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**CORRELATION OF A SOCIAL SKILLS SELF-RATING SURVEY AND A
TEACHER RATING INVENTORY FOR STUDENTS AT A RESIDENTIAL SCHOOL
FOR THE DEAF**

A Thesis

Presented to the Department of Counseling

and the

Faculty of the Graduate College

University of Nebraska

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

University of Nebraska at Omaha

by

James Thomas Haley

November 2000

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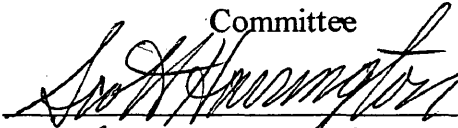


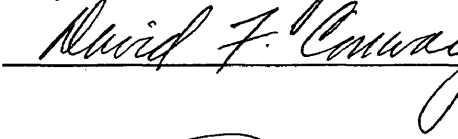
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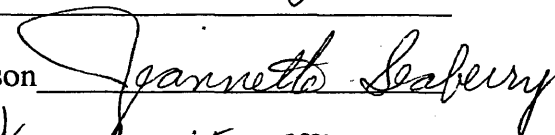
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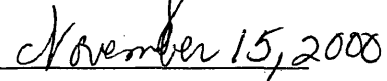




Chairperson



Date



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Abstract

Students aged 12 to 15 at a Midwestern residential school for the deaf completed the Matson Evaluation of Social Skills for Deaf and Hard-of-Hearing Youngsters (MESSY-DHH). Faculty at the school completed the Meadow Kendall Social Emotional Assessment Inventory (SEAI) to rate the behavior of the same students. Pearson's correlations were conducted to determine if relationships existed between scores on the MESSY-DHH and the SEAI. Results indicated inconsistent correlations between scores on the MESSY-DHH and individual scale scores on the SEAI.

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CHAPTER ONE

Introduction

Social skills are an important concern within the field of deafness. From evaluating the merits of mainstream versus residential schools to counteracting developmental delays, social skills are at the core of various problems facing deaf children and adolescents. The term 'social skills' describes a variety of behaviors and cognitions necessary for effective functioning in social situations (Conger & Conger, 1986). Some of these behaviors may include socializing with mainstream peers, appropriate expression of feelings, resolving conflict, and various other interpersonal abilities.

Although a uniform definition of social skills does not exist (Conger & Conger, 1986), remediation of social skill deficits is often cited as a component of treatment of many such social problems (Antia & Kreimeyer, 1997; Cartledge, Cochran, & Paul, 1996; Leigh & Stinson, 1991; Lytle, Feinstein, & Jones, 1987; Rasing & Duker, 1993). Frank Gresham, a prominent social skills researcher, defines social skills as behaviors used to perform a social task whereas social skills deficits indicate an absence of these same behaviors. Gresham purports social skills deficits may occur for a variety of reasons including inadequate skill mastery, inadequate performance of the skill, and ineffective self-control (Gresham, 1998).

Accurate assessment is the first step to remediation of social skills deficits (Conger & Conger, 1986; Greenan & Winters, 1989). Accurate assessment occurs most efficiently with information about a student from a variety of sources (such as rating scales, self-reports, and role playing) using as many methods of input as possible (Elliot, Sheridan, &

Gresham, 1989; Gresham, 1998). A variety of assessments measuring social skills and social competence exist; however, few have been validated for use with the deaf population.

Deaf children have a special challenge in terms of social skills acquisition. More than 90% of deaf children have hearing parents (Calderon, Bargones, & Sidman, 1998; Lederberg, 1993; Luterman, 1987; Meadow, 1980; Vaccari & Marschark, 1997). Lederberg (1993) identified factors influencing developmental delays in deaf children such as experiential deprivation, lack of autonomy, and lack of adult role models who are deaf. Many hearing parents cannot communicate via sign language beyond a basic level, making meaningful or deeper interaction difficult (Vaccari & Marschark, 1997). Inefficient communication may lead to frustration and decreased interaction while increasing the chance for misunderstanding (Raymond & Matson, 1989). Many deaf individuals must learn to adapt to the hearing world and glean whatever social information is possible visually while remaining oblivious to many nuances and variations of verbal communication that may be incidental learning such as overhearing adult communication (Lederberg, 1993). Foster (1989) suggests that hearing and deaf people may judge behavior of some deaf individuals as 'deviant' without considering the context in which the behavior was learned. Deaf children may learn adaptive behaviors that satisfy immediate needs but become barriers to interaction with others, such as aggressiveness or learned passivity. In a survey of counselors working with deaf children, frequently identified problem areas included inappropriate social relations, inappropriate peer relations, and aggressiveness (Ziezula & Harris, 1998).

Currently, the Meadow-Kendall Social Emotional Assessment Inventory (SEAI) is the only measure designed for assessing social behavior of deaf children (Meadow-Orlans, 1983). Adults familiar with the student being rated should complete the SEAI. The adults rate the subject on 59 items describing observed behaviors. The SEAI provides three scores for three different scales: Social Adjustment, Self-Image, and Emotional Adjustment, with a range of zero to four. The SEAI does not yield a total score.

The Matson Evaluation of Social Skills for Deaf and Hard-of-Hearing Youngsters (MESSY-DHH) focuses on assessing social skills frequently taught in school. The MESSY-DHH was originally developed for hearing children but has been modified and used with a population of students at a high school for the deaf in Washington, D.C. (Newburg-Rinn, 1995). The MESSY-DHH provides a total score as well as six subscale scores: Kind, Non-irritating, Sensitive, Sociable, Non-arrogant, and Mature. However, the MESSY-DHH purports to emphasize observable behavior and not emotional behavior. Both of the above tools have been tested for reliability and validity with various similar rating scales but have not been tested in conjunction with each other.

