed., pp. 1-34). New York: Wiley.

Ramsey, E., Patterson, G. R., & Walker, H. M. (1990). Generalization of the antisocial trait from home to school settings. Journal of Applied and Developmental Psychology, 11, 209-223.

Robins, L. N. (1979). Follow-up studies. In H. C. Quay & J. S. Werry (Eds.), Psychopathological disorders of childhood (2nd ed.). New York: Wiley.

Roff, M., Sells, B., & Golden, M. (1972). Social adjustment and personality development in children. Minneapolis: University of Minnesota Press.

Rubin, K. H., & Rose-Krasnor, L. (1992). Interpersonal problem solving and social competence in children. In V. B. Van Hasselt & M. Hersen (Eds.), Handbook of social development: A lifespan perspective (pp. 283-323). New York: Plenum.

Rutter, M. (1979). Protective factors in children's responses to stress and disadvantage. In M. W. Kent & J. E. Rolf (Eds.), Social competence in children (pp. 150-170). London: University Press of New England.

Spence, S. H., & Liddle, B. (1990). Self-report measures of social competence for children: An evaluation of the Matson Evaluation of Social Skills for Youngsters and the List of Social Situation Problems. Behavioral Assessment, 12, 317-336.

Stumme, V., Gresham, F. M., & Scott, N. (1983). Dimensions of children's classroom social behavior: A factor analytic investigation. Journal of Behavioral Assessment, 5, 161-177.

Walker, H. M., Colvin, G., & Ramsey, E. (1995). Antisocial behavior in school: Strategies and best practices. New York: Brooks/Cole.

Walker, H. M., & Hops, H. (1976). Increasing academic achievement by reinforcing direct academic performance and/or facilitating nonacademic responses. Journal of Educational Psychology, 68, 218-225.

Walker, H. M., Irvin, L. K., Noell, J., & Singer, G. H., (1992). A construct score approach to the assessment of social competence: Rational, technological considerations, and anticipated outcomes. Behavior Modification, 16(4), 448-474.

Walker, H. M., McConnell, S. R., & Clarke, J. Y. (1985). Social skills training in school settings: A model for the social integration of handicapped children into less restrictive settings. In R. McMahon & R. D. Peters (Eds.), Childhood disorders: Behavioral-developmental approaches (pp. 140-168). New York: Brunner/Mazel.

Walker, H. M., Steiber, S., & Eisert, D. (1991). Teacher ratings of adolescent social skills: Psychometric characteristics and factorial replicability across age-grade ranges. School Psychology Review, 20(2), 301-314.

Young, K. R., & West, R. P. (1984). Parent training: Social skills manual. Logan: Utah State University.

Youngren, M. A., & Lewinsohn, P. M. (1980). The functional relation between depression and problematic interpersonal behavior. Journal of Abnormal Psychology, 89, 333-341.

APPENDICES

Appendix A:

Study Coding Sheet

CODING INSTRUMENT FOR STUDIES ADDRESSING THE COMMON DIMENSIONS OF SOCIAL SKILLS FOR CHILDREN OR ADOLESCENTS

DATE OF PUBLICATION:_____

AUTHOR(S): _____

TITLE: _____

SOURCE: _____

PURPOSE:

A. GENERAL _____

B. OBJECTIVES _____

I. SUBJECT CHARACTERISTICS:

     A. AGE RANGE_____   B. MEAN AGE_____

     C. GRADE RANGE_____   C. MEAN GRADE_____

     D. GENDER RATIO: _____% MALE, _____% FEMALE

     E. HOW SELECTED _____

     F. OTHER CHARACTERISTICS _____

II. METHODOLOGICAL CHARACTERISTICS:

     A. THEORETICAL ORIENTATION _____

     B. SAMPLE SIZE _____

     C. METHOD OF DATA COLLECTION _____

          1. INSTRUMENT(S)_____

          2. RELIABILITY _____

          3. VALIDITY _____

     D. TYPE OF FACTOR ROTATION _____

     E. OVERALL STUDY VALIDITY RATING (1 = EXCELLENT, 2 = GOOD, 3 = FAIR, 4 = INFERIOR, 5 = UNACCEPTABLE) ____

     BASED ON THE FOLLOWING THREATS:

1. HISTORY____ 2. MORTALITY____ 3. INSTRUMENTATION____

4. TESTING____ 5. SELECTION____ 6. REGRESSION____

7. MATURATION____ 8. OTHER____

1 = no major threat, 2 = possible slight threat, 3 = probable threat (study results still considered valid), 4 = definite threat (plausible alternative explanations for study results), 5 = major threat (most likely other reasons for study results).

