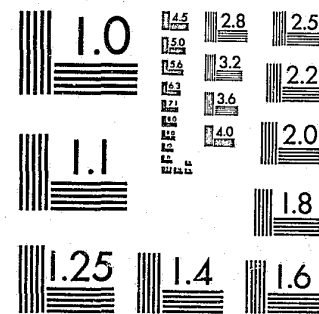


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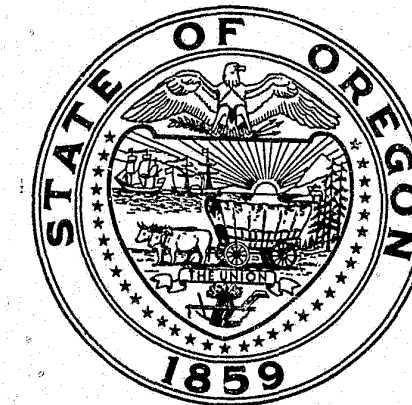
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EVALUATING THE CLASSROOM EFFECTIVENESS OF ROSEBURG'S
RIVERSIDE SCHOOL CHILD DEVELOPMENT SPECIALIST PROJECT
FOR
THE 1980-1981 SCHOOL YEAR:
A REPORT ON THE PRELIMINARY FINDINGS



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RIVERSIDE SCHOOL CHILD DEVELOPMENT SPECIALIST PROJECT
FOR
THE 1980-1981 SCHOOL YEAR:
A REPORT ON THE PRELIMINARY FINDINGS

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5. Ms. Carolyn Shelton, a former CDS and currently Coordinator of Special Youth Services with the Portland School District.
6. Mr. Scott Mutchie, CDS Coordinator and Director of Elementary Education with the Roseburg Public Schools.
7. Dr. Clinton Goff, Deputy Administrator at the Oregon Law Enforcement Council and Supervisor of the Evaluation and Research Unit.
8. Mr. Keith A. Stubblefield, Administrator of the Oregon Law Enforcement Council.

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EXECUTIVE SUMMARY

This report begins with an attempt to describe for the reader what the child development specialist (CDS) program is all about in terms of its basic concepts and underlying rationale as applied to delinquency prevention efforts. Given the growing interest in school-based delinquency prevention programs and the historical interest in evaluating the CDS program, the logic for evaluating the project at Riverside Elementary School in Roseburg is presented. Following this discussion a brief description of the comparison group evaluation design for the Riverside project is presented along with a discussion of the "comparability" of the primary grade study groups at the two study group schools.

Lastly, the results of comparing the study groups (those with and without exposure to the CDS program services) using various measures of classroom adjustment and child developmental levels are outlined for the reader along with the pertinent policy implications.

Based on the results of this preliminary research, it appears that the presence of the CDS project at Riverside School was associated with a statistically significant pretest to posttest improvement in teachers' ratings of the severity of participating students' general classroom adjustment problems and developmental levels. The same positive outcome was noted for "number" of such problems. While the results are less conclusive in terms of other measures of frequency of problem behaviors and classroom adjustment; it does appear that the results in general favor the CDS school (Riverside) over the non-CDS school (Eastwood). These results gain some further credence in light of the use of some checks in the data analysis to determine if we are measuring real change or simply teacher perceptions of change which can be easily distorted by organizational pressures to achieve certain results with students.

The general conclusion of this report is that, for the short duration of the CDS services here, the impact may be limited to a few problem areas and to reducing the severity of classroom adjustment problems.

Without additional refinement in our analysis and additional qualifications in our findings, it is difficult to elaborate on the policy implications of this research. One promising area for future policy-oriented research, however, is the finding that much of the positive impact of the Riverside CDS program was concentrated among those students experiencing both the general program and the special individualized or small group guidance services. The implication is that for those students most in need a combination and concentration of CDS services could have an especially marked impact on classroom adjustment, as well as, impact on developmental delays--at least in terms of teacher ratings.

Overall, it would appear that research on classroom adjustment and its causes and effects is a promising area for future delinquency prevention research and that the CDS program offers a service model with good potential for positively intervening in young peoples' lives in the world of school.

Evaluating the Classroom Effectiveness of Roseburg's Riverside School
Child Development Specialist Project for the 1980-1981 School Year:
A Report on the Preliminary Findings

What is This Report About?

There are several purposes for this report. First, the statewide child development specialist (CDS) program and the specific CDS project at Riverside School in Roseburg are described in terms of basic service rationale and over-all activities for the 1980-1981 school year. Second, an effort is made to "profile" the baseline developmental levels and classroom adjustment problems of the primary grade students selected from the study groups in the schools specified in the evaluation design. Thirdly, a serious attempt is made to assess the impact of certain "intervention" service components of the Riverside School CDS project in terms of over time effects on measures of child development and especially measures of classroom adjustment. Lastly, the implications of the research are discussed in order to focus on policy issues.

What is The Statewide CDS Program About?

The Roseburg Child Development Specialist program, with its five separate school project sites in and around Roseburg, constitutes part of the larger network of CDS projects currently operating in Oregon under the auspices of the Oregon Department of Education (ODE). During the most recent school year (1980-1981), the statewide program included 61 school CDS projects in fourteen (14) different school districts across the state. Fifty (50) of these programs received financial aid from the ODE which resulted in providing child development services to an estimated 28,263 Oregon school children. While variation existed between projects, all of these CDS projects are similar in terms of several key factors. Specifically, each project addresses goals held in common and each relies on a similar organizational structure to generate activities in support of these goals. One major goal of the CDS program is to assist children in the development of a positive self-concept which will help support learning and relating to self and others. A second major goal is to help identify children's strengths, as well as, specific "developmental delays" and to build a program to assist individual children reach their full potential in various areas of child development.

In general, the CDS program is a broad-aimed, prevention-oriented program which targets elementary school and especially primary grade (1st through 3rd grade) children for services which are designed to assist in providing for a

child's early developmental needs. These primary prevention activities or services are for all children and usually involve the classroom application of group guidance techniques in small group settings. In addition, the project and the CDS staff person can shift from a preventive mode to one of providing specific (remediation) services involving individualized educational activities designed to be delivered on a one on one basis to children demonstrating developmental delays and critical needs in the areas of psycho-motor and socio-emotional development, as well as, language and learning difficulties. In each school site or project, the child development specialist provides these services directly and also indirectly through the assistance of teachers, parents, school peers, and various professionals in the school or the community. In some projects the child development specialist has a part-time aide to assist in both the primary prevention and secondary prevention (or remediation) activities. Based upon coordinated diagnostic work for a child, the child development specialist may also refer the child to other professionals and coordinate treatment in team settings frequently involving teachers and parents.