Statement of the Problem

In examining the usefulness of the above inventories for assessing social skills deficits, it may be valuable to determine whether internal (subject) and external (teacher) ratings concur for assessments developed specifically for deaf subjects:

- 1.) Is there a correlation between the student self-rated scores on the MESSY-DHH and teacher-rated scores on the SEAI for students aged 12 to 15 at a Midwestern residential school for the deaf?

- 2.) Does a relationship exist between scores on each subscale of the two assessments (Kind, Non-Irritating, Sensitive, Sociable, Non-Arrogant, and Mature for the MESSY-DHH; Self-Image, Social Adjustment, and Emotional Adjustment for the SEAI)?
- 3.) Do any statistical relationships or lack of relationships differ when compared according to gender and age?

Statement of the Hypothesis

This study examines if there is a significant positive correlation between self-rated scores on the MESSY-DHH and teacher rated scores on the SEAI for students age 12 to 15 at a Midwestern residential school for the deaf. It is hypothesized that student scores on each of the six MESSY-DHH subscales will significantly and positively correlate with teacher rated scores on the Social Adjustment scale for the SEAI but not between the MESSY-DHH subscales and the SEAI Self-Image or Emotional Adjustment scales. The significant correlations will occur similarly among differences in gender and age.

Significance of the Study

If a significant correlation between the two assessments exists, it may provide support for the cooperative use of the two assessment tools in determining any connection between awareness and performance for the rated level of social functioning. Results for students age 12 and 13 will add to inadequate standardizing information provided for the MESSY-DHH. Additionally, this research may augment a more global method of evaluating change in social abilities within a deaf population over a period of time by providing support for two assessments used concurrently. Using assessments to measure

change can be valuable to formally determine the effectiveness of a social skills intervention.

Assumptions

Due to the volunteer basis of subject recruitment, many restrictions are necessary.

The following are assumptions due to the design structure:

- 1.) By controlling for reading level as well as providing an interpreter, language or understanding is not a confounding factor for the self-report inventory.
- 2.) Teachers' ratings of student behavior in the classroom over several months are representative of the typical behavior displayed rather than exceptional behavior.
- 3.) Students responded to statements honestly and not as is socially expected.

Limitations

- 1.) Due to the lack of random assignment and the predominantly Caucasian population makeup in this region of the United States, this sample is not representative of any population other than that of Iowa School for the Deaf.
- 2.) Because informed consent is required for participation in this study, subjects will themselves decide whether or not to participate. Parents will be contacted for consent prior to approaching the subjects themselves.

Definition of Terms

Mainstream program—Public schools in which a deaf student participates in the general education curriculum and accesses services aided by an interpreter.

QAST—Quality Assurance Screening Test; a validation for sign language interpreters rating from Level I(Entry) to Level V(Accomplished). Interpreting skill is judged on the

basis of clarity and versatility. At Level V, the highest QAST level attainable, the interpreter is considered to be expressively and receptively functional in a great majority of interpreting situations.

Residential school—A state-funded school in which a portion of the student body lives on campus during the school year.

Social competence—An evaluative term based on the judgment of others that a person has performed social tasks adequately. “The degree to which children learn to establish, develop, and maintain satisfactory relationships with peers and adults” (Gresham, 1998).

Social skills—The specific behaviors an individual uses to perform a social task (Gresham, 1998).

Social skills deficits—An inability to acceptably perform social tasks. This may occur due to acquisition, performance, or fluency (rendering an awkward performance) deficits (Gresham, 1998).

CHAPTER TWO

Review of Related Research and Literature

The importance of mastery of social skills is evident from a diagnostic perspective. Social skills deficits can implicitly influence many clinical disorders such as depression, schizophrenia, alcoholism, sexual disorders, social isolation in children, and juvenile delinquency (Conger & Conger, 1986). According to Gresham (1998), deficits in social competence are increasingly present in psychiatric diagnosis with each revision of the Diagnostic and Statistical Manual of Mental Disorders. Gresham (1998) adds that children experiencing social difficulties are at risk for increased psychological problems as adults. In deaf children, this importance is evident due to the inherent vulnerability to social isolation via communication difficulties (Freeman, Malkin, & Hastings, 1975; Roberts & Hindley, 1999).

Ziezula and Harris (1998) surveyed directors of counseling services at various residential schools, day schools, and public/mainstream programs for deaf children as a follow-up to a survey by Curtis (1976). The survey results indicated that in the 1970s as well as the 1990s deaf students saw counselors because of relationship problems (with parents, siblings, and peers), ineffective communication, low self-esteem, inability to make decisions, and feelings of social isolation. The recent study indicated aggressive behavior and sexually acting out are currently additional concerns. Recommendations included more aggressively seeking qualified members of underrepresented groups (such as deaf and male individuals) for counseling education programs as well as seeking more economical methods for intervention (such as group counseling). Purportedly, such

changes will improve services for deaf students by offering ease of communication and role models for behavior as well as serving a greater number of consumers.

Vernon and LaFalce-Landers (1993) illustrate difficulties of social isolation in a longitudinal study of 57 deaf students identified as talented and gifted (IQ > 130). Examining routine psychological assessments through educational programs and Vocational Rehabilitation programs, the study explored the incidence of continuing education as well as incidence of mental illness. Those students who did not become involved in the deaf community did not exhibit satisfactory adjustment due to a lack of stimulation, social support, and coping skills. Additionally, the study indicated that for almost 40 percent of the subjects isolation and negative feelings the subjects had about themselves and their deafness led to depression, substance abuse, and suicidal behavior.

