Social Skills and Problem Solving Techniques of the Mildly Mentally Handicapped

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SOCIAL SKILLS AND PROBLEM SOLVING TECHNIQUES 
OF THE MILDLY MENTALLY HANDICAPPED

A Thesis

Presented to the 
Department of Counseling and Special Education
and the 
Faculty of the Graduate College
University of Nebraska

In Partial Fulfillment
of the Requirements for the Degree 
Masters of Mental Retardation
University of Nebraska at Omaha

by

Elizabeth Smith

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THESIS ACCEPTANCE

Accepted for the faculty of the Graduate College, University of Nebraska, in partial fulfillment of the requirements for the degree Masters of Mental Retardation, University of Nebraska at Omaha.

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"No man is an island entire of itself; every man is a piece of the continent, a part of the main." This quote by John Donne (1624) aptly describes the total cooperative effort required to complete this project. Certainly the suggestions for revision by Sandra Squires helped make the information presented more understandable. More important, however, was her encouragement to continue and ultimately complete the project. Those people closest to me, my husband Gary, daughters Lisa, Amy and Wendy, were also instrumental in keeping my momentum going when the whole project seemed overwhelming.

Now that the project is complete, being able to share the feeling of accomplishment with these special people makes the effort seem much more worthwhile.
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The major thrust of special education in the last decade has been to assist students in learning skills they will need for a successful living and working experience in our society. How successful has the attempt been? The 50% to 80% unemployment rate for handicapped workers indicates that the strategies used thus far have not been extremely successful. The national income figures for 1983 from the Social Security Administration revealed that 4,100,000 handicapped adults earn less than $3,000 per year; 7,800,000 have no income at all; and of the approximately 9,000,000 who are employed, average earnings are $2,000 less than nondisabled coworkers (Brolin, 1985). These figures indicate the importance of improving programs to enhance the handicapped student's ability to cope with lifetime adjustments.

Recent research has shown that a major problem for the mildly mentally handicapped is a deficit in interpersonal social skills and problem solving techniques (Bullis & Foss, 1986, Cheney & Foss, 1984, Melstrom, 1982, La Greca, Stone & Bell, 1983). By improving problem solving techniques of the handicapped, there is also an improvement in social
adjustment and interpersonal social skills (Castles & Glass, 1986).

The passage of Public Law 94-142 in 1976 required free appropriate education for the handicapped in the least restrictive environment. Fulfilling this requirement to most meant placing the handicapped student into the regular classroom to learn academic as well as social skills. However, several studies have shown that handicapped people interact very little with their nonhandicapped peers; in fact, many times the interaction is of a negative rather than a positive nature. These studies would suggest that the handicapped student is not learning appropriate social skills from the modeling of their peers in a mainstreamed situation. They require separate instruction to establish those acceptable skills (Greshan, 1982, Shumaker, Pederson, Hazel & Meyen, 1983). Research suggests that moderately handicapped youth need specific training to acquire social skills that nonhandicapped peers learn naturally from social experience (Castles & Glass, 1986).

The ability to obtain and maintain a job relates to social competence. In the vocational setting, the major problem for the mildly handicapped employee relates to inappropriate interpersonal reactions to coworkers as well as to the employer. Improved social skills also help the mildly retarded students to compensate for their academic deficits and allow them to be competitive in the job market
(Bullis, & Foss, 1986).

Since improved problem solving skills should enhance selecting the best response in a given situation, and appropriate social skills allow delivering the selected response effectively, teaching both skills to the mildly mentally handicapped seems to be of the utmost importance, teaching problem solving also helps the student generalize the learned social skills. Training in problem solving leads to improvements and a better social adjustment (Castles & Glass, 1986).

Until the development of the Test for Interpersonal Competence for Employment (TICE), only general screening instruments have been available. The Test of Interpersonal Competence for Employment was developed by Michael Bullis and Gilbert Foss for use with mildly retarded adolescents and adults in the vocational setting. It is designed for use as a screening device to identify handicapped students who are deficient in job related social situations. The subareas addressed are (1) handling criticism and correction, (2) requesting assistance, (3) following instruction, (4) handling teasing and provocation, (5) resolving personal concerns and, (6) cooperative work behavior. After completing the initial testing, the instructor can then pinpoint gross knowledge deficits and use this information to evaluate where to begin intervention (Bullis & Foss, 1986).
In conjunction with the TICE, Foss and his colleagues have developed the Interpersonal Skills Training for Employment (ISTE). The ISTE uses a combination of modeling and problem solving techniques demonstrated on video tape to teach mildly mentally handicapped adolescents and adults social skills needed for successful employment. It incorporates a nine step teaching procedure designed to develop knowledge based on mastery of behavior which is appropriate in the vocational setting. To help assure generalization, homework assignments are a component of the lessons.

The purpose of this study is to examine whether it is possible to assess then attempt to improve interpersonal social skills and problem solving techniques in mentally handicapped secondary level students. The study consists of using three groups of students. The first group will receive the TICE as a pre-test, the ISTE curriculum and the TICE as a post-test; the second group will receive the TICE as a pre-test, a teacher-made curriculum, and the TICE as a post-test; the third group will receive the TICE as a pre and post-test with no intervention.

The limitations of the study will be the number of students used from a single rural school district.

**DEFINITIONS**

Throughout this paper, TICE will be used to refer to the test and ISTE will refer to the training curriculum.
During the study the following terms will be used:

**Social Skills**—those responses, which within a given situation, prove effective or which maximize the probability of producing, maintaining or enhancing positive effects for the interactor.