The State CDS program is made up of individual projects each usually involving an individual school site and a single staff member (the child development specialist). Occasionally, the specialist might serve two (or more) separate schools. The range of staff configurations and target populations and sites varies somewhat. In Lakeview, for example, a single CDS worker was responsible for approximately 580 elementary school children in 30 classrooms spread across eight schools in rural Lake County. In Portland, the CDS project concentrated resources more heavily in that it served nine elementary schools with seven child development specialists and 25 CDS assistants. (Currently, the Portland CDS program has 9 part-time CDS assistants.)

The projects also vary in terms of target populations. Depending on the availability of kindergartens, districts have focused on K-3rd grades with most concentrating on primary grade children in first through third grades. Some districts have actively encouraged occasional referrals of older or intermediate level children (in 4th through 6th grades), while others have the child development specialist accept such children on a crisis basis only for counseling and individual one-on-one work. During the pilot stages of the statewide program, the state Department of Education was directed by the Legislature to focus only on the primary grades. In these pilot projects the number of teachers ranged from 9 to 13 and the number of pupils from 200 to 285.

The CDS program statewide represents an attempt to provide an innovative form of alternative educational programming which begins from the premise that schools ought to be for more than just teaching students reading, writing, and computing skills. Rather, education should serve all children and all of the child and it should involve everyone of significance to the child's education and social growth. CDS also is intended to enhance a student's academic performance through an emphasis on development of positive self-concept, problem solving skills, and social responsibility.

In the above sense, the program represents a reaction to the following components of contemporary elementary school education:¹

1. Selective or categorical education

Rather than organize instruction solely around selective categories or unique groups of students (i.e., bilingual, gifted, learning disabled, etc.); comprehensive and basic education for all children must be organized to enhance the student's feelings of self-worth and social worth. In particular, the program is intended to assist students in their preparation for assuming major life roles.

This whole child, life role philosophy is brought out very strongly in the following excerpt from the CDS "adopter's" guide:

"Schools are encouraged to develop the 'whole child'--to help children in the early grades begin to prepare to the best of their ability to assume six roles in life: learner, individual, producer, citizen, consumer, and family member. These life roles are the statewide goals for elementary-secondary education adopted by the State Board of Education."²

2. Cognitive Skill Development

While the development of cognitive learning in the classroom is a major goal of education in the United States, it is not the only goal nor is it a goal which exists independently of other

¹For a comprehensive overview of the statewide CDS program and its philosophy one may wish to review the following reference: Steven R. Nelson, Primary Prevention in the Elementary School: A Monograph of Oregon's Child Development Specialist Program, 1970 to 1977, Northwest Regional Educational Laboratory (Portland, Oregon), 1977. This report was prepared for the Office of Student Services of the Oregon State Department of Education in Salem.

²Child Development Specialist Program: An Adopter's Guide, 1976 (prepared by Dwight W. Fairbanks for the Oregon Department of Education), p. 1.

goals. This premise dominates much of the thinking behind the CDS program and it is also part of a national trend in elementary education which promotes "humanistic" education and the role of affective learning in the classroom.

Traditionally, cognitive learning emphasizes performance in intellectual tasks ranging from recall or reproduction of previously learned information to complex problem solving involving original and creative ways to reorder, combine, and synthesize ideas and information.

In contrast, affective learning emphasizes feeling states, emotions, and the notions of acceptance or rejection in socio-emotional relations with others. Affective learning may involve simply our feelings or emotions in being attentive to one another or to selected phenomena or it may involve complex aspects of personality and the qualities of one's character and conscience.

Many today view cognitive and affective education as equally necessary to an individual child's growth and development. In this regard, one educator recently stated:

"Humanistic education emphasizes affective learning as a partner to cognitive learning in the classroom. It concerns itself with the whole child. It deals with the child's self-esteem, values, goals, pride, relationships, and confidence. It sometimes consists of activities, exercises, and discussions presented in special humanistic education sessions. At other times, it is woven into the subject matter throughout the teaching day. The aim of humanistic education is to make school more relevant, more interesting, and more effective for all."³

There are, of course, other domains of learning and developmental activity such as, for example, psychomotor skills or the area of neuro-muscular coordination. However many areas we examine; the individual domains of learning and developmental processes are interdependent and interrelated. This interdependence of processes creates the need to examine the total person in the educational setting.

While the school may stress cognitive learning, it soon becomes apparent that factual information across many topics or subjects is of little use to a student unless he or she can relate to it in an affective sense and apply it to his or her own needs and goal directed behaviors. The value one places on information and the attitudes developed as a result of information obtained during cognitive learning are directly related to the personal meaning it has acquired for the learner. In turn,

³Jean E. Mestier, "Behavioral changes of Elementary Students Involved in the Human Development Program: "Magic Circle," Journal of Clinical Child Psychology, Vol. 5, No. 2 (Fall 1976), p. 18.

the individual's affective states and self-concept are directly related to his or her level of success or failure in cognitive learning and problem-solving.

3. Selective Prevention and Remediation

An implicit assumption of the CDS model is that the project is to serve all children--rather than some and not others. Further, services should involve all the educational partners in the student's school situation (i.e., parents, teachers, peers, etc.) and the needs of the total child.

The project approach is to "individualize" services and instruction without isolating children and without subjecting them to negative labelling and stigmatizing by peers and adults. In this sense the project attempts to avoid the problem of temporary education whereby concern for a few students with severe problems resulted in traditionally overlooking the needs of many.

Does the Program Rationale Fit That of a Delinquency Prevention Effort?

While the CDS project focuses very broadly on the educational and developmental needs of all elementary school children (and especially primary grade children), certain of its activities as outlined are very similar to some of those used in early intervention, delinquency prevention projects. Clearly the CDS program planners viewed the causes of the problem of delinquency and school-related deviances as linked to the developmental needs of young children. If a child's early developmental needs are not met, they reasoned, he or she may be burdened by various socio-emotional and physical problems later in life. These problems may in turn lead to delinquency. However, if schools stress affective and cognitive learning and development on an equal basis and if they work to develop the whole child at an early age, they may prevent many problems from developing later in life--especially during adolescence.