As Harris, VanZandt, and Rees (1997) describe, students in a public school setting often have limited social interactions with hearing peers, leading to isolation and alienation. Feelings of isolation and alienation are exacerbated by the limited opportunity for deaf students to be with deaf peers within a mainstreamed setting. In spite of differing social opportunities, Cartledge, Paul, Jackson, and Cochran (1991) found no significant difference in teacher ratings of social behavior between hearing-impaired students at a residential school and hearing-impaired students at public schools. However, a later study indicated public school students self-rated their social skills higher than did residential students (Cartledge, Cochran, & Paul, 1996).

The source of social isolation is difficult to pinpoint. A deaf child's opportunities to acquire social behaviors through interaction with parents may be limited by the parent's

lack of fluency or comfort level (Antia & Kreimeyer, 1997). Additionally, children who are deaf may less frequently have opportunities to play and interact with peers who can communicate with them, when compared to hearing children. Rubin's study (as cited in Antia & Kreimeyer, 1997) indicated that reduced social contact might lead to fewer opportunities to acquire skills and communication vital for developing friendships.

Adolescent self-image may be shaped by developmental progress and vice versa. Students must be allowed to make independent social decisions and learn via self-evaluations as well as trial and error. Participation in activities, relatedness (feeling of personal connection or belonging), and social competence are ways of self-evaluating social relationships. Peer availability and communication competence are possible factors in determining social competence (Leigh & Stinson, 1991).

Gresham (1998) delineated the first step in the process of social skills remediation as accurate identification of the child's social difficulties. Gresham differentiates between the expectations of a teacher or parent and the expectations of peers as competing factors in shaping the social behavior of a child. From a social learning perspective, the actual behavior exhibited in a social setting comprises the social skills; the evaluation of such behavior by others determines social competence.

Conger and Conger (1986) identify a standard format for assessment of social behavior in the use of self-report measures concurrently with judges' ratings. This combination purports to provide correlations between the two methods and discriminates among students whose perceptions do not fit the judges' perceptions. However, the review of current assessments available indicated little support exists for many comparable

tools. Differences may occur in terms of judgments versus behavior; Conger and Conger (1986) question whether many social skills assessments are developed and supported from solely a conceptual basis. Additionally, the researchers believe evaluations of social skills must be conducted independently of judgments of social competence.

Greenan and Winters (1989) examined the correlation of student self ratings and teacher ratings on an interpersonal relations skills assessment for a population of 116 special needs students and 59 instructors in a vocational training program. The special needs included learning disabilities, visual impairment, mild mental handicaps, and other physical or emotional impairments. The assessments, developed by the researchers themselves, consisted of 20 questions each on a Likert-type scale. Scores did not consistently correlate indicating little agreement about the actual interpersonal skill level of the students. The researchers acknowledged that either or both of the ratings might be inaccurate due to teacher bias, unfamiliarity, student self-esteem, or lack of knowledge about the language used. The researchers recommended that, when using assessments such as the implemented student self-ratings and teacher ratings, interpretation should be tentative and validated by comparison with criterion measures.

Assessment tools measuring social skills of deaf children are notably scarce. This paucity may result from a lack of research with appropriate population norms or from the common assumption that deaf children are simply hearing children with decreased auditory ability. From these perspectives, researchers have explored social skills assessments originally developed for hearing children and may assume a result to be similar for deaf and hearing children alike. "There is little knowledge of many forms of validity for

psychological assessment methods and tools when used with deaf clients” (Brauer, Braden, Pollard, & Hardy-Braz, 1998, p. 312). Many subject pools are from public school or mainstream environments where academic achievement for deaf students is typically higher because students at mainstreamed schools typically have lesser degrees of deafness and fewer additional disabilities (Brauer, Braden, Pollard, & Hardy-Braz, 1998).

In a recent review of assessment tools available for deaf subjects, Brauer, Braden, Pollard, and Hardy-Braz (1998) describe social-emotional assessment as the most difficult to conduct due to a lack of nonverbal tests, lack of supportive research, and difficulty defining utility or dysfunction of behavior. Tests not created specifically for use with deaf subjects often do not consider the implications of deafness on normal developmental behavior. Additionally, construct irrelevant variance is a common result of test bias. Irrelevant factors such as a lack of knowledge of English may interfere with the intent of measuring another area of skill or knowledge.

Comparing ratings between teachers and students can be valuable in determining whether the same construct is being measured as well as providing assessment information. Comparison may identify varying perspectives and attempts to contrast behavioral assessment in a way that more formal assessments may not address. A student may view an inappropriate classroom behavior as socially acceptable in the appropriate classroom situation. Research has compared self-ratings and teacher ratings for the same scale (Grennan & Winters, 1989); however, self-ratings of a social skills scale by deaf subjects have not been measured for correlation with teacher ratings of a social-emotional scale.

The Matson Evaluation of Social Skills for Deaf and Hard-of-Hearing Youngsters (MESSY-DHH) is a 70-item inventory designed to measure several different aspects of a student's social behavior. Specifically, the MESSY-DHH was developed to measure social-emotional areas that are feasible to change within a school setting. The MESSY-DHH uses a five point Likert-type scale (1=not at all, 5=very much) to measure verbal and non-verbal behaviors that determine interpersonal effectiveness, providing scores for six scales (Newburg-Rinn, 1995):

Kind: the degree to which a person does things that generally are perceived as kind, friendly, and promoting of smooth social relationships

Non-irritating: the degree to which a person does not engage in social behavior that irritates or annoys others

Sensitive: the degree of sensitivity to the thoughts and feelings of others

Sociable: the degree to which a person spends time with others and takes actions to promote this

Non-arrogant: the degree to which a person tries to avoid standing out as “the best”, “the winner”, or assertive

Mature: amount of skills a person has, and amount of responsibility a person takes, in preventing and solving conflicts

The MESSY-DHH was originally developed for hearing students but was later modified for use with deaf and hard-of-hearing students due to its emphasis on educational rather than clinical assessment (specific school-related behaviors rather than personality traits). The MESSY-DHH was normed at Model Secondary School for the Deaf in

Washington, D.C., with a sample of 260 students age 14 to age 21 (Newberg-Rinn, 1995). Validity measures indicated a positive correlation of the Total score to teacher nomination of students with high social skills as well as varying correlations with student scores on the Stanford Achievement Test subscales such as the Reading Comprehension Scale. Two forms of the MESSY-DHH exist: a student-rated form and a teacher-rated form. For the purposes of this study, only the student-rated form will be examined.