**Vocational Education**—organized educational programs which are directly related to the preparation of individuals for paid or unpaid employment, or for additional preparation for a career requiring other than a baccalaureate or advanced degree (P.L. 94-142, sec. 195).

**Problem solving**—refers to the ability to generate an appropriate response in a situation in which there are no readily available solutions from a person's repertoire of previous experiences (Alper, 1985).

**NULL HYPOTHESIS**

Those students who receive the training for social skills and problem solving techniques from the Interpersonal Skills Training for Employment will perform no differently on the TICE than those who have not received the training on the ISTE.

**ALTERNATE HYPOTHESIS**

Those students who receive the training in social skills and problem solving techniques with the ISTE, will perform better on the TICE than those students who have received no training, or who have received training from a teacher-made curriculum.
DEFICITS IN SOCIAL SKILLS CONTINUE TO MAKE SATISFACTORY LIFETIME ADJUSTMENTS DIFFICULT FOR THE MILDLY MENTALLY HANDICAPPED. FRANK GRESHAM (1981), IN A REVIEW OF SOCIAL SKILLS TRAINING WITH HANDICAPPED CHILDREN, CONCLUDES THAT HANDICAPPED CHILDREN DO NOT ACQUIRE SOCIAL SKILLS FROM OBSERVATION OF NONHANDICAPPED MODELS. FURTHERMORE, HE CONCLUDES THAT HANDICAPPED CHILDREN WHO ARE MAINSTREAMED INTERACT VERY LITTLE WITH THEIR PEERS AND ARE POORLY ACCEPTED BY THEM. MUCH OF THE RESEARCH SUGGESTS THAT THEIR BEHAVIOR IN THE CLASSROOM RESULTS IN NEGATIVE CONSEQUENCES. THEREFORE, HE CONCLUDES THAT SOCIAL SKILLS TRAINING IS ESSENTIAL TO INCREASE SUCCESSFUL SOCIAL INTERACTION RATES. THE PURPOSE OF HIS STUDY WAS TO REVIEW THE LITERATURE ON SOCIAL SKILLS TRAINING AND TO EVALUATE WHICH TRAINING TECHNIQUES ARE MORE SUCCESSFUL IN THE MAINSTREAMING EXPERIENCE.

THE REVIEW WAS ORGANIZED INTO FOUR MAIN AREAS: (1) MANIPULATION OF ANTECEDENTS, (2) MANIPULATION OF CONSEQUENCES, (3) MODELING, AND (4) COGNITIVE-BEHAVIORAL TECHNIQUES. THE ISSUES OF TECHNIQUE EFFECTIVENESS, EXPERIMENTAL DESIGN, AND GENERALIZATION AND MAINTENANCE WERE
discussed.

Eleven studies were reviewed in which some form of antecedent control had been used to train social skills in handicapped children. These studies showed manipulation of antecedents as an effective technique for short-term acceptance of handicapped children, but more studies need to be conducted as to the effectiveness of long-term gains in mainstreamed situations.

Most of the studies used to analyze the manipulation of consequences used either mentally retarded, emotionally disturbed, or learning disabled populations. Token reinforcement and token cost programs showed successful use across a broad range of handicapping conditions. These systems were also applied within the mainstreamed classrooms with some success. However, none of the studies has collected data as to the meaningfulness of behavior change. Primary reinforcement together with either social praise or passive shaping appeared to be effective in increasing social interaction rates of severely handicapped children. Primary reinforcement may represent a necessary first step in acquiring positive social behaviors which can be faded and social behavior be maintained using only social reinforcers. Of the 33 studies reviewed, only 2 of them assessed the demonstration of generalization of social skills. The author suggests that much more follow-up research needs to be done to assess the long-term
maintenance of trained social skills.

The research on modeling showed live modeling to be more effective than symbolic modeling with populations whose conceptual and verbal skills are underdeveloped. For modeling effects to occur, research indicates that the target child must attend to relevant modeling stimuli, retain the information or stimuli which are modeled, have the motoric-reproduction processes necessary to execute the modeled behavior, and have some incentive or motivation for performing the observed behavior. Moreover, the research concerning the use of modeling with handicapped children suggests that modeling effects do not occur unless specific teaching procedures are employed.

Several of the studies did show that handicapped children are better accepted by their peers and increased social interactions after social skills training. However, there was a lack of information as to which social skills need to be selected and their subsequent impact on handicapped children's interpersonal relationships. Gresham suggests more studies are needed investigating how the more cognitively-based techniques could be adapted for handicapped children who are cognitively less sophisticated and also the issues of generalization and maintenance.

Schumaker, Pederson, Hazel and Meyen (1983), also studied the need for social skills training for the mildly handicapped. The lack of social adjustment may limit the
mildly handicapped individuals opportunities in education, vocational success and community lifestyle. Their research addresses the lack of appropriate materials available to teach this important area. Eight social skills curricula designed for use with adolescents were analyzed. After the analysis, the researchers concluded that few curricula were written for the mildly handicapped adolescent, those available did not cover the wide range of social skill deficits, nor were there activities to ensure mastery for generalization of the skills.

A study was done by Evelyn and Donald Fleming (1982), who also were concerned with the teaching of appropriate social skills to the mildly mentally handicapped in the most effective method. Their social skill training program consisted of structured learning training alone and structured learning with the addition of coping modeling displays to teach aggressive and passive educable mentally handicapped children appropriate assertive responses. The structured learning training technique combined the procedures of modeling, role playing, social reinforcement, and transfer training.