Focused as the program is, however, on primary grade (first through third grade) students, it is not likely that its services will have any immediate impact on delinquency rates. This is due partly to the fact that most of these children are too young (under 10) and haven't reached the age range for maximum risk of delinquent behavior (generally 13 to 17 years of age). Also, impact on eventual adolescent behavior comes indirectly through various intervening (or mediating) variables. For example, one line of thinking

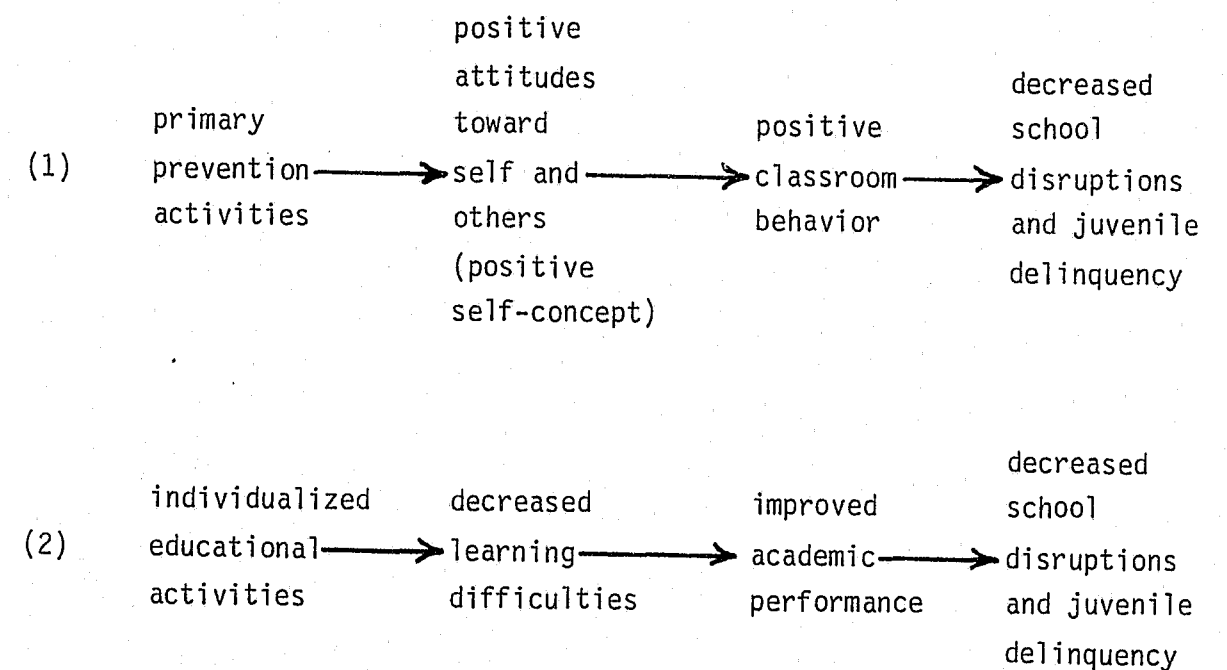
articulated by researchers examining the CDS program⁴ is that though its two basic program services⁵ one can expect two direct effects: improved self-concept or attitudes toward the self and decreased learning difficulties. These effects in turn can decrease the risk of eventual involvement in delinquent behavior. What we end up having is a set of intervening variables which Carol Weiss describes as "bridging" variables.⁶ These variables are described as providing presumed links between the events or activities of the program (program input or input variables) and the desired effects of the program (outcome variables). Together, the input, intervening, and outcome variables--and the presumed causal connections or sequences between them--represent the theory of the program. The theory of the program posits a sequence of events from input to outcome. More importantly, in order to reach the desired program goals or ends, it is necessary that certain intermediate milestones (sub-goals or sub-objectives) be achieved. This is especially important in a program such as the CDS program in that the staff and funding sources make a very long term investment in younger elementary school children in the hope that early exposure to program input (counseling and special educational services, staff, and activities) will eventually impact delinquent behavior in early adolescence. It also is important to note that the long term effects of a CDS program should arise as a result of careful attempts to enhance parent education and teacher training. Ideally, the larger impact of the program should be the result of a "networking" process whereby more and more adults are taught to more effectively treat child development issues and problems, as well as, to assist students in developing their particular assets.

⁴See Lawrence J. Schweinhart, "The Evaluation of the Portland Child Development Specialist Project: Design and Measurement," High/Scope Educational Research Foundation (600 North River Street/Ypsilanti, MI 48197), 1978 for a discussion of the Portland CDS program in terms of hypothesized links between program activities and direct and indirect effect or outcomes.

⁵One type is the program's primary prevention activities; i.e., classroom applications of group counseling techniques engaged in by all primary grade children. The second type of service, individualized educational activities, is provided for children identified by teachers as having learning difficulties.

⁶Carol H. Weiss, Evaluation Research, Methods of Assessing Program Effectiveness, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1972, pp. 48-49.

In the case of the CDS program there are a number of hypothesized paths for examining program effects. Two paths discussed in the Portland CDS evaluation research,⁷ posit relationships between both the primary prevention and the individual educational activities⁸ and delinquency involvement. These can be diagrammed as follows:⁹



Some refinement in these path models can be made in that other paths are possible using the same set of variables. Positive classroom behavior, for example, can be linked to improved academic performance which in turn can influence rates of delinquency involvement. Also, an enhanced self-concept can affect delinquency indirectly via decreasing learning difficulties.

Since the classroom behavior of children and their academic achievement is a central focus of the CDS program and is closely linked to juvenile delinquency, classroom behavior can be viewed as a direct program effect and clearly seems

⁷Lawrence J. Schweinhart, op. cit., p. 10 and also James Kushmuk, Evaluation Design for the Portland Area II Child Development Specialist Program, Office of Justice Planning and Evaluation, Portland, Oregon, 1979, p. 18.

⁸See footnote 5 for a description of these two types of project services.

⁹The arrows in these path diagrams represent the term "implies" or "leads to."

linked to pupils' attitudes toward themselves and others. In fact, if the CDS project realistically hopes to eventually impact delinquency; then, it must do this partly by enhancing positive self-concept and social attitudes as outwardly expressed in positive classroom behavior. As we shall see shortly, the intermediate goal of enhancing classroom adjustment will merit much of our attention in this research effort.

Is the CDS Program Rationale Consistent with Current Research and Theory Regarding Delinquency in the Schools?

A growing body of theoretical and research literature in the behavioral sciences attests to the salience of school-related experiences in the etiology of delinquent behavior and adolescent deviance in the public school setting. Though the literature suggesting empirical linkages between adverse school experiences--reading problems, under achievement, misbehavior, truancy, early school leaving, etc.--and delinquency goes back several decades, the increasing importance of education in a high technology, success-oriented society has accentuated efforts to trace out connections between school experiences/school climate and delinquency.