III. OUTCOMES

A. NUMBER OF FACTOR(S) FOUND _____

B. NAME OF FACTOR(S)	C. # OF ITEMS FOR EACH FACTOR	D. % VARIANCE ACCOUNTED FOR BY EACH

NOTES _____

_____

_____

_____

_____

Appendix B:

Description of Study Characteristics

Appendix B

Description of Study Characteristics

Author, Year, and Assigned Number	Number of Social Skill Factors	Name of Social Skill Factor(s)	Number of Items per Factor	Total Variance Associated with Each Factor	Sample Size	Name and Method of Data Collection	Type of Factor Rotation Used	Age Range in Years	Grade Range	Gender	Theoretical Orientation	Overall Study Validity Rating
Merrell, 1994a 1	3	(f1) social cooperation (f2) social interaction (f3) social independence	12 11 11	40.0% 9.8% 4.3%	2,855	Preschool and Kindergarten Behavior Scales (Teacher or Parent Rating Scale)	Varimax Orthogonal Rotation	3 to 6	0 to 1	52% male 48% female	Social validity	2
Merrell, 1993 2	3	(f1) Interpersonal (f2) Self-Management (f3) Academic	14 10 8	59.1% 6.7% 5.9%	1,858	School Social Behavior Scales (Teacher Rating Scale)	Varimax Orthogonal Rotation	5 to 18	K to 12	55% male 45% female	Social Validity	2
LaFreniere et al., 1992 3	1	Social Competence	8	na	608	Preschool Socioaffective Profile (Teacher Rating Scale)	Varimax Orthogonal Rotation	2.3 to 6.3	0 to K	54% male 46% female	Behavioral	2
Tremblay et al., 1992 4	1	Prosocial	10	13.11%	2,150	Preschool Social Behavior Questionnaire (Teacher Rating Scalel)	Varimax Orthogonal Rotation	range na mean=6.3 sd=.48	0 to K	54% male 46% female	Behavioral	3

Author, Year, and Assigned Number	Number of Social Skill Factors	Name of Social Skill Factor(s)	Number of Items per Factor	Total Variance Associated with Each Factor	Sample Size	Name and Method of Data Collection	Type of Factor Rotation Used	Age Range in Years	Grade Range	Gender	Theoretical Orientation	Overall Study Validity Rating
Caldwell & Pianta, 1991 5	1	Competence	16	na	350	Early School Behavior Scale (Parent Rating Scale)	Varimax Orthogonal Rotation	range na mean = 5 sd = .33	K	49% male 51% female	Social Validity	3
Walker et al., 1991 6	4	(f1) Self-control (f2) Peer relations (f3) School adjustment (f4) Empathy	12 20 10 6	49.2% 6.3% 2.7% 1.6%	346	Walker-McConnell Scale of Social Competence and School Adjustment-Adol. Version (Teacher Rating Scale)	Oblimin Rotation	na	7-12	na	Social Validity	3
Gresham & Elliott, 1990 7a	3	(f1) Cooperation (f2) Assertion (f3) Self-Control	10 10 10	na	1,563	Social Skills Rating System-Preschool, Elementary, and Secondary Levels (Teacher Rating Scale)	Oblimin Rotation	na	0 to 12	na	Social Validity	2
Gresham & Elliott, 1990 7b	4	(f1) Cooperation (f2) Assertion (f3) Responsibility (f4) Self-control	10 10 10 10	na	1,220	Social Skills Rating System-Preschool, Elementary and Secondary Level (Parent Rating Scale)	Oblimin Rotation	na	0 to 12	na	Social Validity	3

