OBTAINING AND USING PARA- AND NON-PROFESSIONALS TO
IMPROVE READING INSTRUCTION, ACHIEVEMENT AND ATTITUDE

by

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Chapter 1

THE PROBLEM AND ITS OBJECTIVES

The Problem

Significance of the Study

"No man can read with profit that which he cannot learn to read with pleasure." -- Noah Porter

The major goal of reading instruction -- the development of students who can read and who read often -- is not being totally reached by the traditional reading program. Among school-age children, the percentages of poor readers and drop outs are too great to allow satisfaction with the remaining good readers. Estimates of children with severe reading difficulties vary widely, but several authorities (Bakwin and Bakwin, 1966; Harris, 1961; Hallgren, 1950; Rabinovitch, 1959) have suggested between ten and fifteen percent of the elementary school population is reading at least two years below grade level.¹ A survey undertaken by the New York Department of Education in 1968 disclosed that approximately twenty percent of all sixth graders in New York are reading below minimum levels of competence; in the New York City public schools the figure rose to an astounding forty-four percent.² Figures from the foregoing survey though related to New York pupils, also indicated the proportion of students with reading problems in elementary schools across the country. Recent
national figures indicate drop-out rates of thirty-one percent from high school and three percent from elementary school. The drop-out rate among Kansas high school students is twenty-four percent. Nationally, only sixty-nine percent of high school students complete the twelfth grade.

The foregoing estimates are only symptoms of the extent of reading retardation among students in reading programs. Vellutino contends that these figures make it imperative that educators intensify the search for innovative models and programs that will provide competent services for the largest number of children at the least possible cost. Investigations to determine the causes of reading retardation indicate that the solution to the problem may lie within restructuring the teaching approach, the use and kind of learning materials, and the classroom organization. Numerous reading specialists, both practitioners and theorists, concur that the solution to reading retardation is individualized reading instruction.

Statement of the Problem

The attempt to individualize reading instruction poses many problems for the teacher. The problems grow out of the need for smaller class sizes, more time for pupil-teacher conferences, time for preparation and professional growth, and reduction of routine matters. If the problems are solved through utilization of para- and non-professionals,
there is a need for recommendations that educators may utilize to enhance positive effects on reading instruction, achievement, and attitude.

Objectives

It was the purpose of this study (1) to make a survey of research and professional literature on the utilization of para- and non-professionals in reading instruction, (2) to summarize the findings of several para- and non-professional programs, and (3) to synthesize the findings into recommendations and implications for enhancing the effectiveness of para- and non-professionals used to individualize instruction of reading.

Definition of Terms

Para-professional: a person engaged in teaching with limited training or education.

Non-professional: an amateur educator; a person engaged in teaching without special knowledge, proficiency, or certification in any area of education.

Auxiliary personnel: personnel employed to assist the professional in performing her duties.\(^6\)

Teacher aide: any person within a school system who is legally and specifically employed to assist certified teachers in the discharging of their teaching and ancillary duties and is paid for their services.\(^7\)

Volunteer aide: any person engaged by the school system, who voluntarily devotes time to the performance of
various duties, either within or without the classroom, as agreed upon by legally responsible, educational supervisory personnel.8

Tutor: the person in charge of the tutorial conference;9 a private teacher.10

Tutee: a person taught by a tutor.
Chapter 2

REVIEW OF RECENT RESEARCH AND PROFESSIONAL LITERATURE

Philosophical and Historical Backgrounds

Individualized instruction. Philosophic thought that has influenced the theory underlying the concept of individualized reading instruction through tutoring is probably older than Plato's insistence of "learning by doing." During the Renaissance revolt against medieval authoritarianism, many philosophers planted the seeds of individualism which germinated in the educational philosophy of that era. Opposed to stern discipline and forced "learning," Rousseau prepared the ground for the "child-centered school." The French philosopher was a powerful influence in behalf of an education centering on man as a natural and social creature capable of mature, cooperative self-direction. Later, Herbart's concept of the "whole-child" and Froebel's belief in the right of the child to be free in expressing his nature were innovations in education that were genuine and modern during the Enlightenment.

Dewey, a dominant advocate of individualism in American education, was responsible for the practical application of the philosophy and theory of individualized instruction. Dewey maintained that the philosophy of education is also the philosophy of life. The realm of the
classroom in the 1890's was totally set off from the experience of the child who inhabited it. Learning consisted of the tedious memorization of data without the meaning being immediately clear to the pupil. The distance between the classroom and the world outside stifled the learning process. Dewey objected strenuously that these conditions prevented the student from relating his formal studies to his own development as a whole person. He maintained that

The history of educational theory is marked by opposition between the idea that education is development from within and that it is a formation from without, that it is based upon natural endowments and that education is a process of overcoming natural inclinations and substituting in its place habits acquired under external pressure . . . To imposition from above is opposed expression and cultivation of individuality; to external discipline is opposed free activity; to acquisition of isolated skills and techniques by drill is opposed acquisition of them as means of attaining ends which make direct vital appeal; to preparation for a more or less remote future is opposed making the most of opportunities of present life; to static aims and materials is opposed acquaintance with a changing world.11

Dewey had stressed earlier that "Education . . . is a process of living and not a preparation for future living."12 Later, he reiterated, "Education is not something to be forced upon children and youth . . . but is the growth of capacities with which human beings are endowed at birth."13 He concluded that traditional education resulted in "miseducative" learning which "weakens or destroys the individual's capacity to grow." "Educative" learning which "stimulates growth and enriches personal and social
relationship \(^{14}\) resulted from individualized instruction. Dewey called for teachers to "Abandon the notion of subject-matter as something fixed and ready-made in itself, outside the child's experience; ... realize that the child and curriculum are simply two limits which define a single process. ... To oppose one to the other is to oppose the infancy and maturity of the same growing life." \(^{15}\)

Education involves a process of growth which antedates the pupil's admission to school and extends years beyond his departure from it. To teach people more and more factual knowledge in the best possible way is not the sole purpose of the school. It must also be remembered that the school is trying to educate people for a way of life and in a manner that reflects this way of life. The educator has to narrow the distance between the classroom and the world outside.