Especially relevant to this body of research is a discussion of failure in playing important social roles--including the student role. Martin Gold's comments are particularly germane here:

"No other role incumbent upon young people in our society is so fraught with failure as studenthood. Insofar as any role entails clear and pressing standards for achievement, it creates the conditions for success and failure. Achievement stands at the core of the student role. Constant testing, grading, and comparing are indicative of the salience of striving. Experiences of success and failure pervade scholastic life, especially at the secondary school level. In no other setting--at home, on the job, among friends--are the standards of achievement so clear or the means to attain them so narrow. The only adolescent role comparable in this respect to being a student is being an athlete; and today, the athlete role during adolescence is so closely tied to the schools as an institution that it may be said to be a role within it."¹⁰

¹⁰Martin Gold, "Scholastic Experiences, Self-Esteem, and Delinquent Behavior: A Theory for Alternative Schools," Crime and Delinquency, Vol. 24, #3 (July 1978), p. 292.

Gold advances a theory in which he proposes that delinquent behavior is a manifestation of psychological defenses against threats to self-esteem. A substantial number of these threats originate in school experiences, he feels. While negative school experiences weigh heavily in the etiology of delinquency, Gold feels that the school itself may be in control of the major social psychological forces that generate delinquency. Further, the schools can mount ameliorative efforts in the form of individual educational programs that maximize success experiences and provide for more personal teacher-student relationships. Such programs have the potential to reduce the provocations for and strengthen the controls against delinquency. This programmatic response is particularly important in that Gold concludes that the schools as an institution may have the capacity to prevent and reduce delinquency, independently from other institutions in their community.¹¹

From Gold's statements and from other research literature, it would appear that school-based programs such as the CDS project appropriately focus on the social milieu or school climate of the school as an area for conducting counseling and other activities designed to reduce the risk and manifestations of delinquent behaviors. In organization building terms this also means that efforts must be made to systematically upgrade teacher abilities, skills, and behaviors so that teachers can improve in the area of "modeling behaviors" for students.

If school-based programs such as the CDS project are to be successful, however; they must be to some extent theory-based or at least designed to take advantage of staff and teacher ability to identify behavior problems in school and respond or intervene appropriately. In this respect, it is interesting to note that teachers have some credibility in terms of their ability to identify behavior problems in school. In his review of the literature on delinquency prediction, Peter S. Venezia¹² notes that there is considerable evidence that classroom teachers are often capable of predicting the behavior of their pupils. Teachers appear to be especially good "casefinders" or predictors of

¹¹Gold, Ibid., pp. 290-291.

¹²Peter S. Venezia, "Delinquency Prediction: A Critique and a Suggestion," Journal of Research in Crime and Delinquency, Vol. 8, No. 1, (January, 1981), p. 114.

future delinquency when they are instructed to look for classroom misbehavior of a serious nature (not the run-of-the-mill variety) at a very early age and when the instructions emphasize both systematic, objective observations combined with naturalistic, a priori comments about the child. Teacher accuracy rates, however, tend to drop off when the criterion behaviors teachers are apt to predict become defined in vague terms. Also, teacher biases tend to result in overprediction of delinquency for lower income level and less capable students and underprediction for upper income level and more capable students.

Despite these qualifications, a number of reviewers and observers see classroom behavior as being of strategic value in the prediction of delinquency. Many believe that because of the link between classroom misbehavior and later delinquency, the schools and their staff should play a unique role in delinquency prevention efforts. Venezia states that "...a most promising approach to delinquency prevention appears to be one of focusing upon the young child in the school environment. It is here that comprehensive and relatively objective information about each child is readily available."¹³ It is also important to note the need to impact school climate and to increase the effectiveness of the school as a social institution.

Why Should We Evaluate the Roseburg CDS Program?

When viewed against this growing body of literature linking school experience to delinquency and current efforts promoting school-based delinquency prevention programs, it becomes clear as to why the Oregon Law Enforcement Council (OLEC) expressed an interest in funding and evaluating school programs such as the CDS project to prevent delinquency.

Dating back to its origins in FY 1969, the OLEC has funded a number of school-based delinquency prevention programs. In fact, beginning in FY 1970, the OLEC began funding, in Bend, the predecessor project to the child development specialist program. This program, the Bend Public School District's Elementary School Counseling Project, experimented with the operational aspects of the concept of working with children in first through third grades and their families in order to decrease life adjustment problems (such as juvenile delinquency) in subsequent years.

¹³Venezia, Ibid., p. 117.

OLEC funding for the Bend Elementary School Counseling Program (also known as the Juvenile Delinquency Prevention in Schools Project) extended from FY 1970 to FY 1974 and the project operated from September, 1970 to June, 1974 with these funds before being assumed locally. Eventually, the program grew in this period to include a director and four counselors serving eighty teachers (with in-service training) in eight elementary schools with a 1974-1975 school year ADP of 2530. During the 1972-1973 school year the program identified 114 elementary students evidencing "in school anti-social" behaviors. Project activities included conducting consultation with teachers in the identification and treatment of potentially delinquent children; consulting with parents; individual and group counseling with students; providing liaison with schools and other community agencies; and testing students in terms of their in-school antisocial behaviors.

In research conducted by the Northwest Regional Educational Laboratory, the short term goal or outcome objective of reducing students' in-school "anti-social behavior" was addressed through use of a research design employing a nonequivalent control group and the Walker Problem Behavior Identification Checklist. Findings based on comparison of pre-test and post-test scores indicated improvement for both "treatment" and "comparison" groups, but these were not statistically significant nor could the changes be attributed to the program.

Based upon hearings held in Bend in the Autumn of 1972, the original conception of the CDS program was proposed in the 1973 Oregon Legislative Assembly in House Bill 2455. In this bill legislators sought a mechanism to develop a model for a statewide CDS program which would be tested initially at six pilot project sites. Roseburg was one of these sites.

Originally, the Roseburg CDS program operated at two school sites (Fir Grove and Rose Elementary Schools) and targeted approximately 280 children in grades one through three to be served by a single, full-time child development specialist.

Project objectives related to students originally were based on proposals to improve school adjustment to reduce the incidence of self-defeating or socially destructive behaviors in selected children, and to meet the developmental

needs of children on an individual basis in such areas as physical growth, psychosocial adjustment, and psychomotor skills. These objectives were to be achieved through various intervention procedures including the provision of affective classroom experiences and curriculum and individual and group counseling with students, as well as, coordination of activities with teachers and various school-based professionals.