The treatment groups consisted of 96 mildly mentally handicapped 9 to 12 year olds who were divided into two main groups of those who were considered by their classroom teacher to be either passive or aggressive. The groups were further subdivided into 16 training groups of 6 subjects
each. The subjects met in their training groups for 6 training sessions, each 20 minutes long.

The two main questions asked in this study concerned (1) the effectiveness of structured learning training as a social skill teaching procedure for educable mentally handicapped students and (2) the effects of adding cognitive coping training to the skill training program to transfer their learning to real life situations. The results of the study clearly supported the effectiveness of the training procedures, but did not fulfill the criteria for transfer of training. Although the procedures of structured learning training incorporate several techniques to enable transfer, it was concluded by the researcher that transfer to training for educable mentally handicapped children cannot be expected without some intervention into existing reinforcement conditions in school settings. The conclusion was also made that the preparation of teachers, parents, and others in a child's environment to deal with and appropriately reinforce the child's new expressions of assertion was essential to the success of the assertive skill training program. A six-session training program was not considered enough to alter years of learning and expectations for the behavior of others. Longer skill training and active modification of the child's natural school environment were seen as necessary additions to a skill training program which has its goal the transfer of
training to peer interactions.

The social behavior of clients in a sheltered workshop and how that behavior related to successful vocational performance was addressed by Melstrom in her study done in 1982. The subjects she used were clients from six sheltered workshops for mentally retarded, mentally ill, and physically handicapped adults. Because this was a part of a series of studies done at the workshop by Berkson and Romer (1980), some of the data collected in that study was included.

To measure sociability, observers recorded client activity during break time at the workshop. Behavior was measured as social if it was clearly interactive and as nonsocial if it was clearly noninteractive. Desire for affiliation was measured by showing the clients pairs of line drawings portraying persons in various social and nonsocial situations. Workshop staff rated clients on an 8 point scale for physical attractiveness. The data on sociability, desire for affiliation, physical attractiveness, and client productivity based on piece-work completed was collected by Berson and Romer (1980).

Information on client terminations was based on monthly enrollment records provided by the agency for a 13 month period. Five categories of termination were used: (1) self terminated—refers to clients who voluntarily left, (2) agency terminate—refers to clients who were asked to leave
for a variety of reasons such as absenteeism or misconduct, (3) illness/hospitalization—those clients ill, (4) external circumstances—includes clients who move away, (5) job/school—these clients were placed in positions of competitive employment plus some clients who left to return to school or who transferred to other workshops.

Social behavior was found in the results as a definite predictor of behavior in the facility. Clients who were observed as being more social were more likely to earn more money. Those clients as well as the clients who had a high desire for affiliation were more likely to leave the workshop for positive reasons, such as entering competitive employment or returning to school, than those who were less social. The researcher concluded that perhaps the clients who were high in desire for affiliation had more motivation to succeed. This was supported by the fact that those clients who were low in need for affiliation were fired for reasons that reflected low motivation, such as poor attendance or chronic tardiness.

Attractiveness was also a strong predictor of productivity. The researcher speculated that perhaps this correlation was due to the fact that workshop staff members preferred to spend more time with attractive clients, which may have been beneficial. The more attractive clients may also have felt more motivated or more inclined to please as a result of getting extra attention. They may have
received more help and instruction regarding their tasks, which could have enabled them to perform more efficiently than clients who received less instruction.

The researcher concluded that the clients who were high in sociability or attractiveness perform better than do clients low in sociability or attractiveness while at the workshop. Thus, groups that focus on relating to others rather than on learning specific skills may be most helpful to clients who are low in desire for affiliation. Overall, training sheltered workshop clients in interpersonal social skills and personal grooming may be as valuable in promoting vocational success as is specific vocational preparation.

The effectiveness of social skills training, interpersonal problem solving training and a combination of the two in improving the social competence of moderately and mildly mentally retarded adults was evaluated in the study done by Castles and Glass (1986). The primary purpose of the study was to assess the effectiveness of social skills and interpersonal problem solving training in improving the social competence of retarded adults and to evaluate the effectiveness of a combination social skills and interpersonal problem solving skills program.

The subjects used were 33 mildly moderately retarded adults who were clients in a vocational training facility. Pre-testing was done with the Bialer-Cromwell Children's Locus of Control Scale, a self-efficacy scale, measuring in
interpersonal problem solving, and a social skills role-play. The group was divided into four treatment groups: social skills training, interpersonal problem solving training, combination training and no-treatment control. The three treatment groups met twice weekly for a total of 15, 1 hour sessions. The training programs were based on detailed program manuals written by the researchers which included vignettes of problem situations and either solutions or directions for generating discussion within the groups to develop solutions. Role playing by the clients with feedback and positive reinforcement were also included in the curriculum.

The results of the study showed improvements in the role play performance was specific to the social component of the program. Subjects who received only the interpersonal problem solving portion showed no significant improvement on the role play measure. It was concluded by the researcher that at least for the retarded person, components of social skills are not learned unless they are specifically taught.

In the area of interpersonal problem solving skills, test scores demonstrated that retarded persons improved in social problem solving as a result of treatment. Although many mildly retarded subjects improved their problem solving performance between pretest and posttest even without specific training, moderately retarded subjects improved
only if they received treatment. It was concluded by the researcher that this is an indication that moderately retarded persons may require specific training to acquire skills that their higher functioning peers learn more naturally as a result of their social experiences.