Much of what Dewey advocated has not been realized. Only segments of Dewey's ideas have been employed in the schools. Like trying to pour new wines into old bottles, futile attempts have been made to force isolated features of Dewey's ideas into traditional systems. His plan involved far more than simply installing moveable furniture or having people sit in circles. Dewey's educational program was a difficult one to realize because in his theory of education an entire climate emerges -- a democratic climate.

Dewey's plan of education would end the school's isolation by establishing a closer relationship with the
student, the family and the community. By shifting away from traditional structures and techniques, the school could broaden the curriculum to encompass nothing less than the entire, complex environment. The school's awareness of the home, neighborhood, business, and professional life in the community would enable the school to function more effectively and to widen its influence. By recognizing the unity of the child's experience, it could communicate more directly with him and at the same time it could cease to be alien and hostile in the eyes of the student. As he pursues programs of work created substantially in terms of the individual, the child could move with far more freedom than traditional structures allow.

Attention given to the individual's need for flexibility could help harness the untapped energies of pupil participation and self-directed motivation. Individualized education is, to a great extent, self-education. Dewey's philosophy advocates a system of education that best recognizes the dignity and worth of all individuals, that allows every individual to develop to his fullest.

Education consistent with Dewey's cognitive-developmental philosophy integrates three assumptions: one, instruction is based on an adequate diagnosis of the child's level of functioning; two, true learning is a result of the child's acting upon the environment; three, the teacher can only provide the stimuli (objects, facts, knowledge, experiences, rewards) for the child to act upon.¹⁶ The
child is totally involved affectually, motorally, and cognitively.

Para- and non-professional programs. The use of para- and non-professional help is not a new educational practice. The practice of children helping one another occurred in one-room schoolhouses. It was central in the Montessori approach, in which the older, more advanced children are utilized to teach the younger, less advanced ones.

Paid teacher aides were first used extensively in the early 1940's. One of the major attempts to employ teacher aides was the Bay City, Michigan projects in 1952. Present para- and non-professional programs range from well-structured to completely unstructured; from voluntary aides to paid aides; from the young to the old; from a few hours a month to 40 hours per week; from supervisory to menial tasks; from the well-educated to the illiterate; and from the community residents to the students themselves. Present programs are predicated on educators' demands for reduction of routine matters, smaller class sizes, more time for individual pupil-teacher consultations, time for professional growth, preparation, and many lesser demands. The value of a para- and non-professional program consists of a myriad of challenging and hopeful advantages to modern education. The planned and proper use of auxiliary personnel could alleviate or eliminate many present educational problems.
Sources of Para- and Non-Professional Personnel

Related research and professional literature revealed that the para- and non-professional helpers include grade school students, junior and high school students, undergraduate and graduate students, and parents and other adults. Contrary to the opinions of educators who believe that para- and non-professional help would be difficult to engage, the figures compiled in 1965 by the Department of Labor indicated that there were about 1,331,000 volunteers in the United States and about 300,000 in the area of tutoring. The national director of "Volunteers of Education" indicated that there are substantially more volunteers now than there were when the figures were compiled in 1965 during the early stages of volunteering in the schools.\(^\text{19}\) Classroom assistants appeared to come from diverse levels of economic, educational, and professional backgrounds. Otherwise unemployed, parents and neighborhood residents from poorer communities are employed as classroom helpers in some reading assistance programs. A large number of students are employed or volunteered their time and aid as tutors. Thus, the sources and numbers of para- and non-professional appear relatively unlimited.

Organization of Para- and Non-Professional Programs

Student-to-student programs. Reading assistance programs which involve students as tutors employ a variety of possible organizational bases. In an intra-class
arrangement, tutor and tutee are classmates with different or similar abilities in reading. A cross-grade plan, as reported by Shapiro,\(^{20}\) includes a "pupil teacher" from an upper grade and a tutee from a lower grade. The reciprocal reading improvement factor leads some teachers to use remedial students as tutors to "teach" average or remedial students in the lower grades. In the programs reported by Frager and Stern,\(^{21}\) and Rosner,\(^{22}\) the tutors are sometimes high school students. "Project Promise" endeavors to recruit high school students for teaching in city schools.\(^{23}\)

Differences in student-to-student programs illustrate how such programs could be used to capitalize upon the variety of advantages and outcomes achieved through tutoring situations. In some programs, the participants are non-English speaking children. In Two Villages, New Mexico, teen-age tutors teach the unwritten Pueblo language and tribal crafts to younger tutees.\(^{24}\) In Los Angeles, a Youth Tutoring Youth program for the past two years has been used to teach a particular method of reading, "formula phonics," to Mexican-American students. It appears that underachieving youth benefit tutees as much as did professional teachers.\(^{25}\) In Chinle, Arizona, at Rough Rock Demonstration School on the Navaho Indian Reservation, the older children teach English to the younger children who speak only Navaho.\(^{26}\) In other programs the participants are fatherless boys, "disruptive" students, or emotionally disturbed children. Drop outs and potential drop outs are the
tutors selected to participate in the Los Angeles One-to-One Reading Project, which attempts to reduce school failure and to increase attendance and graduation from school by improving the reading ability and interest of tutors and tutees. The cross-age tutorial model was designed and evaluated through a series of experimental projects by Fox, Lippitt and Lohman. The investigators conclude that the types of children who benefit especially from the cross-age experience are:

1. children who for some reason find it hard to be successful with their own age group
2. children who are the youngest in their families and who have never had a chance to develop skills of being "an older helper"
3. children who are the oldest in their family who have never had a "bigger" boy or girl to look up to or to model after
4. siblings who have not had a chance before to be in the same educational environment as "equals"
5. a younger boy or girl who had never had a chance for close observation or companionship of an older child of the same age.