Eventually, the CDS program in Roseburg was expanded to five school sites with five separate specialists and a secretary. During the 1979-1980 and the 1980-1981 school years the OLEC funded two of these projects (one at Melrose Elementary School for both years and one at Riverside Elementary School for the latter school year only).

Before the Roseburg CDS project and after the Bend Elementary School Counselor projects, the OLEC also funded a CDS program in the Lake County public schools. The OLEC experience with efforts to monitor and assess the Lakeview CDS program, as well as, a growing concern with school-based delinquency prevention efforts actually provided the initial basis for wanting to evaluate more intensively the delinquency prevention potential of certain features of the Roseburg CDS program.

In Lakeview and Lake County the CDS project supported the work of a single staff member (the child development specialist) who coordinated a child development based education effort in eight Lake County elementary schools representing a population of approximately 580 children in 30 classrooms. Like the other CDS programs several features of the program were distinguished here. First, there was an emphasis on testing and screening for children with learning, emotional and various developmental delay problems. Second, the specialist was to provide selected children (and their parents) with informal counseling. Third, the specialist was to provide diagnostic work on child problems and arrange for and monitor attempts to correct these problems (such as those related to poor reading skills, inadequate motor skill development, and problematic social/emotional behavior patterns). Lastly, the specialist was to provide inservice training/consultation to teachers to assist them in providing effective education to all students. The emphasis of the project was on developing cognitive, as well as affective, education skills. In short, the program logic was that a balanced attempt to promote child development and reduce the impact of developmental delays would enhance the student's chances of avoiding later anti-social behavior patterns such as delinquency.

The results of the OLEC monitoring of the Lakeview CDS project along with an examination of the Northwest Regional Educational Laboratory's evaluation of the project revealed a unique set of problems applicable to the evaluation of any CDS project.

First, an examination of the way that the Lakeview CDS project screened for children with identifiable needs in terms of child development revealed a basic impasse for anyone concerned with project impact (outcome level) evaluation.¹⁴ At the beginning of the school year teachers used a preliminary checklist to rank children into three (3) categories of development. One of these levels (level 3) contained those children classified as problematic in terms of child development (motor skills, cognitive skills, and personality development). Once these "level 3" children were identified, the teachers completed more extensive checklists on the specific problem behaviors and attitudes.

At the end of the school year the preliminary checklists were repeated to determine how many "level 3" children there were. Unfortunately, however, the project did not track the "level 3" children identified at the beginning of the school year through time and retest using the more extensive checklist a second time. This left the project in the position of being able to demonstrate a reduction in the number of "level 3" students over the course of a school year, but not able to demonstrate that particular, individual students starting out as 3's improved over the course of the year.

Second, in addition to the failure to test and retest (with the more elaborate checklists) the same children the project did not track "level 3" children over time in terms of acting on the particular diagnostic plans developed for each child. The emphasis of the program remained always on all children in the schools and general child development rather than on improving the development of specific children identified as having specific developmental problems (many of which might have been linked to later deviant behaviors).

¹⁴Outcome or impact level evaluation focuses on outcome objectives which indicate the kind and extent of improvement anticipated vis-a-vis the identified client or area delinquency problems. Outcome objectives specify in quantitative terms the precise level of improvement expected, as well as the amount of time deemed necessary to achieve the outcome objectives.

Even in terms of an emphasis on improving child development across all children in all schools the project suffered from certain problems according to the Northwest Regional Educational Laboratory evaluation report. In general, most teachers evaluated the project low given that they felt the Lake County CDS attempted to spread himself too thinly over too many schools spread widely across a huge geographic area. While the CDS worked with each school for two weeks of the school semester and attempted to train teachers to deal with child development problems, his services were perceived as too thinly spread to even have a positive impact on teachers let alone students. This also jeopardized the achievement of activity or process level objectives.¹⁵

The experience of this project and the preliminary evaluation results lead us to some inescapable conclusions:

1. Adequate evaluation of a CDS project must begin with a well developed evaluation design which determines in part project operations and data collection efforts.
2. No CDS project (especially one funded with crime control funds) can be adequately evaluated without a careful examination of the impact of project (and referral) services on specific, identified children with specific, identified developmental problems.

For these reasons, therefore, we proposed that OLEC funded CDS projects be committed to at least the use of quasi-experimental research designs to measure impact or outcome objective achievements, as well as achievement of activity or level of effort objectives. Given the public interest in CDS models¹⁶ and the absolute absence of intensive (outcome oriented) evaluation of such projects, it was very important that we subjected the OLEC CDS projects at least to more rigorous evaluation. We proposed to use Roseburg as

¹⁵Process level evaluation is concerned with activity objectives which specify the types, range, and amount of services to be delivered, the target area/population which will receive these services, and the manner in which these services are to be delivered.

¹⁶Note the development of CDS in the state and the national efforts based on the Oregon model to pass legislation to mandate such programs.

an initial site for the testing of the CDS model in the area of early intervention and delinquency prevention in the juvenile justice system.

As part of our evaluation grant we proposed to develop a design for evaluating the proposed CDS program for Riverside Elementary School in Roseburg for the 1980-1981 SY. This design was to be fully developed in terms of data collection procedures (and instruments), data analysis procedures, and the preliminary involvement of participating parties (the SPA Evaluation Unit, the local CDS project, the local CDS advisory board, and the state Department of Education). In our preliminary work we explored the possibility of rigorous project evaluation with the CDS Project staff in Roseburg, and with the state Department of Education. This was to be a novel effort in that it would be a fully cooperative effort on the part of the participating agencies.

Current Policy-Related Research Interest in the Oregon CDS Program

In a recent publication of the National Center for the Assessment of Delinquent Behavior and Its Prevention,¹⁷ Oregon's Child Development Specialist (CDS) program was included as one of thirty-six (36) program models in the United States which showed promise in the area of preventing youth crime and juvenile delinquency. Of the many features of the program which the Assessment center people found promising, several are worth mentioning here.

First, the program makes a plausible statement about the causes of delinquency. Basically, the causal argument is that a child's unmet early developmental needs may lead to emotional, intellectual, social, and/or physical problems later in life. These problems in turn may lead to delinquency.

Second, the program rationale statement identifies in very clear and strong terms the role of the school in the prevention of juvenile delinquency, youth crime, and other child and adolescent problems. The assessment center recap is worth quoting here:

¹⁷See John S. Wall, J. David Hawkings, Denise Lishner, and Mark Fraser, Juvenile Delinquency Prevention: A Compendium of Thirty-Six Program Models, National Center for the Assessment of Delinquent Behavior and Its Prevention (Center for Law and Justice at the University of Washington, Seattle), 1980.