Subjects who received the problem solving portion of the training also showed improvement demonstrated on the ABS rating of Personal-Social Responsibility. It was concluded therefore, that problem solving training, which teaches a general process for dealing with interpersonal problems, should be more likely to generalize to life behaviors than will social skills training, which teaches the content of effective responses to specific problem situations.

The failure of treatment gains to generalize to untrained role play situations led the researcher to conclude that a program longer than the 15 session format might enhance opportunities for generalization.

Research on problem solving processes can be grouped into studies in which the task is to (1) generate a solution on the basis of information that is provided and (2) those that involve selecting the best from several supplied alternatives. The studies on mentally retarded children are relatively few compared to the studies done in this field on average and above average intelligence children. Ross and Ross (1978), selected 28 mildly mentally handicapped children to participate in an 8 week training program on
choosing the best alternative.

As a pre and post-training measure of ability, two matched sets of 30 items each were used to have the client choose the best alternative. Each item described a familiar social or environmental problem confronting a child and requiring some action or decision on his/her part. The experimental group participated in groups of 4 or 5 in a training program conducted within the context of discussion groups and requiring 40, 20 minute sessions. Topics used for discussion included: concept of choice, distinction between a choice and an order, basis for choosing one of several attractive alternatives, basis for choosing one of several unattractive alternatives, choices in emergency situations, and choices based on logic. Choice in game situations was taught within the context of the games "Twenty-one" and "Tic-Tac-Toe". The control group spent an equal amount of time in discussion groups and game activities but received no training in making choices.

Behavior during pretesting was characterized for both groups by a noticeable variability in decision time, some of the subjects taking a long time to choose an alternative for every answer and others consistently accepting the first answer with only a minute's consideration after having been required to listen to the rest of the alternatives. On the post tests, however, the experimental group exhibited a marked reduction in both variability and length of decision
time. The researcher concludes that this change in pattern of response is because both the rapid and delayed response patterns exhibited during pretesting were a result of inexperience with choice situations rather than of true impulsivity and reflectivity.

The fact that this program required 40 training sessions is an indication of how difficult the acquisition of evaluation skills is for mildly handicapped children. The author concluded that the ability to select the best alternative is an important prerequisite to the successful socialization of any child. It is of critical importance for mildly mentally handicapped children who typically are less able at reasoning than are children of average intelligence and, consequently, can be more easily induced to accept unfair agreements, take unreasonable chances, and engage in deviant or illegal acts.

Alper (1985), in a study done with three mildly mentally handicapped adolescents, used different levels of teacher questioning as a strategy for increasing independent problem solving behaviors. Using a multiple baseline design, students' responses to problem situations were measured across classroom and vocational settings.

The study was conducted in a vocational classroom within the high school and in a community based worksite, a public library. The students were expected to locate missing work materials and then to initiate a card
alphabetizing task. After a baseline was established, training was initiated in the classroom. If a response was not made within 10 seconds, the student was provided four levels of assistance in the form of teacher questions until the appropriate response was made. The four levels included: (1) generalization or applying a principle learned from a previous experience, (2) inference, or drawing a conclusion from the situation, (3) explanation or addressing cause and effect, and (4) identification or establish a point.

Social reinforcement was given immediately after each correct response made independently. Two training sessions of approximately 5 minutes each were given each day. As each student reached the criterion of 3 consecutive correct trials in the classroom, training was moved to the library where identical instructional procedures were followed until criterion was met.

From the results of data collected after observation, it was evident that baseline rates of correct responses remained relatively low prior to intervention. Increased competence in problem solving was evident as instruction in the classroom was initiated. Two of the three students met criterion in the library in a fewer number of trials than in the classroom.

The researcher draws three conclusions from the data results. First, she concludes that students should not be
restricted to learning only simple tasks on the assumption that these lower level tasks require only lower order cognitive processes. Secondly, she states that training in the work environment is more realistic for the handicapped student because it is impossible to identify and train appropriate responses to all possible environmental contingencies. Thirdly, teachers may be well advised to attend more to the specific types of feedback they provide to students. Providing students too much rote information, may very well limit opportunities to develop problem solving strategies.

Interpersonal social competence as related to the vocational success of mentally retarded adolescents and adults is addressed in the study done by Bullis and Foss (1986). Their purpose in the study was to describe the development and the psychometric properties of The Test of Interpersonal Competence for Employment (TICE). The test was developed as an instrument to assess the social competence of adolescents and adults in the work setting.

Four major considerations influenced the development of the measure: (1) situational aspects of work related behavior, (2) content information used in the test be gathered from retarded workers, (3) standards of correctness to measure of social competence, and (4) strong psychometric properties. After careful consideration of test development, the researchers concluded the instrument does
meet all the standards of competency.

The researchers felt the TICE could be utilized as a screening device to identify retarded individuals who are deficient in knowledge pertaining to social interactions in the employment setting. It was also reported by the researcher that the TICE could be used as a dependent measure to reflect the impact of a social skills training program.

Foss and Peterson (1981) studied the social interpersonal behavior areas most relevant to job tenure for mentally retarded adults. The purpose of the study was to prepare a list of the on-the-job social interpersonal behavior areas as identified both in the professional literature and in assessment instruments and to determine the behavior areas that are considered to be most relevant to job tenure as viewed by rehabilitation service providers.

Job placement personnel at 93 sheltered workshops were the subjects for the study. A 21 item questionnaire was sent to them which asked them to identify the five social interpersonal behavior areas they felt were most relevant to job tenure in competitive employment for mentally retarded people and the five areas they felt were least relevant to job tenure. Space was provided for the respondents to include any additional behavior areas they felt were relevant.