The Meadow Kendall Social Emotional Assessment Inventory (SEAI) is a 59 item assessment to rate observable behaviors within the classroom setting. The behaviors fit into three categories or scales: Social Adjustment, Self-Image, and Emotional Adjustment. No operational definition is provided for each scale. Each item is rated on a four-point scale (T=very true, t=true, f=false, F=very false) with a fifth option (?=can't rate) available. Persons who know the student very well (such as parents or teachers) should complete the SEAI. According to Cartledge, Cochran, and Paul (1996), teachers lacking in training or experience with hearing impaired students may more easily misperceive the students' behaviors and evaluate them more severely. The SEAI is designed for students age 7 to 21 with separate norms for ages 7-15 and 16-21. Research for the SEAI is well-established; norms are based on data collected from more than 2400 students enrolled in 10 different programs for the hearing impaired (Meadow-Orlans, 1983).

According to Newburg-Rinn (1995), the MESSY-DHH was developed to counterbalance the emphasis of the SEAI on emotional variables within the teacher-rated assessment. The Matson Evaluation of Social Skills for Youngsters (MESSY, original version) was chosen for modification because it measures social behaviors that may be

taught in school versus clinical assessments that evaluate emotional problems or psychopathology. Newburg-Rinn (1995) posits that the SEAI is oriented to a younger population (not high school students) and includes a ‘substantial’ number of items that address emotional disturbance which are in turn less teachable aspects of social behavior. The original MESSY self-report version contains different scales than the current MESSY-DHH scales. Newburg-Rinn describes the adaptation process as revising the question structure by removing idioms, rephrasing sentences, deleting culture-irrelevant questions, and adding additional social-emotional development issues needed at the high school level. Additionally, “the logic behind these changes was verified by a native ASL signer” (Newburg-Rinn, 1995, p. 17) as well as other professionals such as four deaf counselors, school psychologists, a language content specialist, and ‘several others’.

Upon examination, the SEAI contains 23 questions scored on the Social Adjustment scale, 23 questions scored on the Self-Concept scale, and 13 questions scored on the Emotional Adjustment scale. The MESSY-DHH is intended to focus upon a variety of behaviors useful for social functioning. However, the MESSY-DHH does not effectively define the difference between educational and clinical assessments, and admittedly addresses social-emotional development.

Self-report inventories have benefits and drawbacks. They are easily administered to a large group of hearing impaired students at the same time. Conversely, respondents may answer the questions in a manner they see as socially favorable. Additionally, some deaf students may have difficulty with the reading level of most self-report inventories (Greenan & Winters, 1989; Wolf & Schloss, 1990).

As Cohen, Swerdlik, & Smith (1992) describe, presenting written instructions at an appropriate reading level, using a certified interpreter, or pantomiming instructions and questions if the tester is skilled at nonverbal communication can solve potential communication problems in psychological assessment. This procedure may alleviate any confusion due to a borderline functional reading level that may provide a barrier to the goals of the assessment.

Rating scales are similarly useful. To optimize the usefulness of the scale, the person completing the scale must be familiar with the rated student. Rating scales can be quickly completed and can provide a quantitative measure of behavior. However, rating scales are not completely objective and may be subject to personal bias (Wolf & Schloss, 1990).

To date, research has not directly correlated student scores of the MESSY-DHH with ratings on the SEAI. Because one inventory was developed with influence from another, it would seem a logical comparison. The SEAI has much research support over a number of years whereas the MESSY-DHH is relatively unsupported. Although differences are noted in the development of the MESSY-DHH, the identified deviance of the MESSY-DHH is in the area of emotional assessment. The MESSY-DHH focuses primarily on the social behaviors rather than internal feeling (Newburg-Rinn, 1995).

CHAPTER THREE

Method

Research Approach and Design

This was a correlational study examining if a relationship exists between student scores on the MESSY-DHH and teacher ratings of students on the SEAI. The research hypothesis states that statistical relationships exist between scores on the MESSY-DHH subscales and the SEAI Social Adjustment subscale.

Subjects

Twenty-four students at Iowa School for the Deaf (ISD) participated in this study. The students were 12 to 15 years old and were enrolled in the standard curriculum grades 6 through 10, not the curriculum for developmentally delayed students. Each student had a Stanford Achievement Test reading comprehension level of at least 2nd grade, commensurate with the MESSY-DHH's recommendations. The mean reading level was nearly 5th grade (4.85).

The 24 students consisted of nine girls and fifteen boys, including seven 6th graders, five 7th graders, five 8th graders, three 9th graders, and four 10th graders. The mean age of participants was 14 years 2 months, with means of 14 years 4 months for boys and 13 years 11 months for girls. Students were divided into two age groups: 12-13 years and 14-15 years (due to the established norms of the MESSY-DHH for age 14-15). The majority of subjects were Caucasian, with two Asian-American students and two Mexican-American students participating.

Archival information obtained from subjects' cumulative files indicated fourteen students had attended public schools for at least one year, with an average of 4.9 years of public school attendance. Ten students never attended an inclusive public school program. Of the 24 students involved, ten students were enrolled in at least one class at a nearby public school.