Schools should be designed to do more than teach students to read with comprehension, write legibly, and compute accurately. They also must help children know themselves and their environments in a positive way. To help children assume six roles in life--learner, individual, producer, citizen, consumer, and family member--schools must stress affective and cognitive development on an equal basis. By working to develop the whole child at an early age (i.e., elementary school years, K-6), the Child Development Specialist can prevent problems from developing later in life.¹⁸

Third, though the CDS program has broad aims; it is exactly this broad focus which impressed the Assessment Center reviewers. They make the following observations:

The orientation of the CDS program is both remedial and preventive in nature. By working with classrooms as a whole and providing individual assessments of all students, the program may avoid labeling problems which can occur through treatment focused solely on problem individuals. However, those children who are experiencing developmental difficulties still receive the attention (and the referrals to resources) they need.¹⁹

Other sources of support for assessing the performance and effectiveness of the CDS program model have come from a variety of sources. These include the Oregon Law Enforcement Council, the Governor's Task Force on Juvenile Corrections, Portland's Office of Justice Planning and Evaluation, the Student Services Unit in the Department of Education, the Juvenile Services Commission, and a variety of local school district personnel in the CDS program sites around the state.

The statewide concern for evaluation of the Oregon Child Development Specialist Program reached a high point during the 1979 Legislative Assembly. During the regular session, the Governor's Task Force on Juvenile Corrections efforts to make expansions and assessment of the CDS program a high priority in task

¹⁸John S. Wall, et al, Ibid., p. 26.

¹⁹John S. Wall, et al, Ibid., PP. 28-29.

force recommendations to the Governor led to the writing of legislation (S.B.109). From a policy research standpoint, the most significant aspect of this proposed legislation was a provision for a required research study by a third party evaluator to measure longitudinally the effectiveness of the CDS program in randomly selected sites.

This evaluation was to include, but not be limited to:

- a. Measurement of the extent to which the programs achieve enhanced paternal attitudes;
- b. Increase in number of staff development workshops in the areas of learning disabilities and developmental problems in children;
- c. Increased interactions among agencies serving children;
- d. Increased involvement of parents in planning education programs;
- e. Reduction of learning difficulties;
- f. Reduction of school disruptions and school vandalism;
- g. Reduction of truancy and school dropout rates;
- h. Reduction of number of children taken into custody by police for offenses; and
- i. Reduction of number of referrals of children accused of offenses to county juvenile departments.

The remainder of this report is concerned with outlining the results of research utilizing a comparison group research design to evaluate the performance and impact of certain components of Roseburg's Child Development Specialist (CDS) program. In particular, the design statement addresses concerns about being able to document the success of the program--especially where the desired impact of services is targeted on children's problem behaviors and general developmental needs. Major findings and recommendations are discussed in terms of this design--especially in terms of the suggested or inferred impact of the CDS services on the rated classroom problems of targeted elementary school children.

Brief Description of the OLEC Evaluation Research Design for the Roseburg School District's CDS Project at Riverside Elementary School

Our evaluation design for the Roseburg CDS program centers mainly around one CDS school (Riverside Elementary School) and around measured changes (via teacher ratings) in the classroom behaviors and developmental levels of primary grade children.

The goal of our evaluation activity is to accurately determine key areas where the program should positively impact children, teachers and parents, and to establish ways of measuring these impacts. The results of this research should help to determine if the program is of value in reducing student learning difficulties, reducing disruptive behaviors, and in promoting positive socio-emotional growth. Ideally, this evaluation effort will shape program funding and modification decisions.

There are three distinct methodologies employed in our original evaluation study. First, there is an attempt to compare the advantages of having and not having a CDS program by contrasting and comparing classroom adjustment problems and levels of child development for all children in the primary grades in two schools (one with and one without CDS staff). Second, in the school having a CDS project (Riverside Elementary School), there is an attempt to measure the impact of program services and resources on a specific group of children having classroom adjustment and other developmental problems. Finally, an effort was made in all five schools with CDS staff to determine if the CDS staff can be effective in reducing specific classroom adjustment and developmental problems manifested by older students individually referred to the program on a crisis basis. This preliminary evaluation report describes results of using the first of these evaluation methodologies.

Development of a Comparison Group Design to Test the Effectiveness of the Riverside Elementary School CDS Project in Impacting Classroom Behaviors

Because OLEC funding helped initiate a CDS project at Riverside Elementary School during the 1980-1981 school year and because no CDS program or similar type of program existed here prior to this school year, it was decided that this site offered an excellent opportunity to test the effectiveness of the program model in reducing classroom adjustment problems of primary grade students.

Counting schools in the suburban fringe area of Roseburg (a community of 16,644 residents according to the April 1, 1980 census of population), there are ten (10) elementary schools in Roseburg. Five (5) of these ten schools have CDS projects. Since reviews of prior CDS evaluation research efforts and issues indicate the need to avoid confounding the effects of age and treatment (and other variables) through the use of (preferably) a contemporary comparison group,¹² it was necessary to choose from the five schools without CDS projects to serve as a comparison for Riverside.

Based on discussions with school administrators (plus the five CDS staff members) and a very casual analysis of school district data, it was decided that Eastwood Elementary School provided the best possible match with Riverside Elementary School. This choice was partly the product of the assumed similarities between schools (see discussion below) and partly the product of an interest in eventually expanding the CDS program to the next school logically in need of such a program. In this last respect school administrators felt that Eastwood was both a good match for Riverside and also an attempt to map out the classroom adjustment problems and developmental needs of children at Eastwood (as well as Riverside) would provide a basis for future planning for and implementation of an Eastwood CDS project. (See Appendix A for a map of Roseburg giving the location of each school.)

Riverside is located in a predominantly lower income or working class area of businesses and residential areas just north of the downtown business district and approximately midway between the major north-south highways serving Roseburg (Interstate 5 and U.S. Highway 99) on a busy east-west through street. The area was described by one school administrator as an area of "low stability" with a heavy turnover of residents through rapid in and out migration. The area is dotted with apartments, warehouses, and light industry businesses of all kinds. Residentially, the area is home to a number of blue collar workers--primarily mill workers and related workers involved in the area's vast forest product industry. It was noted that the seasonality and cyclical nature of this industry contributed to the somewhat instable nature of the area's residential patterns. The writer in collecting data in this

²⁰John S. Wall, et al., Ibid., p. 28 and Lawrence J. Schweinhart, Ibid., pp. 2-7.

school also noticed a tendency for some families to move in and out and back into the school district. A valid observation might be that while many families were attracted to the "livability" of the Roseburg area, a number of them frequently felt compelled to make residential changes necessitated by the area's changing employment patterns.