Author, Year, and Assigned Number	Number of Social Skill Factors	Name of Social Skill Factor(s)	Number of Items per Factor	Total Variance Associated with Each Factor	Sample Size	Name and Method of Data Collection	Type of Factor Rotation Used	Age Range in Years	Grade Range	Gender	Theoretical Orientation	Overall Study Validity Rating
Gresham & Elliott, 1990 7c	4	(f1) Cooperation (f2) Assertion (f3) Self-Control (f4) Empathy	10 10 10 10	na	4,177	Social Skills Rating System-Elementary and Secondary Level (Self Report)	Oblimin Rotation	na	3 to 12	51% male 49% female	Social Validity	3
Loranger & Arsenault, 1989 8	1	Respect for Social Rules at School	25	84.5%	744	Class Conduct Questionnaire (Self-Report)	Quartimax Oblique Rotation	12 to 14	na	50% male 50% female	Behavioral	3
Walker & McConnell, 1988 9	3	(f1) Teacher Preferred (f2) Peer Preferred (f3) School Adjustment	16 17 10	53.6% 8.5% 5.5%	896	Walker-McConnell Scale of Social Competence and School Adjustment (Teacher Rating Scale)	Varimax Orthogonal Rotation	na	K to 6	na	Social Validity	2
Bryne & Schneider, 1986 10	3	(f1) Self Control/Social Convention (f2) Academic Respondibility (f3) Social Participation	26 19 20	37% 8% 4%	669	Social Behavior Assessment-Revised (Teacher Rating Scale)	Oblique Rotation	7 to 13	3 to 6	51% male 49% female	Behavioral	2

Author, Year, and Assigned Number	Number of Social Skill Factors	Name of Social Skill Factor(s)	Number of Items per Factor	Total Variance Associated with Each Factor	Sample Size	Name and Method of Data Collection	Type of Factor Rotation Used	Age Range in Years	Grade Range	Gender	Theoretical Orientation	Overall Study Validity Rating
Hightower et al., 1986 11	3	(f1) Frustration Tolerance (f2) Assertive (f3) Task Orientation	11 7 8	28% 20% 27%	1,029	Teacher-Child Rating Scale (Teacher Rating Scale)	Varimax Orthogonal Rotation	na	K to 6	46% male 54% female	Social Validity	2
Clark et al., 1985 12	4	(f1) Academic Performance (f2) Social Initiation (f3) Cooperation (f4) Peer Reinforcement	13 15 17 7	na	194	Teacher Rating of Social Skills (Teacher Rating Scale)	Promax Oblique Rotation	na	K to 6	50% male 50% female	Social Validity	2
Masten et al., 1986 13	1	Sociability-Leadership	15	64%	612	Revised Class Play (Descriptive Matching by Peers-Sociometric)	Varimax Orthogonal Rotation	na	3 to 6	na	Peer Acceptance	2
Matson et al., 1986 14	1	Appropriate Social Skills	23	na	422	Matson Evaluation of Social Skills with Youngers (Self Report and Teacher Rating Scale)	Varimax Orthogonal Rotation	4 to 18	na	50% male 50% female	Behavioral	2

(table continues)   71

Author, Year, and Assigned Number	Number of Social Skill Factors	Name of Social Skill Factor(s)	Number of Items per Factor	Total Variance Associated with Each Factor	Sample Size	Name and Method of Data Collection	Type of Factor Rotation Used	Age Range in Years	Grade Range	Gender	Theoretical Orientation	Overall Study Validity Rating
Stumme et al., 1986

15 | 5 | (f1) Academic Responsibility
(f2) Social Responsibility
(f3) Cooperation
(f4) Compliance
(f5) Participation | 14

15

5
10
3 | 17.0%

20.8%

8.1%
11.7%
4.3% | 184 | Social Behavior Assessment (Teacher Rating Scale) | Varimax Orthogonal Rotation | 6.1 to 15.9 | K to 9 | 77% male
23% female | Behavioral | 3 |
| Pease, Clark et al., 1981