Instrumentation

Internal consistency of the MESSY-DHH using Cronbach's alpha measured at .83 with varying Cronbach's alphas from .62 to .86 for the six individual scales. Reported measures of validity include partial concurrence with the Stanford Achievement Test Reading Comprehension Scale, faculty nominations of student social skills, and educational program persisters or leavers.

Reliability and validity scores indicate SEAI ratings of adolescents correlate moderately with scores on inventories such as the Child Behavior Checklist, the Walker Problem Behavior Identification Checklist, and the Health Resources Inventory. Additionally, separate studies indicated significant correlations between SEAI rated scores by academic advisors and dormitory counselors as well as between fathers and mothers (Meadow-Orlans, 1983).

Procedure

Prior to approaching the subjects, a parent or guardian of each student was contacted. Risks and benefits of student participation in the research were explained to the parent/guardian, as well as an explanation of precautions taken to ensure their child's comfort. The voluntary nature of the students' participation was emphasized, such as the

fact that a student could leave the study without consequence if at any time he/she felt uncomfortable and the students' signing an assent form prior to participation. The parent then decided if he/she would allow his/her student to be approached about participation in the research. Of the 35 students whose parents were contacted, two parents chose not to allow their children to participate. Additionally, one parent was unable to be contacted. Three students were absent May 10th and five students elected not to participate after the process of informed consent.

The data were collected at Iowa School for the Deaf over the course of one week between May 10th and May 16th, 2000. During the process of informed consent, it was explained that the MESSY survey does not have 'right' and 'wrong' answers, only opinions. The students learned that the responses would not be made public and any student could withdraw at any time. Students were informed that those who completed the survey were allowed to attend a thank-you lunch. Each student would decide whether or not to participate. Students who assented to participate signed an assent form. Five students chose not to participate and to instead return to class. No students chose to leave after beginning the survey.

Nineteen students completed the MESSY-DHH from 2:15 PM until 3:15 PM on May 10th. Students were excused early from classes and directed to a conference room on ISD's campus. As the assent process was explained, students decided whether to participate or to return to class.

A Level V QAST-validated interpreter was present and facilitated explanation of the above information to the students as well as interpreting the test questions

sequentially. Two adult assistants were available for individual student questions; students were not allowed to directly question the interpreter. The assistants were instructed to answer student questions about the survey as simply and non-directively as possible.

Students were allowed as much time to complete the survey as needed. Students with questions raised their hands and waited for an available staff member to help explain. Most students finished within 10-20 minutes. The last student completed her survey within approximately 30 minutes. According to a report by the interpreter, only one student appeared to watch the interpreter's recitation of the questions; she appeared to follow him for only two to three questions. Students did not confer with each other during completion of the survey.

Five students unable to attend in the afternoon completed the MESSY-DHH forms May 10th from 7:30 PM to 8:00 PM. The assent process was explained in the same manner and students were allowed the option of not participating in the study. A professional interpreter was present for clarification purposes and to help answer any questions the students had. Procedural criteria were identical as above except for the interpreter describing each question of the assessment. This was deemed unnecessary due to the older age and higher reading level of students present at the evening session (three sophomores, one freshman, and a sixth grader with an advanced reading level). All students completed the MESSY-DHH within 20 minutes.

Five faculty completed the SEAI between 2:15 PM and 3:30 PM on May 10, rating 14 students concurrently as students completed the MESSY-DHH. Six other faculty were contacted outside of the testing environment to complete the remaining ten

SEAI surveys at their leisure during the week of May 10 to May 16. Each faculty held a certification in deaf education. Of the eleven faculty, three were male and four were deaf or hard-of-hearing. Faculty and student subjects were matched for those students currently enrolled in the faculty member's class. One exception was the participation of the middle school counselor; she rated four students with whom she had daily interaction. No faculty rated more than four students.

The researcher totaled the results and conducted a Pearson's correlation comparing the total MESSY-DHH score with results from each of the three scales of the SEAI. Additionally, each subscale of the MESSY-DHH (Kind, Non-Irritating, Non-Arrogant, Sociable, Sensitive, and Mature) was tested for correlation with each scale of the SEAI. A level of significance was predetermined at $p=.05$. Student scores were examined as a group as well according to gender and age category.

CHAPTER FOUR

Results

Scores of the participants varied greatly, as well as faculty ratings of the participants. Total scores on the MESSY-DHH ranged from 208 to 330 with a mean of 266.88 and a standard deviation of 26.27. Scores of male subjects ranged from 225 to 320 with a mean of 269.5 and a standard deviation of 30.42; the standardized mean for 14 and 15 year old males was 249. For female subjects, scores ranged from 245 to 280 with a mean of 262.5 and a standard deviation of 13.84; the standardized mean for 14 to 15 year old females was 259. Scores on the individual scales of the MESSY-DHH showed the following means:

Table 1

Descriptive Information on the Survey Scales for the MESSY-DHH

All subjects (n=24)	Kind	Non-Irr	Sens.	Soc.	Non-Arr.	Mat.	
Mean	92.29	71.33	30.58	27.77	22.98	21.96	
SD	14.14	9.64	5.55	4.32	5.31	4.33	
Range	59-110	53-87	21-49	18-35	13-3	13-30	
All males (n=15)	Total	Kind	Non-Irr	Sens.	Soc.	Non-Arr.	Mat.
Mean	269.5	92.8	72.4	29.73	29.8	22.03	22.8
SD	30.42	13.43	10.32	4.51	3.39	5.81	4.65
Range	225-320	66-109.5	53-87	21-39	22-35	13-30	13-30

Males age 12-13 (n=7)

Mean	274.29	91.5	77.29	30.43	29.71	22.86	22.57
SD	28.54	16.12	6.84	5.07	3.61	6.24	5.63
Range	225-320	66-107	66-87	23-39	22-34	13-30	13-30

Males age 14-15 (n=8)