Of the questionnaires returned, the researchers
concluded that the priority social-interpersonal concern for mentally retarded workers in the work setting is the relationship between worker and supervisor and that there was an agreement with each respondent as to those areas most relevant to job tenure.

A program was designed by La Greca, Stone and Bell (1983), to teach interpersonal skills to mentally retarded individuals in order to facilitate their vocational adjustment and prevent job termination. Thirty-five retarded young adults were assigned to a skills-training, coaching, or no treatment control group.

The skills-training and coaching groups met for 12 sessions and 6 follow-up meetings. The procedures used in this group were modeling, coaching, and behavioral rehearsal. Those assigned to the coaching group also participated in 12, 1-hour sessions over the course of 4 weeks. The modeling and role-playing techniques used in the skills-training group were not employed. Those assigned to the control group received the same pre and post treatment measures as did the other subjects but did not participate in any intervention program or group meetings. They began working at the community workshop setting at the same time as did the members of the skills-training and coaching groups.

As a result of the study, the researcher suggests that the skills-training program was effective in teaching
interpersonal skills to mentally retarded young adults and allowed them to remain employed. Those who participated in the skills-training program as well as those who were in the coaching group were (1) rated as more interpersonally skilled and socially competent, (2) reported to show fewer behavioral problems in the work setting and (3) employed for longer periods of time. However, those receiving skills-training were employed for significantly longer time period and displayed a lower job attrition rate at follow-up than did those receiving coaching alone.

A statewide follow-up on post high school employment and residential status of mildly mentally handicapped students was studied by Hasazi, Gordon, Roe, Hull, Finck and Salembier (1985). They investigated the employment and residential status of 243 mentally retarded youth who left high school in Vermont between 1981 and 1983. Information was received from school records and through telephone interviews. It also included vocational training history, employment history, social service utilization and residential and marital status.

The results from the study indicate that a number of work variables during high school were related to future employment outcomes for youths labeled educable mentally retarded. Those youths who participated in part-time real jobs during high school or summer jobs were far more likely to be employed following high school that those who did not.
The researchers conclude that experience with real work is likely to produce better employment outcomes.

The researchers found similarities with previous studies after the collection of the data and its summarization. The data suggested that mentally retarded persons have greater difficulty finding work, are less likely to obtain full-time positions, perform less skilled jobs, and are paid less than nonhandicapped persons. It did however, present findings markedly different from previous studies which followed mentally retarded persons for longer periods of time. Those studies suggest that over time the employment rates for mentally retarded persons begin to approximate those of the general population of nonhandicapped persons. The researchers suggest that it is possible that improved educational technology has the potential for decreasing the initial disparities between handicapped and nonhandicapped persons and for reducing the amount of time it takes for those who are initially at risk to catch up. The ultimate question here is to identify those factors, be they in school or after, that are differentially related to employment patterns.

Information acquired from follow-up studies of this sort are essential to the development and evaluation of programs designed to increase the number of handicapped youths who make a successful transition from school to work and independent living.
CHAPTER III
METHODOLOGY

SUBJECTS

There were three groups of subjects participating in the research project. Each subject qualifies for the Educable Mentally Handicapped program under the state guidelines. The first group was given the TICE as a pre and post test and the ISTE curriculum. The second group was given the TICE as a pre and post test with a teacher-made curriculum addressing the same skills in the ISTE curriculum. The third group was the control group which received only the TICE as a pre and post-test with no curriculum.

Group one consisted of six female senior high school students ranging from age 15 to 20. These students received the TICE as a pre and post-test as well as the ISTE curriculum. Five of the students are currently employed and the one student who is not currently employed is recovering from brain trauma caused by an automobile accident.

Student number one is a 19 year old female with academic abilities which range from the fourth grade level in written expression to the sixth grade level in math with a full scale IQ score of 70. She is currently employed in
the high school cafeteria with a variety of work responsibilities. Limited use of her left arm and leg resulting from cerebral palsy places some restriction on her job placement. She is also hearing impaired and has difficulty speaking clearly. Inappropriate social skills including pulling on other students' clothing to get their attention, laughing at inappropriate times, and the inability to solve problems are demonstrated repeatedly by her.

The full scale IQ of student number two is 80 and the scores on the Woodcock Johnson range in the third grade level for written language to the fifth grade level for math. This student is employed at the Recycling Center where her responsibilities include tallying weights, using an adding machine and paying money to customers. Insecurity, poor self image and shyness are areas in which this student needs to improve. The inability to put thoughts into words causes delayed speech and frustration for the student. The student's chronological age is 15 years 7 months which makes her the youngest of the subjects.

Reading achievement as scored on the Woodcock Johnson test are in the seventh percentile for student number three whose chronological age is 18 years 7 months. Her full scale IQ measures 72. This student works in an extended care facility for the elderly in the food service area. She has improved her social skills in the last year including
successful employment, obtaining a driver's license, maintaining a car and participating in school sponsored activities. The student still has difficulty interacting with her peers in a vocational setting.

The IQ of student number four is in the low average range with a reading achievement score on the fourth grade level and a math ability equal to the third year seventh month range. She is currently employed at a day care facility where she has been for a year. Skills deficits are greatest in resolving personal issues especially with her family. Formulating a plan of action and then following through is a difficult area for her.