The study of cross-age relationships, which involve the relations between children of different chronological and developmental levels, indicates that cross-age interaction could be a potent learning experience for children of all ages.

Differences, rather than similarities, are the bases of some tutorial groups. Where the children teaching and being taught are different in terms of age, sex, race,
cultural background, or ethnic group, the relationship tends to reduce barriers based upon these relationships. The teacher-to-student relationship puts the child as teacher in a new relationship with another child. As partners in a helping relationship, the pair of children come to develop a common purpose.

The whole-school pattern is the organization of the tutorial programs at Cherry Creek, Colorado,\textsuperscript{30} and Pocoima Elementary School in Los Angeles, California.\textsuperscript{31} The Cherry Creek Learning Assistants are high school students who tutored elementary grade children as a part of a high school human relations course. The Pocoima Tutorial Project involves the parents and the surrounding community. Local residents are added to the school staff. In addition to the inter-grade tutoring by individual students, entire classes tutored younger ones. Intra-class tutoring in all grades also takes place.

One of the largest tutorial programs, Youth Tutoring Youth has initiated programs in school systems, community action agencies, and youth service organizations across the nation. Usually an afternoon and/or summer program run in collaboration with the Neighborhood Youth Corps, the tutorial program employs members of the Neighborhood Youth Corps as tutors. Tutors were at least two years behind grade level in reading and the tutees were younger under-achieving children in ghetto schools. The Neighborhood Youth Corps tutoring program tests out a number of possibilities:
--That indigenous non-professionals can, with training, serve as supervisors

--That underachieving and seemingly unmotivated youths of 14 and 15 years can, with proper training, develop the skills and acquire the motivations necessary to teach younger children

--That by providing each tutee with a one-to-one tutoring relationship with an older youth, his reading ability and/or attitude may be improved

--That tutors, by learning to teach, can learn to learn and will show gains in reading

--That by providing each tutor with an opportunity to help a younger child, he can feel satisfaction of being useful, capable and important, and thus enhance his self-respect, develop a sense of responsibility and participation in the society around him and, hopefully, lessen his estrangement from the school establishment and society

--That the project can successfully demonstrate models for the use of 14- and 15-year-olds in a meaningful, educationally-related work assignment which can be readily applicable to a year-round In-School Neighborhood Youth Corps program.\textsuperscript{32}

Youth Tutoring Youth programs which began as two pilot programs in 1967, have increased to several hundred in less than five years.

\textbf{Undergraduate and graduate students programs.}

Undergraduate and graduate students serve as tutors in reading assistance programs, some of which were reported by Rist.\textsuperscript{33} Some of the tutoring programs are directed toward ineffective reading programs in urban neighborhoods and schools. The reciprocal benefit of such programs is to help maintain the reading instruction program in the teacher
training program at the college.\textsuperscript{34}

In other projects which involve undergraduate and graduate students as teachers, the tutoring programs are used as the first step to a career in education. Youth tutoring Youth and Career Opportunities Programs designed tutorial projects in which the tutors are guaranteed employment by the school system as classroom aides when they complete high school. As aides they attend a local university, where, in some instances, the aides receive credit for their tutoring.\textsuperscript{35} In Miami, Florida, the Youth Tutoring Youth tutors, who help public school students, are supervised in turn by graduate students. The junior college supervisors are former tutors with the Neighborhood Youth Corps and they are from the same neighborhood as the tutees.\textsuperscript{36} Therefore, for undergraduate and graduate students, and community residents, the para- and non-professional projects are part of a career ladder, leading ultimately to careers in teaching and related fields.

\textbf{Parents and other adults programs.} The parents of students and other adult community residents are the para- and non-professionals in several tutoring projects. Parents and community residents are utilized at different levels. In some instances they are used as supervisors or advisors. In an attempt to get the parents involved in administrative decision making, the parents serve on a parent advisory council which functions with a council made
up of students, teachers, and aides in the Fall River, Massachusetts Youth Tutoring Youth-Drop Out Prevention Program. Typically, in Youth Tutoring Youth programs the program supervisors are community residents who endeavor to improve the reading of underachievers from the community.

In other programs parents and community resident tutors work directly with students in reading assistance projects. Powell, Robertson, and Orlick related the results of parental involvement in various reading programs. Adult volunteers provide the tutoring services in the programs described by Marsden, Vellutino, and Watson. Reissman also described recent studies in Minnesota, Colorado, and New York which used para-professional to improve children's reading ability successfully.

In a number of studies, parents are both tutor and tutee. In an Early Childhood Stimulation Through Parent Education project, conducted at the University of Florida, fifteen disadvantaged parent educators are trained to work with nearly 300 mothers and their children. STAR, a New York City program, uses para-professionals to train Puerto Rican parents to read to their children. The parents and community residents are sometimes employed full or part time; however, in several instances they volunteer their assistance in the reading programs.
Roles of Para- and Non-Professionals

A survey of studies revealed that para- and non-professionals perform a number of different duties in reading assistance programs. Two recent studies by Bennet and Falk, and Shank and McElroy revealed that teacher aides have been used to give and grade examinations, to work with small groups on reading lessons or crafts, to work with flash cards, to tutor slow students, and to act as bilingual agents between non-English speaking students and the teacher. In numerous programs the services of para- and non-professionals are geared around instructional and noninstructional activities:

In a two-year program in Albany, New York, each of six adult women were assigned to tutor five students separately for thirty minutes per day. The materials were programed and divided into small steps which emphasized drill and overlearning. In addition to the individualized instruction, the women, previously trained, administered and scored students' tests, though they did not interpret nor evaluate tests. The tutors met once a week to discuss the tutees, remedial strategy, materials and procedures.