Mean	265.31	93.94	68.13	29.13	29.88	21.31	23
SD	31.37	10.38	10.94	3.85	3.18	5.3	3.57
Range	230-305	72-109.5	53-87	21-34	26-35	13-27	15-27

All females (n=9)

Mean	262.5	91.44	69.56	32	24.39	24.56	20.56
SD	13.84	14.46	7.4	6.45	3.21	3.44	2.95
Range	245-280	59-110	54-78	25-49	18-29	20-31	15-25

Females age 12-13 (n=5)

Mean	264.2	92.6	70.6	29.6	25.2	25	21.2
SD	13.04	10.01	5.43	2.8	1.94	3.85	3.54
Range	245-280	80-110	63-78	25-33	22-28	22-31	15-25

Females age 14-15 (n=4)

Mean	260.38	90	68.25	35	23.38	24	19.75
SD	14.5	18.48	9.12	8.22	4.08	2.74	1.64
Range	245-280	59-107	54-78	28-49	18-29	20-27	17-21

Faculty rated scores on the SEAI indicated overall means of 3.20, 3.30, and 3.60 for the Social Adjustment, Self-Image, and Emotional Adjustment scales respectively.

The means, ranges, and standard deviations are illustrated as follows:

Table 2

Descriptive Information on the Survey Variables for the SEAI

Variable/Scale	Social Adjustment	Self-Image	Emotional Adjustment
Means (M & F)	3.20	3.30	3.60
(M) all	3.05	3.26	3.61
age 12-13	3.17	3.37	3.48
age 14-15	2.94	3.17	3.72
(F) all	3.47	3.36	3.59
age 12-13	3.57	3.44	3.71
age 14-15	3.34	3.26	3.44
SD (M & F)	.59	.44	.36
(M) all	.57	.42	.31
age 12-13	.68	.45	.38
age 14-15	.44	.36	.17
(F) all	.49	.46	.42
age 12-13	.48	.42	.42
age 14-15	.47	.49	.37
Ranges (M & F)	2.39-4.00	2.48-3.96	2.85-4.00
(M) all	2.39-3.91	2.65-3.96	2.85-4.00

age 12-13	2.39-3.96	2.71-3.96	2.85-4.00
age 14-15	2.39-3.65	2.65-3.7	3.39-3.92
(F) all	2.80-4.00	2.48-3.96	2.92-4.00
age 12-13	2.80-4.00	2.70-3.96	2.92-4.00
age 14-15	2.87-4.00	2.48-3.83	3.08-4.00

Statistical analyses of the MESSY-DHH and the SEAI were conducted using the Pearson's Product Moment Correlation. Statistical significance was predetermined to occur at $p=.05$, corresponding to an $|r| \geq .404$. Each subscale of the two assessments was compared and measured to determine if any statistically significant correlation existed. The results indicated the following:

Table 3

Pearson's Product Moment r-values for MESSY-DHH and SEAI

(all subjects; statistically significant correlations in **bold**)

	N=24 $ r \geq .404$ (df=22)						
	Total	Kind	Non-Irritating	Sensitive	Sociable	Non-Arrogant	Mature
SEAI SA	-.08	-.20	.11	.21	-.28	.17	-.25
SEAI SI	.13	.16	.05	-.12	.07	.15	.05
SEAI EA	-.04	.10	-.12	-.12	-.08	-.03	-.03

Pearson's Product Moment r-values for MESSY-DHH and SEAI (all males)

N=15 $|r| \geq .514$ (df=13)

	Total	Kind	Non-Irritating	Sensitive	Sociable	Non-Arrogant	Mature
SEAI SA	-.08	-.33	.12	.24	.06	.18	-.36
SEAI SI	.05	-.19	.17	.29	.16	.22	-.15
SEAI EA	-.26	-.32	-.23	.23	-.23	.07	-.43

Pearson Product Moment r-values for MESSY-DHH and SEAI (males age 12-13)

N=7 $|r| \geq .755$ (df=5)

	Total	Kind	Non-Irritating	Sensitive	Sociable	Non-Arrogant	Mature
SEAI SA	-.79	-.69	-.88	-.05	-.47	-.06	-.57
SEAI SI	-.75	-.63	-.88	.00	-.45	-.12	-.48
SEAI EA	-.79	-.74	-.72	.15	-.69	.00	-.69

Pearson Product Moment r-values for MESSY-DHH and SEAI (males age 14-15)

N=8 $|r| \geq .707$ (df=6)

	Total	Kind	Non-Irritating	Sensitive	Sociable	Non-Arrogant	Mature
SEAI SA	.70	.44	.80	.71	.88	.51	.09
SEAI SI	.78	.59	.73	.65	.94	.61	.43
SEAI EA	.71	.68	.67	.77	.66	.43	.12

Pearson's Product Moment r-values for MESSY-DHH and SEAI (all females)

N=9 $|r| \geq .666$ (df=7)

	Total	Kind	Non-Irritating	Sensitive	Sociable	Non-Arrogant	Mature
SEAI SA	.16	.04	.31	.03	-.41	-.18	.39
SEAI SI	.52	.67	-.12	-.60	.19	-.09	.66
SEAI EA	.52	.58	.03	-.42	.02	-.23	.71

Pearson's Product Moment r-values for MESSY-DHH and SEAI (females age 12-13)

N=5	$ r \geq .878$ (df=3)						
	Total	Kind	Non-Irritating	Sensitive	Sociable	Non-Arrogant	Mature
SEAI SA	.25	.47	-.31	-.36	-.21	-.09	.57
SEAI SI	.41	.29	.05	-.06	-.56	.32	.61
SEAI EA	.35	.60	.05	-.35	-.44	-.09	.76

Pearson's Product Moment r-values for MESSY-DHH and SEAI (females age 14-15)

N=4	$ r \geq .950$ (df=2)						
	Total	Kind	Non-Irritating	Sensitive	Sociable	Non-Arrogant	Mature
SEAI SA	.00	.21	.74	.39	-.75	-.47	-.15
SEAI SI	.59	.91	-.29	-.84	.52	.42	.92
SEAI EA	.72	.64	.34	-.42	.16	-.70	.56

Scores on each subscale of the MESSY-DHH did not significantly correlate to the three SEAI subscales (Social Adjustment, Self-Image, and Emotional Adjustment) for the

collective subject pool. Likewise, the total score of the MESSY-DHH did not correlate within the fifth percentile with each of the three SEAI subscales. However, as gender-separated statistics were evaluated, significant correlations were revealed.