The social skills for student number five are the lowest of all the subjects. She is currently working in the handicapped pre-school as an aide. Social interaction with peers is very limited even in her second job setting in the school cafeteria. This student was scheduled to graduate in 1986 but her mother at that time began to evaluate alternatives for post-high school settings and chose to keep her in school. Her IQ is 68 with a sixth grade reading achievement and a second grade math ability.

An automobile accident in 1985 caused left brain damage to nineteen year old student number six. Before the accident, she was reading at the 5th grade level and written language skills were at the ninth grade level. Now that she has returned to school on a full time basis, test scores
indicate she is functioning at the second grade level. The inability to function as well as before the accident is causing the student a great deal of frustration. She was employed at a day care facility before the accident but is currently unemployed.

The second group received the TICE as a pre and post-test but the curriculum was from teacher-made materials addressing the six subareas of the ISTE. There were four 15 and 16 year olds. The material for the curriculum was from *Entering The World of Work* by Kimbrell and Vineyard. It included: reading assignments, lecture, worksheets, and class discussion.

The first student in this group, student number seven, is a sixteen year old tenth grader. His verbal IQ score of 72 is much higher than the performance score of 45. His reading level is at the fourth grade. This student's parents are very supportive and have been instrumental in the student developing a positive self image. The student is currently employed in the school cafeteria and recycling center and does good work at both positions.

Verbal communication is a strength for student number eight. His low reading ability, reflected in a stand score of 71, causes this student a great deal of frustration. He does not like being different from the other kids and not being able to read. His math ability is higher, standard score of 78, but his achievement level is not commensurate
with that score. He has a tendency to frustrate easily and does not want to keep working on a task until completion. Being a member of the 7th grade wrestling team gives him a sense of belonging and the accomplishments he achieves on the team are very important to him.

Significant visual and motor integration difficulties characterize the student number nine who is a 16 year old male. His low-average verbal abilities are reflected in a verbal IQ score of 82. Reading achievement is at the second to third grade level while math is at the third to fourth grade level. The student has been a part of the vocational program since age 13 and has shown improvement in the speed of doing tasks and following directions.

The tenth student is a 16 year old female who has had problems with emotional adjustment resulting from an experience of living in a cult situation. She was placed in a foster home at age 10 and has received counseling. Reading and reading comprehension levels are at the third grade level which are reflective of a verbal IQ score of 78.

The control group consisted of four junior high school students. Their IQ score ranged from 68 to 78 and were placed in the program for the Educable Mentally Handicapped in the high school. The first student in this group, student number 11, has a full scale IQ score of 70. The standard scores on the WRAT test reveal a spelling subscore of 66, reading 67 and math 66. This student has worked in a
closely supervised work situation since 7th grade, she is currently in the 9th grade. She has demonstrated greatly improved vocational skills since she first began working at the high school. Much time has been spent with her in one-to-one instruction concerning appropriate social skills.

Student number 12 demonstrates a higher verbal IQ of 68 than the performance score of 61. His reading achievement scores reflect this with a standard score in reading of 59 and a spelling score of 64. Very low motivation to achieve in academics is causing difficulty in school behavior with incomplete assignments and work below ability level. Social skills demonstrated by the student are more commensurate with a student 2 or 3 years younger.

The next student in the control group, student number 13, was also from a cult situation. She was removed from the home by the Social Services and later adopted by the foster family where her sister lives. The student remains very introverted and does not communicate feelings about what happened in the cult situation. Asking questions and interacting with adults is very difficult for the student. IQ scores are in the high 60's and 70's, while achievement scores on the WRAT test are reading-85, spelling-83, and math-79.

The last student in the group, student number 14, demonstrates very low social skills. He was working in the school in a supervised work setting but his inappropriate
behavior when interacting with supervisors caused him to be fired from the position. His achievement scores are in the low 60's for math and spelling, however, his reading score was 84.

TICE-INSTRUMENT

The TICE was developed as an instrument to evaluate the mildly retarded worker's knowledge of interpersonal skills in the vocational setting. It was developed over four years of time in which research projects were completed focusing on the key problems involved in working with handicapped people and job placement.

Eighty problematic situations were divided into two major categories: Interactions with Supervisors and Interactions with Coworkers. These two main areas form the two tests in the TICE. The Interactions with the Supervisor section of the test was divided into three subareas: (1) following instructions, (2) requesting assistance and (3) handling criticism and correction. The items in the Interactions with Coworkers test include: (1) cooperative work behavior, (2) handling teasing and provocation and (3) personal concerns.

The test was administered in two-thirty minute sessions. The teacher read each question twice to the students. The students then circled and A, B, or C on the answer sheet. (See TICE question sample on appendix A.)
The TICE was standardized with mildly retarded high school students. The sample consisted of 195 males and 136 females with an average age of 17.04 and an average IQ of 64.94.

VALIDITY

Content Validity

The content of the TICE was determined by extensive analysis of the interpersonal problems of the mildly mentally handicapped as well as a study of the standards of the employment setting. Thus, it can be concluded that the content validity has been established.

Construct Validity

Halpern and Foss in 1985 did research on the four different curricular formats used in the developmental stage of the TICE. The results of the research showed statistically significant gains made by the students trained in the content of TICE as compared to a control group. Also, students instructed in the problem solving curriculum made the greatest gains.

RELIABILITY

For the high school group, the coefficient alpha internal consistency reliability estimates for the total Supervisor test is .84 and .81 for the Coworker test.
ISTE-CURRICULUM

In close conjunction with the TICE, the authors Foss, Cheney and Bullis, developed the Interpersonal skills for Training for Employment (ISTE) curriculum. The ISTE is used to instruct mildly mentally handicapped adolescents and adults in the six subareas addressed in the TICE.