16 | 2 | (f1) Social Activator
(f2) Reassurance | 11

5 | na | 436 | Iowa Social Competency Scale for Preschool Children (Parent Rating Scale) | Varimax Orthogonal Rotation | na | na | na | Behavioral | 4 |
| Weir & Duveen, 1981

17 | 2 | (f1) General (Prosocial)
(f2) Classroom Compliance | 20

4 | 45.4%

7.8% | 1,126 | Prosocial Behavior Questionnaire (Teacher Rating Scale) | Varimax Orthogonal Rotation | 6.3 to 8.5 | na | na | Social Validity | 2 |
| Gesten, 1976

18 | 5 | (f1) Good Student
(f2) Gutsy
(f3) Peer Sociability
(f4) Rules
(f5) Frustration Tolerance | 10
7
10
7
12 | F1+F2+F3+F4+F5 =71% | 592 | Health Resources Inventory (Teacher Rating Scale) | Oblique Rotation | na | 1 to 3 | 52% male
48% female | Social Validity | 2 |

Author, Year, and Assigned Number	Number of Social Skill Factors	Name of Social Skill Factor(s)	Number of Items per Factor	Total Variance Associated with Each Factor	Sample Size	Name and Method of Data Collection	Type of Factor Rotation Used	Age Range in Years	Grade Range	Gender	Theoretical Orientation	Overall Study Validity Rating
Kohn & Rosman, 1972 19	2	(f1) Interest-Participation (f2) Cooperation-Compliance	na	f1 + f2 = 45 %	407	Kohn Social Competence Scale (Teacher Rating Scale)	Varimax Orthogonal Rotation	3 to 5.8	pre-school	54% male 46% female	Peer Acceptance	3

Appendix C:

Individual Factor Items

Table C.1

Individual Factor Items Comprising the "Peer Relations" Dimension

Individual Factor Items (Items printed in bold occurred in at least one third of studies comprising the "Peer Relations" dimension)	Individual Studies
Tries to understand peer's problems/ behavior/needs	1, 2, 7c
Participates in discussions, talks with peers for extended periods	1, 2, 6, 9, 10
Asks for help from others when needed	1, 7c, 12
Stands up for rights of peers, defends a peer in trouble	1, 6, 7c, 10, 12
Has skills or abilities that are admired by peers, participates skillfully in peer activities	1, 2, 6, 9
Comforts peers who are upset	1, 4, 17
Invites peers to play/interact	1, 2, 4, 6, 9, 17
Seeks comfort from adult when hurt	1
Apologizes for accidental behavior	1, 4, 17
Is sensitive to adult problems	1
Shows affection for peers	1, 18
Offers help/assistance to peers when needed	2, 4, 6, 9, 10, 13, 17, 18
Interacts with a wide variety of peers	2, 6, 9
Skillfully initiates or joins conversations with peers	2, 6, 9, 10
Is sensitive to feelings of other students (i.e. empathy, sympathy)	2, 4, 7c, 17
Appropriately enters into ongoing activities with peers	2
Has good leadership skills, assumes leadership role in peer activities	2, 6, 9, 13

Individual Factor Items (Items printed in bold occurred in at least one third of studies comprising the "Peer Relations" dimension)	Individual Studies
Compliments/praises/applauds peers	2, 4, 6, 7c, 9, 10, 12, 17
Appropriately assertive	2
Is sought out by peers to join activities, everyone likes to be with	2, 6, 9, 13, 18
Is looked up to or respected by peers	2
Stops quarrels	4, 17
Shares things (i.e., pencils, sweets)	4, 17, 18
Helps task difficulty	4, 17
Considerate of teacher, offers help to teacher	4, 10, 17
Stops talking when asked to	4, 17
Works in small group	4, 17
Does regular tasks	4, 17
Gets to work rapidly	4, 17
Helps clear up mess	4, 17
Fair in games	4, 13, 17
Spends free time interacting with peers	6, 9
Keeps conversations with peers going	6, 9
Makes friends easily, has many friends	6, 9, 13, 18
Relates well to the opposite sex	6
Changes activities with peers to permit continued interaction	6, 9
Has sense of humor/shares laughter with peers	6, 9, 13, 18