Thirty freshman and sophomore black students from the University of Southern Illinois agreed to help 127 seventh graders. 250 paperbacks replaced the traditional reading curriculum. Each university student was assigned to two seventh graders in different rooms. Based upon the premise that the teacher's expectation would influence the student's achievement, the program emphasized frequent reinforcement of the tutor's high expectations of the tutee's success. The program was non-directive in that the tutee determined what material to read and at what pace. The only requirement was for the student to write three pages per week in their "diary." The tutor and tutee decided the tutee's grade jointly.
Twenty-one juniors from an inner-city high school were assigned to fourth, fifth and sixth graders in four elementary schools. Paperback books were the basic materials. The students listened to, read and discussed prose and poetry in a seminar fashion.\textsuperscript{51}

Upper grade students assisted primary pupils on a one-to-one basis for ten weeks. The eighth graders taught the group of second graders basic vocabulary, using a word list devised by local reading officials. The tutors listened to the tutees read and helped them complete their workbooks and assignments.\textsuperscript{52}

Thirteen fifth and sixth grades remedial students tutored twelve second and third graders during a ten-week tutoring cycle. They were engaged in activities which involved oral reading and oral comprehension, phonics, vocabulary practice, story-time, and media. The individualized reading assistance varied with the tutored child's mood and interests.\textsuperscript{53}

In Bethpage, Long Island at the John Hope West Elementary School, the tutoring practices stemmed from an "inter-age class" system. All classes had a three-year spread -- 6, 7, 8; 7, 8, 9; 8, 9, 10, etc. The continuously changing sub-groups of students depended upon their needs and skills development. The students helped each other. This inter-age system expanded the helping arrangement throughout the entire school rather than just a few hours of especially arranged tutoring.\textsuperscript{54}

Three seniors enrolled in the teacher preparation program at Hunter College, New York City, tutored fifth and sixth graders who then tutored third graders. The college students spent four hours in a seminar and two hours with a fifth or sixth grade tutee. The upper grade students had been previously matched with the third graders, as having similar problems. The college tutor designed lessons to benefit both upper and primary students.\textsuperscript{55}

The dissimilarity between the services performed by the para-professionals indicated to the author the need for clarification of the roles. Some of the problems that Anderson and others have identified as arising when non-
certified personnel are introduced into the school system are:

(1) Tendency to downgrade the roles and functions of auxiliary personnel as glorified errand girls and boys.

(2) Danger that the new personnel will be used simply to provide more of the same rather than utilized to serve as a dynamic force for change within the system.

(3) Lack of orientation at all levels: administrators, teachers, students, and parents.\textsuperscript{56}

In a study conducted by Miller, inadequate in-service training was indicated as one of the reasons that teachers with or without aides have similar classroom operational patterns. The study further indicated there is little uniformity among the activities of the aides.\textsuperscript{57} The role of the para-professional is ill-defined. Smith reported that when an aide is hired, neither he nor the educational administration has a clear conception of his specific duties or functions. The teacher wields the authority in the classroom and only delegates certain tasks piecemeal to the aide. Some teachers feel their authority is challenged by the para- or non-professional. Other teachers welcome the new assistance and allow their aides great freedom to participate in the classroom.\textsuperscript{58}

The functions and roles of the para- and non-professionals have been defined as a result of direct consultation with representatives of teachers, para-professionals, and the community by the Minnesota Public
Schools and the Auxiliary Educational Career Unit, New York City. The activities of student tutors are outlined in a General Tutoring Plan by the Pocoima School District, Los Angeles, California. Other materials are also obtainable. Materials concerning the training of tutors are dispensed by the National Reading Center and a guide for establishing new programs is dispensed by the Department of Education, Washington, D. C.

"No one program can be designated or specified as useful to all schools." There are no limits on the roles which can be performed by para- and non-professionals. However, having sponsored Yough Tutoring Yough projects in 250 school systems, the National Commission on Resources for Youth has determined that the roles of para- and non-professionals are among the essential ingredients of tutorial programs. In order to organize successful programs utilizing para- and non-professionals each school district, school, or teacher should consider the particular needs of the students, other participants and the particular circumstances which influence the effectiveness of the programs.*

In some studies the para- or non-professionals played no significant role and no significant improvement in reading achievement occurred as a result of additional classroom personnel. Miller reported a study which reveals no evidence that aides provide more time leading to improved pupil

*See Appendix A, "A Model of an Evaluation Design."
performance. However, it appears that teachers with aides are somewhat more successful in improving the achievement of lower level pupils. The findings of this study indicate that teachers with or without aides have similar classroom operational patterns. The reasons for the similarity of behavior are related to prior training and practice, institutional demands, lack of in-service training, or a combination of factors. 64

In a number of other studies para- and non-professionals performed in more effective roles. In 1968 a study conducted for the United States Office of Education by the American Institute for Research on compensatory programs for the disadvantaged reveals that twenty-three programs were found to have yielded measurable educational benefits in the area of cognitive development. Of those twenty-three programs, eleven involved the utilization of para-professionals. Four programs utilized children helping other children to learn and themselves learning in the process. 65

Clarity in the roles of the teachers and the para- and non-professionals appear to enhance efficiency and effectiveness in the operation of aide programs. Reducing pupil-teacher ratio does not lead automatically to better reading performance. Student achievement is not benefited if the teacher with ten students is doing precisely what he was doing with thirty pupils. Only effectively employed para- and non-professionals occasion positive relationships and interactions among individual students, teachers, and assistants.
Improvement of Reading Achievement

Decentralizing the teaching role has potential learning benefits for all who become involved. When a student fills the teaching role the results are positive. That children learn from their peers is obvious, but a more significant observation is that children learn far more when performing the teacher role than when acting as students in the classroom. The tutor and tutee do not benefit alike. Research data indicate that the tutor tends to benefit to a greater degree and in a number of ways. The child who teaches another child and thereby learns himself not only has to struggle to make the material meaningful to the learner, but also has the opportunity of observing another in the process of learning. The child who teaches another learns as a result of a number of processes. As Gartner explained --

He reviews the material; he has to organize, prepare, illustrate the material to present it to his student; he may try to rephase or reformulate it so as to enable his pupil to learn it and thus himself sees it in new ways; he may need to seek out the basic character of the subject, its structure, in order to teach it better, and may thereby himself understand it better.66

Not only does the student learn from the act of teaching, but having been a teacher he is then a better learner when he again becomes a pupil.