The content of the ISTE is based on the same information as the TICE; the analysis of interpersonal problems experienced by mildly mentally handicapped workers and effective solutions to these problems based on responses from community employers. Within the area of Supervisor-worker interactions, 12 lessons are provided with a focus on: (1) following instructions, (2) requesting assistance and (3) handling criticism and correction. In the coworker section, 12 lessons address: (1) cooperative work behavior, (2) handling teasing and provocation, and (3) resolving personal concerns.

Three teaching techniques are used in the ISTE curriculum. These techniques are modeling, problem solving and behavioral rehearsal. After comparing various combinations of these three techniques with a control group, the authors found videotape modeling and problem solving to be the most effective and required the least amount of class time.

Each lesson follows the same format beginning with step one which is a brief discussion of the previous lesson. The
students are asked to describe the problem area covered, discuss the relevance of the topic to their experiences and review the solution.

The teacher introduces the content area to be covered that day in step two. Students are then asked to provide examples of the problem they have experienced either at work, at school or at home.

Step three requires the teacher to read the provided script as an introduction to the videotape. The problem is shown twice on the videotape then stopped.

In teaching step four, the teacher first makes sure the students know the roles of the persons involved and the specific problem faced in the vignette. Then the students are asked to identify what each of the characters in the problem situation are thinking and feeling.

This step of the lesson requires the teacher to write the problem on the chalkboard then ask the student to generate solutions. Students' solutions should be put on the board exactly as they say them. After all solutions have been written, they are evaluated by the students. The emphasis is on evaluation of solutions to teach students that behaviors have consequences.

The videotape is used again in step six to help students understand appropriate steps to take in resolving problems. The solution is portrayed two times. The teacher points out the specific components to the solution.
Finally, the teacher connects the effect of the problem solution to the two goal statements which were written earlier on the board.

Step 7 offers the student an opportunity to practice their problem solving skills with guided direction from the teacher. Within groups of three, each student plays the part of the worker or the supervisor which was portrayed in the videotaped vignette. Each student in the group also has the opportunity to evaluate the other two students to check for accuracy.

The teacher checks for recall in step 8 to make sure each student understands and is able to verbalize the steps previously mentioned in the lesson in developing a solution to the specific problem. Homework activities are then assigned to the students in step 9 to increase the chances that the desired behavior will be used in the work setting. The authors suggest various homework assignments and encourages the teacher to devise homework appropriate to each student.

Upon the completion of the 24 lesson curriculum of the ISTE, the TICE is repeated for use as a post-test.

The statistical analysis will be done comparing the pre and post-test scores using the Wilcoxon Matched Pairs Signed-Ranks Test.

TEACHER-MADE CURRICULUM
This curriculum was made from several different chapters of the text book *Entering the World of Work* by Kimbrell and Vineyard (1982). There are two chapters which deal specifically with interacting with the Supervisor and with co-workers. The reading assignments were given and the students were asked to write the answers at the end of the section check ups. These check up answers were discussed in class as well as the reading assignment. The students were also given worksheets in a variety of formats including; fill in the blank, wordsearch, crossword puzzles and multiple choice questions. The students were tested on their knowledge retention with a multiple choice test. To complete the six week course work, the curriculum also included the chapters covering problems that affect jobs, managing money, and living independently.
CHAPTER IV
RESULTS

There were three groups in this study: the experimental group which received the ISTE curriculum, one control group received training using a teacher made curriculum, and the other control group received no training. All groups were pre and post tested using the TICE.

The percentage of correct responses for the six subtests was calculated for each student. The total for the two test areas was also calculated. A statistical analysis was done on the difference between the pre and post test scores. The Wilcoxon Matched Pairs Signed-Ranks Test was used to test the difference in scores according to each subtest as well as the total for the two sections. The results for the experimental group (group 1) are reported in Table 1, for the control group receiving the teacher-made curriculum in Table 2, and the control group with no intervention in Table 3.

There was significant difference between the pre and post test scores for the students in the experimental group. In the section "Interaction with Supervisors", the significant scores are: Following Instructions $p<.016$, $36$

The scores of the group of students receiving the teacher-made curriculum as well as the group receiving no intervention showed no significance in any of the subtest areas.
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*ns=no significance
### TICE—NO INTERVENTION—TICE

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</tbody>
</table>

* p=ns  p=ns  p=ns  p=ns  p=ns  p=ns  p=ns  p=ns

*ns=no significance
CHAPTER V

INTERPRETATION OF RESULTS

SUMMARY

The purpose of this study was to determine the effectiveness of the Interpersonal Skills Assessment and Training for Employment, a curriculum designed to teach the mildly mentally handicapped social skills and problem solving techniques. In the six subareas judged to be reflective of successful employment, the scores of the six students receiving the ISTE curriculum showed significant improvement. The scores of the group receiving the teacher-made curriculum as well as the scores of those students receiving no intervention showed no significant improvement. This analysis indicates the effectiveness of the ISTE curriculum.

Besides the difference shown on the test scores, the researcher observed three elements, which in combination, seemed to contribute to the success of the program. The first was the curriculum's structured opportunities for interaction between the students and the teacher. After viewing the problematic situations presented in the videotaped vignettes, the teacher and the students discussed the feelings of the workers and the supervisor. The second was the active participation from each student which was
required by the way the lessons were structured. The third component was the subject matter addressed in the lessons. The students could relate the problem situations being presented to their own lives. Homework assignments were also helpful to facilitate generalization but not as crucial as the previously mentioned elements.