The Eastwood School District varies somewhat from that of the Riverside School. Most (but not all) of the differences are matters of degree. While the Riverside School is centrally located in a busy business and industrial district, the Eastwood School is slightly removed from a central location in terms of nearby concentrations of business and commerce. Physically, the immediate area around the school appears more residential in nature. There are fewer apartments and more houses. The houses are also different from those in the Riverside area in that they appear newer and of somewhat better quality. A fair assessment would be that the Eastwood School district is basically an area with a mixture of lower class or working class and lower middle class families. It also appears to be a somewhat more stable area in terms of the residential mobility of the inhabitants.

Riverside and Eastwood schools also appear to differ somewhat in terms of actual physical plant and grounds. The Riverside School buildings appear to be ten to twenty years older than those of the Eastwood School complex. The school yards also differ. Riverside has a harsh, urban (central city) sort of appearance with little grass and an entirely asphalt paved rear playground. Eastwood school in contrast has more of a country park atmosphere with a large grass lined playground. During after school hours, the grounds at Eastwood attract a number of surrounding neighborhood children whereas Riverside School appears more deserted and less often used by children from nearby.

While the staff at both schools appear traditionally middle class in their orientations, one gets the feeling that Eastwood fits the middle class mode slightly more heavily. This is especially so when one works with the school records. At Eastwood the records and files are somewhat better organized and appear neater--both signs of middle class professional values. This may be because of a difference in accountability. Middle class parents and middle class teachers appear to exhibit a greater interest in neatly recording and tracking the progress of middle class students.

Both schools are comparable in terms of size. Figures from the Fall of 1980 indicated that Eastwood had 16 certified teachers and an enrollment of 230 students whereas Riverside had 21 certified teachers and an enrollment of 292 students. Since the CDS project at Riverside was designed to serve mainly primary grade (1st through 3rd grade) students, the distribution of these students at each school is of some interest here:

	Riverside (CDS School)			Eastwood (non-CDS School)		
Grade:	1st	2nd	3rd	1st	2nd	3rd
No. of Classes (Teachers)	2	2	3	2	2	2
No. of Pupils	43	46	56	38	29	36
Average No. of Pupils per Teacher	21.5	23.0	18.7	19.0	14.5	18.0

Basically, we are regarding the match between a school with a CDS project (Riverside) and a non-CDS school (Eastwood) as close enough demographically speaking to offer the possibility of a comparison group design for our evaluation of the CDS project at Riverside. The real test for the comparability of schools, of course, comes as we continue to move toward "between school" comparisons of the actual children selected for our study.

The type of research design we were working toward for this component of our evaluation study is commonly referred to as the nonequivalent control group design.²¹ It is perhaps the most common research design in practice in the behavioral sciences and is used to provide a standard against which to statistically compare two or more programs--or to compare the presence of a program against its absence in terms of effects on the attitudes and behaviors of clients and others in predetermined study groups.

²¹See Donald T. Campbell and Julian C. Stanley, Experimental and Quasi-Experimental Designs for Research, Chicago: Rand McNally, 1963, pp. 47-50.

In the broadest sense we are using the term experiment to designate a type of research design that permits the testing of causal hypotheses which seeks, for example, to answer questions as simple as: Was a certain effect on one element in a situation produced by some other element? In our case we have a central hypothesis that states that X (exposure to CDS project services) has a certain effect on Y (mainly an improvement in teacher ratings of classroom adjustment and behavior). Other causal hypotheses can be stated and submitted to testing via the use of measurements or "variables" and comparisons employing certain previously developed standards outlined in one's research design. One's preference ought to be to have a research design which can generate the greatest number of causal inferences and still be able to account for or control for the greatest number of extraneous variables and rival hypotheses or explanations for the evaluation results.

The nonequivalent control group design has several distinguishable features. Unlike the true experimental design (or the classical randomized experiment), this quasi-experimental design does not provide for random assignment to program and control groups. Instead, "controls" are made up of available individuals from certain naturally occurring, intact groups (such as different classrooms, schools, or cohorts). These individuals or groups are believed to possess similar characteristics to those of a "treated" program group. As "non-randomized" controls they are generally referred to as "comparison groups." Before and after measures are made for both the experimental (or treatment) and the comparison group and the results are compared and analyzed. To the degree that the groups can be carefully matched and one can rule out any pre-existing differences between them; then, we can argue that any later differences between them should be due to the program.

In Campbell and Stanley's terms,²² the nonequivalent control group design can be diagramed as in Figure 1.

²²See Campbell and Stanley, Ibid., p. 6.

FIGURE 1

Diagram of the Nonequivalent Control Group Design
Employed in This Study

	Pretest ____(T ₁)____	Intervention or Treatment	Posttest ____(T ₂)____
Experimental Group (Riverside)	YES (O ₁)	YES (X)	YES (O ₂)

Comparison Group (Eastwood)	YES (O ₃)	NO	YES (O ₄)

Where: T₁ = Time one or baseline period for pretests

T₂ = Time two or follow-up period for posttests

O₁ to O₄ = Points in time where some process of observation or measurement occurs which involves the dependent variable (Y) or the outcome behavior

X = Exposure of a group to an experimental or independent variable (treatment), the effects of which are to be measured.

The task for the researcher in this design is to explain the O₁-O₂ versus O₃-O₄ difference in terms of the research question: Did exposure to treatment make a difference in terms of the results expected by the logic of the program?

Implementing the Nonequivalent Control Group Design Outlined for the Roseburg CDS Project

1. Selection of the Research Study Groups

From our earlier discussion we had determined that the CDS program emphasis required that we focus on primary grade children for our assessment of the impact of project services on classroom adjustment of children. Eventually, our logic was to select for analysis second and third grade children in our study schools. We excluded first grade children from our study for two major reasons. First, we did not feel that the teachers would have had adequate time to assess the classroom adjustment and

developmental needs of these children. Second, it has been observed²³ that gains in self-concept, cooperation, participation, and the like during the first year of school are due to rapid socialization and that these gains and the socialization process are less pronounced in later years. It is this later period of childhood that is of most interest to us--especially in that the causal connections between more pronounced episodes of negative classroom behavior and later adjustment problems (including delinquency) become clearer and more obvious.