In "Studies in Tutoring," Cloward67 reported the results of the Mobilization for Youth program in New York City. The Mobilization for Youth homework helper is a pro-
gram in which children tutor younger ones in an after-school effort which focuses upon cognitive areas. Under the direction of a Mobilization for Youth coordinator, in February, 1963, nine tutorial centers were organized in neighborhood elementary schools with a licensed teacher in charge within each school. The licensed teacher arranged weekly in-service meetings and all other tutoring-related activities. From November, 1963 to June, 1964, a careful evaluation was made of the program. Experimental and control group students were randomly divided into groups according to predetermined comparable samples. There were 410 experimental pupils and 185 control pupils. About half of both groups were Puerto Rican and thirty percent were Negro. Experimental pupils were tutored either two or four hours per week and control pupils did not participate in tutoring at all. Improving reading achievement was the major goal of the program, and students were pre- and post-tested. At the beginning of the program, the average fourth-grade subject was reading at grade 3.5 (eight months below grade level), and the average fifth-grade pupil was reading at grade 4.2 (one year and one month below grade level). There were significant differences between experimental and control subjects. After five months, the post-tests revealed that the four-hour tutored pupils had gained an average of six months in reading achievement. The two-hour group made a gain of five months in reading. The control group showed only 3.5 months' reading growth during the same period -- the "growth"
rate of the controls may be more accurately regarded as progressive retardation. The pre-test results of the 240 tutors showed their mean reading level was a grade equivalent score of 10.0. However, 22% scored lower than a grade equivalent score of 8.0 on the reading achievement test. After 7.5 months of training and tutoring, the tutees showed a mean growth of 3.4 years in reading achievement as compared with 1.7 years for the control subjects.

Similar success is indicated when Rosner reported the results of a ten-week cross-grade tutorial cycle. 68 Twenty-six children were involved in the tutorial program. The tutors were fifth and sixth grade remedial students; the tutees were thirteen second and third grade remedial students. All of the participants were tested with the Gates-McGinitie Vocabulary and Comprehension Test. In addition, the tutors were given the Comprehensive Tests of Basic Skills, Reading Section and the tutees were administered the Stanford Reading Test. The pre-tests indicated that the tutors and tutees averaged two years or more below their reading grade level. Comparisons of the pre- and post-evaluations indicated the tutees averaged four months reading growth on the Stanford Reading Test and five months growth on the Gates-McGinitie Test. The tutors, who tutored in the mornings and received remediation in the afternoon, had an average of one year and five months gain on the Comprehensive Tests of Basic Skills
and one year gain on the Gates-McGinitie. Maximum gain for a
tutee was one year and five months on the Gates-McGinitie. A
tutor's maximum gain was two years and two months on the
Gates-McGinitie Test. Rosner reported that similar results
had been charted each year of the six years that the program
has been in effect.

Another program examined not only the progress made
by the tutors and the tutees but also studied the effects
of two alternate procedures for tutoring -- one more
directive and didactic than the other. 69 Three graduate
students trained sixth grade students to use tutoring pro-
cedures. A random sample of forty-eight sixth grade high
and low reading achievers were paired with forty-eight kin-
dergarten remedial pupils. The sixth graders were
administered the Standard Achievement Test and the
kindergarten pupils were tested with the McNeil ABC Learning
Activities. The study, which had divided the group of
tutors according to which of the two techniques they would
utilize, and then each group into high and low achievers
based upon reading skills, found no significant differences
upon tutors caused by the techniques used. Nor was there
any significant difference in the effect upon the kinder-
garten children who were tutored in prereading skills. A
major difference was that children tutored were statistically
superior to the control group who did not receive tutoring.
There were greater gains by previous low achievers; but the achievement level of the tutor seemed to make little difference in the amount of learning obtained by the tutee.

The results of studies of Programmed Tutoring indicated that tutoring makes a significant difference upon the retention of low achievers. Programmed Tutoring, developed by Ellson and his associates, is a highly specified set of teaching operations which are easily taught to non-professionals. In Programmed Tutoring, the behavior of the tutor is controlled, first by operational programs which specify in detail how the teaching is to be done and, second, by content programs which specify what is to be taught and the order in which it is to be presented. All aspects of the operational programs, including practice and review, are highly responsive to the learner's interaction with the material. In one study 240 children, later decreased to 230, in twenty inner-city schools were tutored in two daily fifteen minute sessions of programmed tutoring during an entire school year. The reading achievement of the tutored children was compared with the reading achievement of a control group. The difference in the performance of the two groups was large enough to have practical as well as statistical significance. The slower learners benefited most; the range of scores for the lower half of the experimental group almost exactly coincided with that for the middle half of the control group. The proportion of reten-
tion was 55 percent lower for the tutored group than for the comparable control children.71

In another study which indicates positive gains for tutorial participants, Landrum reported the One-to-One tutorial project conducted in six Los Angeles school districts.72 The reading project was based upon three hypotheses:

(1) the process of teaching is an extremely effective method of learning;

(2) one's sense of power and worth is enhanced by success is a teaching role; and

(3) this success will motivate behavior suitable for maintenance of a more positive self-image and improved performance in school.73

Initial performance objectives were stated as follows:

Upon completion of the six-week session,

(1) the tutors' mean reading grade placement score will be increased by six months as measured by standardized reading achievement test;

(2) the tutees' mean reading grade placement score will be increased by three months as measured by standardized reading achievement test;

(3) participants' absenteeism will be reduced by fifty percent of that reported for the previous school year;

(4) ninety-five percent of the tutors will complete subsequent school term.74

The tutors were fourth, fifth and sixth graders who suffered from reading disabilities. Tutors included high school students reading two or more years below grade placement, and other teen-agers who were drop outs or drop-out
prone (as indicated by absenteeism, failing grades, or stated intent), and low family income. The tutors were given sixteen hours of pre-service training in the use of basic reading materials and instructional techniques. For six weeks each tutor worked with two tutees in a two-hour block.