For 12 and 13 year old males, significant correlations occurred for the Total MESSY-DHH score and the Non-Irritating score in comparison to the SEAI scales. The MESSY-DHH Total correlated significantly with the Social Adjustment ($r = -.79$) and Emotional Adjustment ($r = -.79$) scales and was barely below the r -value for the Self-Image scale ($r = -.75$, $p < .05$ significance at $|r| \geq .755$). Additionally, the MESSY-DHH Non-Irritating scale showed a similar distribution with significant correlations with the Social Adjustment ($r = -.88$) and Self-Image ($r = -.88$) scales.

For 14 and 15 year old males, correlations occurred between the Non-Irritating, Sensitive, and Sociable scales of the MESSY-DHH. The MESSY-DHH Total score correlated significantly with the SEAI Self-Image ($r = .78$) and the SEAI Emotional Adjustment ($r = .71$) scales. The SEAI Social Adjustment scale was slightly below the accepted level of significance ($r = .70$, $p < .05$ significance at $|r| \geq .707$). Significant correlations occurred for scores on the SEAI Social Adjustment and Emotional Adjustment scales when compared to scores on the MESSY-DHH Sensitive scale ($r = .71$, $.77$ respectively). The MESSY-DHH Non-Irritating scale also significantly correlated with the SEAI Social Adjustment ($r = .80$) and SEAI Self-Image ($r = .73$) scales. The MESSY-DHH Sociable scale showed similar results, correlating at a high level with the SEAI Social Adjustment ($r = .88$) and SEAI Self-Image ($r = .94$).

Few correlations existed for female subjects. The MESSY-DHH Kind scale correlated with the SEAI Self-Image scale ($r = .67$) while the SEAI Emotional Adjustment scale correlated with the MESSY-DHH Mature scale ($r = .71$). Only one other correlation neared significance, MESSY-DHH Mature when compared to SEAI Self-Image ($r = .66$, $p < .05$ at $|r| \geq .667$).

The research hypothesis predicted that a correlation would exist between each subscale of the MESSY-DHH and the SEAI Social Adjustment subscale for all subjects. According to the above results, correlations inconsistently exist for few scales of the MESSY-DHH in conjunction with the SEAI Social Adjustment subscale when gender is considered, and exist not at all when all subjects are collectively considered. Correlations occur haphazardly for males and rarely for females; patterns are difficult to discern.

CHAPTER FIVE

Discussion

This study examined the interaction and possible correlation of the Matson Evaluation of Social Skills for Deaf and Hard-of-Hearing Youngsters (MESSY-DHH) with the Meadow-Kendall Social Emotional Assessment Inventory (SEAI) for students at a residential school for the deaf. The study attempted to determine if a relationship existed among any of the subscales for either inventory. Scores were compared for students as a cohesive group and also for students divided into age and gender groups.

Statistical analysis using Pearson's correlation indicated erratic correlations exist between student self-rated scores on the MESSY-DHH and teacher rating scores on the SEAI. Correlations examined include total score on the MESSY-DHH and subscale scores on each inventory. In contrast to the research hypothesis, students as a whole and faculty did not significantly and consistently rate the MESSY-DHH scales and the SEAI Social Adjustment scale in a like manner.

Upon analysis of the measured statistics, a gender effect seems to exist. A greater number of correlations occurred for males of both age groups than occurred for females of both age groups. However, no significant correlation existed when combined into collective gender groups.

Males age 12 and 13 rated themselves in a consistent manner when MESSY-DHH total scores were compared to teacher ratings on the SEAI Social Adjustment and Emotional Adjustment scales; the correlation was significantly negative. Negative

correlations also occurred when examining the Non-Irritating scale of the MESSY-DHH in comparison with the SEAI Self-Image and Social Adjustment Scales.

In contrast, males age 14 and 15 exhibited a significant positive correlation between the MESSY-DHH Total score and both the SEAI Self-Image and the SEAI Emotional Adjustment scales. Correlations also existed between the SEAI Social Adjustment scale and the MESSY-DHH Non-Irritating, Sensitive, and Sociable scales. For the Self-Image scale, the Non-Irritating and Sociable scales measured as significantly correlating. A significant correlation occurred between scores on the SEAI Emotional Adjustment scale and the MESSY-DHH Sensitive scale.

Statistical analysis of female scores indicated significant correlations for MESSY-DHH Kind versus SEAI Self-Image and MESSY-DHH Mature versus SEAI Emotional Adjustment for females as a whole but not for age-divided groups. When divided into age groups, no significant correlations existed. Few other correlational measures approached significance.

It is unclear as to why one gender displayed more significant correlations than another. The opposing direction of the correlation for two age groups ratings is also important to question. On a larger scale, these scores would evidently cancel each other out. Several explanations may be posited. Social expectations are different from middle school to high school as typical developmental self-concepts change. Peers in a middle school setting may accept behavior that peers in a high school setting do not accept (an example of this may be academic success or apathy). Developmentally, 12 and 13 year old students may derive more enjoyment from rebelling against adults than high school

students. Faculty expectations may be different from one academic setting to another: high school teachers may ignore more behavior than middle school teachers or may target social skill behavior less than middle school teachers. High school students may also be more mature, self-aware, or understanding of social expectations, accurately rating their own behaviors commensurate with teacher ratings.