Individual Factor Items (Items printed in bold occurred in at least one third of studies comprising the "Peer Relations" dimension)	Individual Studies
Uses appropriate physical (non-verbal) contact with peers	6
Cooperates with peers	6
Takes pride in appearance	6
Is socially perceptive	6, 9
Feels good about himself/herself, makes positive statements about self	6, 10
Maintains eye contact, uses eye contact in greeting others	6, 9, 10
Accepts people	7c
Asks before using others things	7c
Listen to adults	7c
Smile, wave, or nod	7c, 17
Asks questions requesting information	9
Provides reasons for expressed opinions	10
Initiates informal conversations with adults	10
Initiates/assists in conducting group activities	10, 13
Participates in teacher-initiated discussions	10
Participates in role play	10
Makes relevant remarks in adult conversation	10
Can verbally describe own feelings	10
Makes relevant remarks in class/asks appropriate questions	10
Gives simple directions to peers	10

Individual Factor Items (Items printed in bold occurred in at least one third of studies comprising the "Peer Relations" dimension)	Individual Studies
Questions unjust rules	10, 12
Makes relevant remarks in peer conversations	10
Interacts with peers	13
Participates in games or activities	13, 18
Responds to teasing or name calling by ignoring it or changing the subject	12
Everyone listens to	13
Has good ideas for things to do	13
Is trustworthy	13
Polite	13
Usually happy	13, 18
Will wait their turn	13
Has a lively interest in his/her environment	18
Knows own strengths and weaknesses	18

Table C.2

Individual Factor Items Comprising the "Self-Managment" Dimension

Individual Factor Items (Items printed in bold occurred in at least one third of studies comprising the "Self-Management" dimension)	Individual Studies
Works/plays independently, attempts new tasks without asking for help, autonomous,	1, 3, 15
Smiles and laughs with other children, has good sense of humor	1, 11
Plays with several different children	1
Is accepted and liked by other children, gets along with other children	1, 7a, 11
Makes friends easily, has many friends	1, 11
Is invited by other children to play	1
Is able to separate from parent without extreme distress	1
Adapts well to different environments, behaves appropriately in different school settings	1, 2, 18
Stands up for his/her rights	1
Is confident in social situations	1, 18
Cooperates with others in a variety of situations (i.e., school, family, etc.,)	2, 3, 7a, 7b, 10
Remains calm when problems arise, controls temper when angry	2, 3, 6, 7a, 7b, 7c, 11
Is accepting of other students, is tolerant	2, 3
Will compromise with others when appropriate, will compromise in conflicts	2, 6, 7a, 7b, 7c, 10
Follows class/game rules, accepts imposed limits	2, 7a, 7b, 10, 11, 15, 18

Individual Factor Items (Items printed in bold occurred in at least one third of studies comprising the "Self-Management" dimension)	Individual Studies
Responds appropriately when corrected	2
Is joyful	3
Is secure/relaxed, feels good about self	3, 11, 18
Is integrated, mood is balanced and stable	3, 11, 18
Receives criticism well, accepts criticism from others (i.e., peers, parents, teacher)	6, 7a, 7b, 7c, 10, 18
Expresses anger appropriately	6, 10
Can accept not getting own way	6, 11, 18
Responds to teasing by ignoring, responds appropriately to teasing	6, 7a, 7b, 7c, 15
Copes with being depressed or upset	6
Copes with aggression	6
Accepts consequences of actions, accepts punishment from adults	6, 7c, 10
Responds to behavior management	6
Accepts suggestions and assistance from peers	6, 7a, 10
Gains peer attention in appropriate manner, raises hand to get teachers attention	6, 10, 15
Waits turn	7a, 7b, 10
Responds appropriately to peer pressure	7a
Responds appropriately when hit	7a, 7b
Acknowledges peer's praise	7a
Refuses unreasonable requests, questions unfair rules	7a, 7b, 7c
Ends disagreements calmly	7b, 7c