The Los Angeles County Schools tutorial model has been tried under the varying conditions in sixteen school districts over a period of three years. Gains in reading achievement score have consistently exceeded initial expectations. During the 1967 summer program, 69 tutors gained 8 months in reading achievement and 348 tutees gained 4.6 months, while in the 1968 summer program, 78 tutors gained 4.6 months and 686 tutees averaged 4.8 months of reading growth.

Not all the results of tutorial programs are so dramatic but generally the progress experienced by the tutor and tutee is impressive. Moreover, improvement is made not only in the cognitive area but in the affective area also.

**Improvement of Attitude Toward Reading**

"Those who receive education are those who give it."  

For the tutor, teaching another student seems to provide feelings of competency and increased self-esteem, to develop responsibility and maturity, and even to help him to overcome shyness. The tutor becomes an active
participating learner, filling in vacuities in his previous learning which are reinforced by new insights. His role reversal facilitates attitude changes toward school and creates a need for learning social skills.

A massive, national "youth helping" project, Youth Tutoring Youth explains its basic principle, "Young people need an opportunity to test themselves, to reaffirm their abilities, to assume responsibility." Such opportunities are provided by tutoring. Test scores demonstrate only a small part of the effect upon participants of tutoring programs. The affective changes which are hardest to measure are often the most significant. Youth Tutoring Youth supervisors and program coordinators repeatedly confirm:

... once trust is given to tutors, they develop responsibility;

... the closeness of age and experience between tutor and tutee fosters a "special" understanding which facilitates learning;

... creativity is sparked and encouraged as tutors struggle to find their own ways to engage their tutees' interest;

... tutors often develop a new understanding of a teacher's role and difficulties.??

Finally, the effectiveness of Youth Tutoring Youth is evaluated by young participants who concur with the supervisors and program coordinators:

What I like about working here is because I have something to do. I belong, people appreciate me.

-- a tutor, Age 15
In my opinion the YTY program was very worthwhile. And I felt that I really helped someone. I think that this might be the greatest part of the program. A feeling of fulfillment. It might sound corny but that's how I feel. I also liked the feeling of independence that I had. It made me feel more at ease. I got more work done.

--- a tutor, Age 16

I like YTY summer school because the people here are friendly and I think I print and spell better.

--- a tutee, Age 7

Similarly, the tutors in the cross-age program reportedly gain in terms of attitudes, interest in school, and ability to work cooperatively with other children. The cross-age program is based upon a number of assumptions which include:

... involvement of older children in a collaborative program with adults to help younger children will have a significant socialization impact on the older children because of (1) the important motivational value of a trust- and responsibility-taking responsibility with adults around a significant task and (2) the opportunity to work through -- with awareness but a safe emotional distance -- some of their own problems of relationships with their siblings and peers; ... help them discover the significance of their [their] knowledge; ... a child will develop a more realistic sense of his own ability and present state of development ... 80

The effectiveness of tutoring is seen not only by teachers and students but by parents as well. A tutor's mother commented:

We were thinking last year of moving to a nicer neighborhood, but I decided against it. I was afraid Debbie wouldn't get this opportunity in another school. That girl has never been so contented, and I know it's just because she has the chance of helping another person. After
Debbie began tutoring, she’d come home everyday all excited about what she’d taught that day to Patricia. Then she’d start planning next day’s lessons. She made us set up a back room in the house as her schoolwork room. My husband worried that taking time to teach someone else might make Debbie’s marks go down. But they’ve gone up. She used to be N in arithmetic — "that means Needs Improvement." Now she gets G.81

Tutoring helps to build a peer group attitude that supports the value of helping youngsters and allows the helpers to discover positive ways of being influential.

For Thelen, who focuses his attention upon the nature of the relationship between the tutor and tutee, the tutoring program is not an end itself but an expression of the "caring relationship."82 During the spring of 1967, pilot projects were conducted in three Chicago schools which Thelen stressed the importance of the group. In each school fifteen pupil groups of fifth- or sixth-graders worked with first- or second-graders four to six times a week. The older children spent as much time together as they did with the younger boy and girls. Thus there were two kinds of caring: for each other as they faced the prospect of the younger children; and each working with the younger child.83 The findings of the Cross-Age Teaching project indicated a positive change of attitudes of the tutors on different scales:

Self-Concept was measured using the McDaniel Inferred and Self Concept Scales. The tutors and tutees exceeded their respective control groups.
Social Acceptability was assessed using measures of learning and leadership. Tutors' and tutees' gains exceeded that of control groups.

Discipline was measured according to teacher opinion. Both experimental groups improved more than control groups.

Attendance was increased for both tutors and tutees in comparison with control groups.84

A study reported by Porter85 also notes improvement in the attitude of tutors. Twenty-one high school juniors who had tutored fourth, fifth, and sixth graders were administered an attitude scale. Nineteen tutors indicated they enjoyed reading most of the books used during tutoring sessions. Pre- and post-tests comparisons showed that fifteen of twenty-one tutors improved in comprehension and vocabulary. Nineteen of twenty-one tutors manifested an interest in teaching as a profession. The tutee experienced similar improvement in attitude as his self-respect and belief in his own ability increased. His desire to learn increased as he became aware of his capacity to learn. The tutees in Porter's study reveal gains in self-concept as well as progress in cognitive areas. The highest percentage (89% positive answers on the attitude scale) was in the tutees' responses to questions related to self-concept.

Marsden's report86 indicated that tutees experience a number of affective gains -- like coming to school, enjoy being with tutors, participate in class -- and the attitudinal improvement appears to be related to improved reading skills.

Hassinger reported the improvement of the tutors and
tutees who participated in the Los Angeles One-to-One tutorial project in the summer of 1967. He recorded that at the outset of the program tutors arrived in class with beards, hair in curlers, and in extremely informal dress. No mention was made concerning their appearance, yet within a short time shaving was the mode, most girls elected to wear hose, and one group of five male tutors decided to wear white shirts and neckties. This evidence of change in tutors' attitudes was discernable after the second week of the program.