A variety of explanations may delineate the lack of uniform correlation. Due to the pseudo-experimental nature of the study, many factors cannot be ruled out. However, some influences and explanations may be more likely than others. These explanations can be divided into four categories: reliability of the instruments, error in design, error in interpretation, or incongruity of perspective.

The MESSY-DHH is a suspect instrument from initial examination of its supportive data. The populations used in the supportive data are limited in number and show moderate correlations at best to criterion-based norms. Little supportive information is provided to validate modification of the original form of the MESSY for hearing children. General theory describes the basis for the MESSY social skills philosophy but the modification and development of appropriate questions for deaf and hard-of hearing children is not described in detail. The MESSY-DHH was developed to separate measurement of social behavior from measurement of emotional behavior. However, it is unclear as to where social behavior ends and emotional behavior begins (as in the case of self-control and expression of anger). Several questions on the MESSY-DHH appear to be emotionally related: “I feel lonely”, “When I hurt someone, I feel sorry”, and “I become angry easily”. The SEAI Emotional Adjustment Scale seeks

behavioral cues of internal emotional conflict, such as “Demonstrates negative feelings about own motor skills, dexterity, or visible handicaps” and “Shows great concern or preoccupation with minute details”. Examining the face validity of the questions of the MESSY-DHH may reveal that many questions could be simultaneously associated with social or emotional adjustment as well as self-image.

Due to time limitations, the SEAI was distributed to only one faculty for each student, allowing the danger of rater reliability being called into question. Rater bias can be affected by a variety of factors including mood, personal feelings about the subject, style of interpretation (i.e. positive versus negative), and amount of observation time. Ideally, several raters are used for one subject and the inter-rater reliability can be compared to determine the consistency of such ratings. Unfortunately, use of several raters was not possible because of the timing of the surveys (mid-May), the amount of time required to complete the surveys, the limited number of staff, and the large number of students to be rated. Also, some staff rated students during a structured time while students were filling out forms themselves while other staff rated students at their leisure over the course of several days. It is uncertain what difference this made; faculty may choose different ratings after considering student behavior over a period of time versus answering with a first impression.

Student ratings on the MESSY-DHH may be affected by mood or social acceptability. Students may describe themselves with respect to recent events rather than consistent behavior over the course of time. Also, students may describe themselves as they wish to be rather than how they really behave.

The number of student subjects available within this particular population is definitely a complicating factor. When divided into age groups, the largest group consisted of eight students. Four students comprised the smallest group. As illustrated by the opposing correlations above, an effect may occur between 12 to 13 year old students and 14 to 15 year old students as well as between gender. The effect may not be evident from collective examination. Reading factors and mainstream schooling backgrounds may otherwise influence scores.

Limited subject numbers may distort findings and limit results due to homogeneity. It has been recognized that results from this study are applicable to only students at Iowa School for the Deaf; however, a replicated study using several different schools for the deaf may provide a greater subject pool from a wider variety of backgrounds. Such a study may yield results to be more easily generalized.

It may be beneficial to examine scores using the interpreter as the sole presenter of the questions on the MESSY-DHH administration. Use of an interpreter may allow clarification for students who may otherwise assume understanding of a written question but may guess or answer hastily to continue through the assessment. Although reading comprehension level was commensurate with the requirements of the MESSY-DHH, this does not ensure a student understood the vocabulary used in the MESSY-DHH. A study comparing the use of an interpreter versus the use of written questions in administering the MESSY-DHH may be of value.

A simple explanation may be that the two inventories are conceptually incongruent. In spite of the influence of the SEAI in creating the MESSY-DHH,

differences between the two inventories may outweigh similarities. Results may focus upon behaviors that are considered social skills but may be interpreted otherwise in a school setting. An example of this is item 1 from the MESSY-DHH: "I make other people laugh (tell jokes, funny stories, etc.)." This may demonstrate socially appropriate behavior among peers or disruptive behavior in a classroom, possibly interpretable as maturity or a social adjustment issue.

This information may be primarily useful to identify areas of incongruence when targeting social skill performance deficits. However, much more supportive information will be necessary before that link can be determined. It is unclear as to what connection a social skills survey and a social emotional inventory have to each other. Factor analysis of each question is beyond the scope of this study. Significant differences in rating may identify perceptual disagreements, conflicting expectations, and areas for remediation. It is also possible significant differences may reveal nothing more than differing opinions.

Continued research in this area may implement a larger number of subjects from more diverse backgrounds. Hearing status of family members may be another consideration for measurement. Correlation of the MESSY-DHH to various third-party social skills assessments may be helpful to establish any usefulness in conjunction with another survey. Further definition of individual scales and the usefulness of each scale may be helpful as well. It may be useful to determine what correlation the MESSY-DHH student rated form has with the MESSY-DHH teacher rated form; this may be an important link to the reason for a lack of correlation or for more descriptive information about the incongruencies shown in this study. A high correlation between the two

MESSY-DHH forms might indicate the MESSY-DHH and SEAI are incompatible assessments; however, a lack of correlation might illustrate the relative weakness of the MESSY-DHH in providing consistent and supportable data.

Although this research may have created more questions than it answered, it does readdress the question of terminology and assessment in the social skills field.

Inconsistency in definition leads to varied expectations as well as varied remediation results. This inconsistency is amplified by the invariable lack of validated assessments within the field of deafness. Whereas it may be important that such assessments exist at all, use of said assessments may be deceptive due to their lack of supportive content. However, should validation be established, these assessments would provide valuable input as to the source for remediation of social skills deficits.

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