Individual Factor Items (Items printed in bold occurred in at least one third of studies comprising the "Self-Management" dimension)	Individual Studies
Attends to/follows instructions	7b, 15, 18
Avoids trouble situations	7b, 7c
Speaks in appropriate voice	7b, 10,
Ask adults for help	7c
Talks with classmate when a problem	7c, 18
Asks friends for help	7c
Introduces self	7c
Does nice things for parents	7c
Walks through hall quietly	10, 15
Waits for conversational pauses/for recognition before speaking	10
Enters room and takes seat without disturbance	10, 15
Forms and walks in straight line	10
Asks permission before using another property	10
Responds to requests of adult authority	10, 15, 18
Appropriately apologizes	10
Listen to class speakers	10
Does seatwork assignments quietly	10
Uses "please" and "thank you" with requests, is polite/courteous	10,18
Hangs clothes in required place	10
Tries to help others	11
Copes well with failure	11

Individual Factor Items (Items printed in bold occurred in at least one third of studies comprising the "Self-Management" dimension)	Individual Studies
On-task, completes tasks	15, 18
Is well behaved in school	18
Is trustworthy	18
Lively interest in the environment	18
Faces stress of competition well	18

Table C.3

Individual Factor Items Comprising the "Academic" Dimension

Individual Factor Items (Items printed in bold occurred in at least one third of studies comprising the "Academic" dimension)	Individual Studies
Appropriately transitions between activities	2, 8, 12
Completes individual seatwork/assigned tasks	2, 6, 9, 10, 11, 15, 18
Listens to and carries out teacher directions	2, 6, 8, 9, 10, 12, 15
Asks for clarification of instructions in appropriate manner	2, 8
Accomplishess tasks/assignments independently, displays independent study skills, does original work	2, 6, 9, 10, 11, 12, 15, 18
Completes assigned activities on time	2, 10, 12
Appropriately asks for assitance as needed, asks questions	2, 6, 8, 15
produces work of acceptable quality for ability level, works up to potential	2, 6, 9, 15, 18
Has good work habits	6, 9
Attends to assigned tasks	6, 9
Listens carefully, listens while others are speaking	6, 8, 9
Answers or attempts to answer a question	6, 9, 15
Is personally well organized, brings required materials to school, arrives to school on time	6, 8, 9, 10, 11
Uses free time appropriately	6, 8, 9, 10, 12
Responds to requests promptly	6, 9, 17
Does what he/she agrees to	6

Individual Factor Items (Items printed in bold occurred in at least one third of studies comprising the "Academic" dimension)	Individual Studies
Follows classroom rules in absence of teacher, knows and follows classroom rules, follows game rules	8
Makes use of corrections to improve work	8, 10
Waits quietly for recognition before speaking out in class	8
Gains teacher attention by raising hand, appropriately gains attention	8, 15
Sits straight in desk	8
Avoids cheating	8
Works steadily for required time	8, 10
Does seatwork quielty	8
Disposes of trash in proper container	8
Cleans up after spilling/breaking something	8
Uses classroom equipment appropriately	8
Appropriate conversation, pays attention in conversation to person speaking, waits for pauses in conversation before speaking	8, 12, 15
Responds to convention behavior management techniques	9
Persists at tasks till completed	10
Returns completed homework assignments	10, 18
Turns in neat papers	10
Takes care of possessions	10
Checks works for errors	10
Has positive attitude towards new tasks	10

(table continues)

Individual Factor Items (Items printed in bold occurred in at least one third of studies comprising the "Academic" dimension)	Individual Studies
Ignores peer distractions while working, functions well despite distractions	10, 11, 12, 18
Maintains orderly desk, keeps desk clean and neat	10, 12
Carries out requests responsibly	11
Produces correct work	12
Puts work materials or school property away carefully	12
Looks at teacher when instructed	12
Presents academic work before class or small group	12
Participates in class discussions	15
Greets others	15
Has positive attitude towards self	15
Appropriately expresses feelings	15
Helps others	15
Engages in group activities	15, 17
Accepts consequences	15
Tries to stop quarrels	17
Applies learning to new situations	18
Is interested in school work	18
Is good in arithmetic	18
Is a good reader	18