The closeness of the relationship which develops between the tutor and tutee indicates that ego and dependency function concurrently. It seems that the tutee feels that with his tutor's help he can learn to read and the tutor learns reading techniques because he has to be successful in the teaching process. The observations led Hassinger to surmise, "Perhaps more important than the measured reading growth was the positive attitude observed in the tutees, not only toward reading but in relation to their self esteem as well." 88

To illustrate how the One-to-One project affected participants, Landrum reviewed the case of one tutor, Maria. At age sixteen she had just completed her sophomore year in high school. She had developed the habit of missing a day of school each week. Having failed sophomore English, she informed the Neighborhood Youth Corps coordinator that she probably would not return to school in the fall.
Although Maria's absenteeism had previously been a problem, during the six weeks of tutoring she did not miss a day. Her initial diffidence to tutoring became zealously which, for the tutee's sake, had to be restrained. Her grooming became fastidious. Landrum summarized, "Maria returned to school that fall. Attendance was never again a problem, and she received no grade below a 'C'. Recently she talked to her counselor about becoming a teacher."  

The relationship between affective change and cognitive performance appear to be intrinsic and inseparable. The results of achievement tests administered to tutors and tutees are not solely evidence of increased knowledge of understanding. Rather, test scores also reflect a student's greater willingness to cooperate with teachers by trying to do his best on the test where before he may not have bothered to try. Thus, a measure of unusual growth may indicate a change of attitude rather than skill. In a Youth Tutoring Yough program in Phoenix, Arizona, 26 eighth-graders tutored 40 younger children, first- through fourth-grade for eight weeks. Both tutor and tutee groups were a year or more behind in reading. Tutor gain for the eight weeks averaged 1.83 grades, with some gains as high as 5.0 grades. Bartholomew explained:

It is obvious from the dramatic increases in reading that tutors could not have learned up to five grade levels in eight weeks. Rather, it is apparent that most of these children had a potential reading level higher than their school performances indicated.
These potentials are revealed and augmented in the Youth Tutoring Youth program where tutors are given respect, confidence, and relevant reading materials.

Noting that American children were more likely to look to their peers for models, Bronfenbrenner stated:

The most needed innovation in the American classroom is the involvement of pupils in responsible tasks on behalf of others within the classroom, the school, the neighborhood, and the community. The child who is taught by another gains from the opportunity to imitate or model himself after the older child, rather than the far distant teacher. Involving persons actually or potentially important to child in pursuit of a superordinate goal can have the effect of maximizing the incidence and inductive power of constructive behaviors and motives while reducing disruptive and negative influences.
Chapter 3

SUMMARY AND RECOMMENDATIONS

Summary of Findings

The findings of this study seem to indicate that at least one key to learning is individualization; and the use of para- and non-professionals as tutors is one way to increase this individualization. The power of learning through tutoring appears derived from a number of different dimensions; tutoring has multiple benefits for the teacher, the parents, the tutor, and the tutee. It has both cognitive and affective benefits. These benefits may be directly related to reading achievement and attitude.

Utilization of para- and non-professionals facilitates individualization through reduction of routine matters and class sizes, and through production of more time for pupil-teacher conferences, professional growth, and preparation. The use of auxiliary personnel may effect teacher participation and teacher planning in a collegial, participatory fashion, rather than the traditional hierarchical bureaucracy. For the teacher, tutorial assistants can provide time to play the role of manager of learning. From seeing others play the teaching role, the professional can gain insightful and useful perception into teaching.

Regarding the tutor and tutee, the study of para-
and non-professional programs reveal that in early tutoring programs in the United States the general emphasis was on improving the learning of the tutee. A general finding of this study is that the tutee may improve a small amount in his cognitive learning. However, the findings also show that potentially more significant benefits may accrue to the tutor. The slower students among the tutors and the tutees tend to make the greatest gains.

Recommendations

The findings of this study point out a growing need for more efficiently planned, organized and administered programs for training and utilizing participants in para-and non-professional projects in order to maximize their potential effectiveness. Subsequent recommendations to the educational community involve its coming forward to meet the challenge of a variety of needs:

... for a positive comprehensive theory indicating how to utilize a variety of approaches to improve learning of children;

... for an integration of techniques which have resulted in positive results;

... for the development of in-service training programs of teachers, aides, and administrators and suggested methods for implementation of aide programs;

... for experimental designs which permit a comparison of different aide uses with pupil achievement;

... clarification of expected roles of teacher and aide.
It is hoped that educators will consider these recommendations and implement this strategy for individualizing reading instruction.
APPENDIX A
A MODEL OF AN EVALUATION DESIGN

The evaluation of the effect of the tutoring experience upon the participants should be selected or designed such that cognitive and affective changes can be determined from the results attained. The following chart illustrates a potential model of an evaluation design developed by Fred Strodtbeck, Social Psychology Laboratory, University of Chicago, moving from hypothesis to instrument to variable.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Instrument(s)</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Improved attitudes toward learning and school.</td>
<td>Rotter's Internal-External Scale.</td>
<td>Competency and Environmental control vs. fatalistic subjugation to environment. Need Achievement.</td>
</tr>
<tr>
<td></td>
<td>Thematic Apperception Completion.</td>
<td></td>
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<tr>
<td></td>
<td>Franck's Drawing Completion Test.</td>
<td>Pragmatic self-orientation vs. idealistic other-orientation.</td>
</tr>
<tr>
<td></td>
<td>Boyd's Attitudes Toward School.</td>
<td>Self-image regarding school work. Relationship to teacher. Importance of doing well.</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Instrument(s)</td>
<td>Variables</td>
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<td></td>
<td>Loevinger's Sentences.</td>
<td>Self-concept and self-development.</td>
</tr>
<tr>
<td></td>
<td>Boyd's Attitudes Toward School.</td>
<td>Confidence vs. anxiety.</td>
</tr>
<tr>
<td>4. Increasing skills.</td>
<td>School records.</td>
<td>Reading and achievement goals.</td>
</tr>
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<td></td>
<td>Reading tests.</td>
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<td></td>
<td>Occupational aspirations.</td>
<td>Aspirational realities.</td>
</tr>
<tr>
<td></td>
<td>Postemployment evaluation questions.</td>
<td>Employee assessment of NYC experience.</td>
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<td></td>
<td>NCI Work Motivation.</td>
<td>Motivation to work.</td>
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APPENDIX B
CAREER LATTICE FOR AUXILIARY PERSONNEL
MINNEAPOLIS PUBLIC SCHOOLS