The researcher's interpretation of the effectiveness of the videotaped vignettes was that as students observed and discussed workers and supervisors they gained insight as to why people interact the way they do. Perhaps more importantly, the discussions helped identify and analyze feelings the students had had in similar situations. On several different occasions, after a discussion, the students expressed their relief that they weren't the only one who had felt that way. After understanding their own feelings, students appeared to gain experience and confidence about changing the way they interacted with people. This seemed especially effective when discussing teasing and provocation. One example of this was when one student told about every time someone called her "dumb" she would get very defensive and angry which made things even worse. Through the discussion format, the other students helped her identify positive qualities about herself and encouraged her to recall her positive qualities when faced with a similar situation. The format of the curriculum provided students in the experimental group with
opportunities to gain crucial understanding of their behavior and discuss how they might change their responses. They had not gained this understanding previously either in school or at home.

Each student appeared to experience success in obtaining new information through the experimental group procedure. Due to varying reading abilities, having new information presented orally and visually was much more effective among the experimental group subjects than for the students in the control group who obtained their information from reading. This observation is supported by La Greca, Stone and Bell's work (1983) from which they concluded that the use of modeling, coaching and behavioral rehearsal were effective when teaching social skills to mildly mentally handicapped students. The role playing format also allowed time for the teacher/researcher to check for each student's understanding and to make adjustments to facilitate understanding of the lesson. The students were also able to check each other and help each other understand the lesson. Because of the ability to visually check for understanding, the teacher/researcher concluded that there was no need for written tests.

The teacher/researcher noted that the lessons as written in the manual were easy to follow. Directions were clear and specific regarding the objective of each lesson. Each discussion topic was introduced then in later lessons
was repeated using different problem situations.

Foss and Peterson (1981) selected problem areas for the lessons which were reflective of actual problems students experience in work situations. In this study, students in the experimental group reported repeatedly that the situations addressed in the curriculum were indeed replications of real events in their lives. Those sections which were especially relevant to the students were the lessons addressing handling verbal teasing, criticism and correction, and difficulty understanding instructions.

Homework assignments included some which involved other family members. When doing the lesson on "Cooperative Work Behavior," the student's assignment was to refrain from complaining or arguing when given a job by a parent. The students responded with surprise at the positive reaction of their parent. The class drew some conclusions about how they could practice these skills at home and at school as well as at work.

The TICE test took two 30 minute sessions to administer. For those students who are auditory learners, having the test read was beneficial. However, it would be easier for most students if they could read along while the teacher read the test. The scoring of the test took an inordinate amount of time when determining which sub-area the question addressed. It would be easier to score if each subtest question were grouped together.
CONTROL GROUP TEACHER-MADE CURRICULUM

Compiling an effective curriculum for teaching social skills and problem solving techniques for the group receiving the teacher-made curriculum was difficult because there are few resources available. There are one or two chapters in vocational text books but nothing that extends for a six week period. The format of the lessons involve reading from texts and using worksheets. There was very little active participation of the students during the lessons. The variance in reading ability of the students made teaching the lesson more difficult. This deficit was also noted in the study done by Shumaker, Pederson, Hazel and Meyen (1983) who concluded that what curriculum was available did not cover the wide range of social skill deficits. There was not a significant difference between the pre and post test scores of the students who received the teacher-made curriculum. This researcher interprets this to support that interaction with the teacher is not enough to teach social skills and that the social skill curricula are an important component of an effective program.

CONTROL GROUP NO INTERVENTION

There was not a significant difference between the pre and post test scores for the students who received no
intervention. This researcher interprets this to support that there is a need to teach the mildly mentally handicapped social skills and problem solving techniques rather than expecting them to learn these skills by themselves. Castles and Glass (1986) also found in their studies of mildly mentally handicapped persons, that specific training is needed to acquire social skills. Higher functioning peers learn more naturally from social experiences than students who are mildly mentally handicapped.

FURTHER STUDY

Possibilities for future study would be follow up studies on the long-term effects of the ISTE curriculum. The researcher may want to determine whether this curriculum has staying power or whether social skills need to become an ongoing part of the secondary curriculum. Perhaps a combined effort could be made between school and home to assess the use and effectiveness of improved social skills. Training parents to train their children in social skills might also be helpful to maximize the effect of specific skills and the most effective ways to teach them.

In summary, the mildly mentally handicapped population needs to be taught appropriate social behaviors and problem solving techniques. When there is no intervention, there is no significant improvement. Effective teaching methods
include teacher-student interaction, visual aids and active participation by each student. The ISTE was an effective method of teaching social skills and problem solving techniques specifically related to employment with immediate impact with a group of mildly handicapped students.
Appendix A

Number 9. If another worker owes you some money and won't give it back, you should:

   a. ask why she won't give it back.
   b. ask another worker for help.
   c. take the money from her wallet.

REPEAT THE ITEM

NUMBER 10. If you are bothered by another worker bumping your work table you should:

   a. leave the work table.
   b. tell your supervisor.
   c. ask the worker to stop bumping.

REPEAT THE ITEM

Number 11. If another worker is playfully punching you on the way to the lunchroom and you don't like it, you should:

   a. threaten to hit the worker.
   b. tell your supervisor.
   c. say you don't like it.
BIBLIOGRAPHY
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