Table C.4

Individual Factor Items Comprising the "Cooperation" Dimension

Individual Factor Items (Items printed in bold occurred in at least one third of studies comprising the "Cooperation" dimension)	Individual Studies
Is cooperative	1, 12
Follows instructions/directions	1, 5, 7a, 7c, 19
Shows self control, controls temper	1, 12
Appropriately uses free time	1, 7a, 7b, 7c
Sits and listens (to teacher)	1, 5, 7c
Cleans up mess when asked	1
Follows rules	1, 5, 7b, 12, 19
Shares toys/materials/belongings	1, 5, 12
Gives in/compromises with peers	1,12
Accepts decisions made by adults	1
Takes/waits turn with toys/objects	1,12
Responds appropriately to constructive criticism or when corrected	1, 5, 12
Introduces self	7a
Joins group	7a
Finishes assignments, completes tasks	7a, 7b, 7c
Attempts tasks	7a, 7b
Produces correct work	7a
Attends to instruction	7a
Easily makes transition	7a, 12

Individual Factor Items (Items printed in bold occurred in at least one third of studies comprising the "Cooperation" dimension)	Individual Studies
Ignores peer distractions	7a
Keeps desk/room clean	7a, 7b, 7c
Listens to classmates'/peers ideas	7a, 12
Puts toys/work/property away	7a, 7b, 12
Helps with tasks	7b
Volunteers help	7b
Communicates problems, tells others when upset	7b, 7c
Congratulates family	7b
Compliments friends	7b
Asks for assistance	7b
Does homework	7c
Listens to adults	7c
Uses nice tone	7c
Asks before using things	7c, 12
Asks friends for favors	7c
Lets other children go first	12
Tolerates peers who are different	12
Gains attention from peers in appropriate manner	12
Distinguishes truth from untruth	12
Politely refuses unreasonable requests	12
Shows empathy for peers, is aware of others feelings	5, 12
Knows consequences of behavior	12

(table continues)

Individual Factor Items
(Items printed in bold occurred in at least one third
of studies comprising the "Cooperation" dimension)

	Individual Studies
Is organized in play	15
Plays informally	15
Appropriate lunchroom behavior	15
Deals with emergencies	15
Performs before others	15
Accepts teacher's ideas and suggestions	19
Gets along well with other children	5
Seems proud of what he/she has done	5
Is a good sleeper	5
Seems happy	5
Does well when left with a sitter	5
Sleeps in own bed at night	5
Is toilet trained	5
Plays well by him/herself	5
Is a good eater	5

Table C.5

Individual Factor Items Comprising the "Assertion" Dimension

Individual Factor Items (Items printed in bold occurred in at least one third of studies comprising the "Assertion" dimension)	Individual Studies
Invites peers to play, invites others	7a, 7c, 12
Says and/or does nice things for self, is self-confident	7a, 7b, 12
Initiates conversations with others	7a, 7b, 7c, 12, 16
Gives compliments	7a
Acknowledges compliments	7a, 7b, 7c, 12
Makes friends	7a, 7b, 7c
Volunteers to help peers, gives directions	7a, 16
Tells teacher when treated unfairly	7a
Helps teacher	7a
Questions unfair rules	7a, 11, 18
Introduces self to new people	7a, 7b, 12
Appropriately joins ongoing activity/group	7a, 7b, 12
Stands up for peers	7a
Compliments opposite sex	7a, 7c
Appears confident with opposite sex	7a, 7b, 7c
Expresses feelings when wronged	7a, 7b, 18
Shows interest in things/activities, tries new things when playing alone	7b, 16
Is liked by others	7b
Receives criticism well	7b

(table continues)

Individual Factor Items
(Items printed in bold occurred in at least one third
of studies comprising the "Assertion" dimension)