TEACHER AIDE

Illustrative Functions

A.
1. Take attendance.
2. Greet pupils and encourage pupil participation.
3. Correct objective-type papers.
4. Prepare materials for teachers.
5. Operate machines.
6. Arrange picture files.
7. Arrange interest centers.
8. Make and use flash cards.
9. Supervise small groups of children.
10. Listen to pupils read.

B.
1. Help students both individually and in groups.
2. Help children develop independent skills (writing, reading).
3. Arrange bulletin boards.
4. Make worksheets.
5. Make overhead transparencies.
6. Transfer marks to report cards.
7. Correct workbooks.
8. Collect lunch money and prepare report for office.
10. Set up appointments and conferences for the teacher.
11. Telephone parents for the teacher.

C.
1. Perform instructional activities as prescribed by the teacher.
2. Carry out directed tasks in the limited absence of the teacher.
3. Assist the teacher in making daily duties.
4. Work with children who have special problems.
5. Work with small groups while the teacher is working with the larger class group.
6. Prepare monthly attendance reports.
7. Participate in parent-teacher conferences.
8. Plan bulletin board arrangements and keep them current.
9. Assist the teacher in all areas of work.
10. Plan projects and help children carry them out.
Job Description for Educational Assistants in Elementary Schools.

Duties:

To participate in daily and long-range class planning.
To assist the teacher with large group activities.
To work with small groups or individual children.
To read stories to small groups or individual children.
To contribute to enrichment activities by utilizing special talents and abilities (art, music, interpreting foreign languages, etc.)
To assist the teacher in guiding children to work and play harmoniously.
To alert the teacher to the special needs of individual children.
To give special encouragement to the non-English speaking child.
To be a source of affection and comfort to all children.
To assist the teacher in necessary clerical work and to perform related duties as required.

Some Examples of Monitorial and Clerical Duties and Responsibilities:

Keeping attendance and health records.
Preparing instructional materials.
Arranging displays and bulletin boards.
Collecting monies and assisting with household chores.
Checking, storing, and taking inventory of supplies and materials.
Assisting children upon arrival and in preparation for dismissal.
 Escorting children (bus, office, toilet, playground).
Arranging for field trips.
Translating and interpreting foreign language.

Reference:

REFERENCES


5. Educational Statistics.


9. Brighton, Teacher Aides, p. 239.


12. Winn, p. 42.

13. Winn, p. 43.


19. Based on interview by Grace Watson, National Director of the Volunteers in Education.
34. Rist, "Black Studies."


36. Gartner, Children, p. 89.

37. Gartner, Children, p. 90.


41. Joseph Marsden, "Tutoring for Attitude Improvement," Instructor.

42. Vellutino, "Paraprofessionals."

43. Watson's interview.


45. Reissman, "Can Schools," p. 89.


59. Appendix B.
60. Appendix B.
61. Gartner, Children, (Appendix 1)
63. Gartner, Children, pp. 94-97.
64. Miller, "A Comparison."
73. Landrum and Martin, "One-to-One," pp. 446-448.
75. Winn, p. 32.
76. Youth Tutoring Youth newsletter.
77. Youth Tutoring Youth newsletter.
78. Youth Tutoring Youth newsletter.
79. Fox and others, Social Science, Chapter V.
80. Fox and others, Social Science, p. 83.
81. Gartner, Children, p. 69.
82. Thelen, "Tutoring," pp. 229-244.
84. Gartner, Children, pp. 132-133.
86. Marsden, "Attitude Improvement."
88. Hassinger and Via, "How Much," p. 44.


OBTAINING AND USING PARA- AND NON-PROFESSIONALS TO IMPROVE READING INSTRUCTION, ACHIEVEMENT AND ATTITUDE

by

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B. A., Grambling College, 1967

AN ABSTRACT OF A MASTER'S REPORT

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MASTER OF SCIENCE

College of Education

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ABSTRACT

This study surveyed the available literature concerning sources and uses of para- and non-professionals in an attempt to identify how best to employ auxiliary and volunteer personnel in reading programs. The literature surveyed included current reports of research, essays, and books. The information in this study has been gathered on the hypothesis that para- and non-professionals can be employed to improve reading instruction, achievement, and attitude.

Some of the major conclusions reached as a result of this study are the following:

(1) The teacher, the tutor, and the tutee can gain cognitive and affective benefits from their participation in reading programs which involve para- and non-professionals.

(2) Reading instruction can become a resolvable problem as a result of the additional time and aid contributed by para- and non-professionals.

(3) Students tend to make greater gains as tutors than as tutees in reading programs.

This study attempted to synthesize the findings into recommendations that educators may use to positively enhance reading instruction. The recommendations challenge the educational community to meet a variety of needs:
(1) Formation of a positive comprehensive theory indicating how best to utilize a variety of approaches to improve the students' learning.

(2) Integration of techniques which have resulted in positive results.

(3) Development of in-service training programs for teachers, aides, and administrators.

(4) Construction of experimental designs which permit a comparison of different aide uses with pupil achievement.

(5) Clarification of expected roles of teachers and para- and non-professionals.

As a result of this study, it is hoped that schools and teachers will carefully consider utilizing para- and non-professionals as one way of helping children better learn to read.