	Individual Studies
Participates in games/activities	7b, 7c, 12
Changes activities	7b
Accepts friends' ideas	7b
Invites peers home	7b, 16
Reports accidents	7b
Ignores classmates clowning	7c
Ignores children teasing	7c
Asks adult for help	7c, 16
Finishes classroom work	7c
Does homework	7c
Asks for a date	7c
Confident on dates	7c
Defends own views under group pressure	11, 18
Comfortable as a leader	11, 18
Participates in class discussions	11, 18
Expresses ideas willingly	11, 18
Faces the pressure of competition	11
Interacts with peers	12
Interacts with a number of different peers	12
Displays sense of humor	12
Nonverbally interacts with other children	12
Uses appropriate tone of voice	12

(table continues)

Individual Factor Items (Items printed in bold occurred in at least one third of studies comprising the "Assertion" dimension)	Individual Studies
Gives understandable explanations	16
Tells correct home address	16
Understands verbal instructions	16
Talks to parent(s) about things	16
Asks to go to neighbors	16
Suggests things the family can do together	16
Initiates activities with others	16
Is spontaneous	18

Appendix D:

Bibliography

Bibliography

The following references are studies included in the meta-analysis.

Bryne, B. M., & Schneider, B. H. (1986). Student-teacher concordance on dimensions of student social competence: A multitrait-multimethod analysis. Journal of Psychopathology and Behavioral Assessment, 8 (3), 263-279.

Caldwell, C. B., & Pianta, R. C. (1991). A measure of young children's problem and competence behaviors: The Early School Behavior Scale. Journal of Psychoeducational Assessment, 9, 32-44.

Clark, L., Gresham, F. M., & Elliott, S. N. (1985). Development and validation of a social skills assessment measure: The TROSS-C. Journal of Psychoeducational Assessment, 4, 347-356.

Hightower, A. D., Work, W. C., Cowen, E. L., Lotyczewski, B. S., Spinell, A. P., Guare, J. C., & Rohrbeck, C. A. (1986). The Teacher-Child Rating Scale: A brief objective measure of elementary children's school problem behaviors and competencies. School Psychology Review, 15 (3), 393-409.

Kohn, M., & Rosman, B. L. (1972). A social competence scale and symptom checklist for the preschool child: Factor dimensions, their cross-instrument generality, and longitudinal persistence. Developmental Psychology, 6(3), 430-444.

La Freniere, P. J., Dumas, J. E., Capuano, F., & Dubeau, D. (1992). Development and validation of the Preschool Socioaffective Profile. Psychological Assessment, 4 (4), 442-450.

Loranger, M., & Arsenault, R. (1989). Self-evaluation questionnaire of social skills for adolescents in high school. Journal of Adolescent Research, 4(1), 75-91.

Masten, A. S., Morison, P., & Pellegrini, D. S. (1985). A revised class play method of peer assessment. Developmental Psychology, 21(3), 523-533.

Maston, J. L., Rotatori, A. F., & Helsel, W. J. (1983). Development of a rating scale to measure social skills in children: The Matson Evaluation of Social Skills with Youngsters (MESSY). Behavior Research and Therapy, 21(4), 335-340.

Pease, D., Clark, S., & Crase, S. J. (1981). The Social Competency Scale for Preschool-Age Children: Its development and factorial validity. Educational and Psychological Measurement, 41, 851-861.

Tremblay, R. E., Vitaro, F., Gagnon, C., Piche, C., & Royer, N. (1992). A prosocial scale for the Preschool Behavior Questionnaire: Concurrent and predictive correlates. International Journal of Behavioral Development, 15(2), 227-245.

Walker, H. M., & McConnell, S. R. (1988). The Walker-McConnell Scale of Social Competence and School Adjustment test manual. Austin, TX: Pro-Ed.

Weir, K., & Duveen, G. (1981). Further development and validation of the Prosocial Behavior Questionnaire for use by teachers. Journal of Child Psychology and Psychiatry, 22(4), 357-374.

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