At the Riverside School (with the CDS program) there were 102 second and third graders and at Eastwood there were 68 students in these two grades in the Fall of 1980. After identifying these 102 Riverside students during late fall, the researcher and the project staff and administration agreed that the research effort would focus on these pupils. While the child development specialist (CDS) at Riverside was still expected to serve all of the elementary school (including first graders and intermediate level grades), it was agreed that the effort to determine program impact would focus on these 102 students. As mandated by the guidelines for the ODE's statewide program, the CDS staff person would continue to spend about 60 percent of his time on prevention activities for all children and about 40 percent of his time on implementing individual education plans for those children diagnosed as having special developmental delay needs and more severe classroom and social adjustment problems in the school. However, since more of his efforts were being requested for second and third graders in an attempt to concentrate and intensify service delivery for this group, the researcher and the school district administrative staff jointly proposed the idea of using a CDS aide on a half-time basis for the time interval between T₁ or Time One (the period for baseline measurement of classroom adjustment) and T₂ or Time Two (the follow-up period for measurement). This aide was not to be involved in the CDS classroom presentations using the effective education curriculum. Instead, her major role was to assist the child development specialist in implementing remedial or individual educational plans for second and third

²³See John S. Wall, et al., Ibid., p. 28.

grade students diagnosed as having developmental needs or socioemotional and learning problems. The nature of her tasks in this regard were less specific than those of the child development specialist. Rather, her responsibilities gave her a kind of nurturing role for those students identified for special services, as well as, the general target population of primary grade students (especially the second and third graders). She was also to assist the CDS in terms of data collection necessitated by the demands of the OLEC evaluation research.

The addition of a CDS aide for this project (at Riverside) and the greater concentration of effort directed toward second and third graders may have changed the CDS focus somewhat; but in general the project still retained the basic features of the general type of CDS project. If anything, the addition of a CDS aide made the Riverside CDS project in Roseburg more like those common in Portland and less like the rural school CDS program which operates generally without an aide and without the support of additional staff. In a sense this aide merely enhanced the intervention activities or services of the CDS project and her assistance helped to offset the impact of participation in an experiment which siphoned off some of the CDS's program time due to involvement in certain data collection tasks.

2. Selection of the Dependent or Criterion Variable Measures

Since classroom adjustment and behavior provides a key to the child's current developmental progress in the school and is a predictor of later adolescent adjustment (including delinquent behavior), it was vitally important that a appropriate measure of such behavior be used in our research. Two separate measures of classroom adjustment were used in our research:

a. The AML Scale

The AML scale has been described as an 11-item, 3-factor, quick-screening scale designed for teachers to use in identifying primary grade (K-3) children experiencing early school difficulties and maladaptation or dysfunction.²⁴ It was designed specifically for

²⁴Emory L. Cowen, et al., "The AML: A Quick-Screening Device for Early Identification of School Maladaptation," American Journal of Community Psychology, Vol. 1, No. 1 (1973), pp. 12-35.

early identification of school maladaptation to provide a base for intervention programs designed to overcome children's emotional handicaps, improve adaptation to the demands of the child's school environment, and minimize long-term dysfunction in school.

The scale itself contains 11 items which are believed to discriminate between children with and without teacher-identified school adaptation problems. The authors of the AML describe these 11 items as being distributed over three (3) basic dimensions or subscales as follows:

AML Scale	Behaviors Rated or Indexed	No. of Items	Scoring Range ²⁵
"A"	Measures frequency of aggressive-outgoing, acting out, and disruptive behavior	5	5-25
"M"	Measures frequency of undersocialized, dependent and shy-withdrawn or moody behavior	5	5-25
"L"	Measures the frequency of learning difficulty	1	1-5

T (AML-SUM)	Measures the frequency of occurrence of each of the above behaviors and provides a summary or composite score	11	11-55

In using the scale the teacher must rate the frequency of occurrence of each of the 11 behaviors on 5-point scales which range from (1) "never" to (5) "most or all of the time." Because the scale is brief, concise, and objective; it requires very little of the teacher's time --perhaps 30-60 seconds per child. (See Appendix B for a copy of the form used.)

²⁵In all cases, higher scores reflect more serious adjustment problems.

b. The CARS Scale

The CARS (Classroom Adjustment Rating Scale) comes out of the same research tradition as the AML scale. The scale is a modification of an instrument developed by Clarfield,²⁶ and later modified by Lorion, et al.²⁷ It consists of 41 behaviorally-oriented items which describe the severity of school adjustment problems using the same "A," "M," and "L" factors or dimensions specified in the AMS scale above. Besides providing information on the nature and severity of a child's classroom adjustment problems, the instrument permits teachers to consider the rated behaviors in terms of the extent to which those given behaviors interfere with the child's ability to profit from his or her school experience. Since the CARS instrument has a very central place in our data collection and analysis efforts here, we have included (courtesy of the Portland Public Schools CDS program) a copy of the description and instructions for using and scoring this scale in Appendix C. In addition, Appendix D contains a copy of the CARS data form. Like the AML, the CARS has separate "A," "M," and "L" factor or scale scores, as well as, "T" or the total score. (See Appendix C also for a discussion of how each CARS subscale is scored.)

Both the CARS and the AML scales were selected for use in our comparison group design for a number of reasons. First, both of them were used in a project (the Primary Mental Health Project) which (unlike the CDS project) was directed toward the early detection and prevention of school adjustment problems. Second, both scales had been used with some success earlier in the preliminary evaluation of the

²⁶Steven Clarfield, "The Development of a Teacher Referral Form for Identifying Early School Maladaptation," American Journal of Community Psychology, Vol. 2, No. 2 (1974), pp. 199-210.

²⁷Raymond P. Lorion, Emory L. Cowen, and Robert A. Caldwell, "Normative and Parametric Analyses of School Maladjustment," American Journal of Community Psychology, Vol. 3, No. 4 (December, 1975), pp. 291-301.

Portland Area II Child Development Specialist program.²⁸ Third, the scales have been "normed" for known populations of primary grade students. Lastly, the measurement of classroom adjustment using these scales and the particular items used in them were consistent with the content of both the goals of the Roseburg and the emphasis of the OLEC on examining the CDS program in terms of reaching certain short term objectives in terms of impacting children's behaviors in an ultimate delinquency prevention sense.

3. Further Specifications of the Experimental or Independent Variable

Obviously, the experimental (or independent) variable in our research is exposure or lack of exposure to the services of a CDS project located within an elementary school setting. The all-or-nothing nature of measurement of a variable with only two values or states (presence or absence of services) hardly adds to an understanding of how a program works or why we have an experimental effect--if indeed we have one. The leading question in the case of, for example, research showing superior results for the CDS school over a non-CDS school is what ingredients in the CDS program appear to make a difference with what particular students.

The difficulty in examining the CDS program from a research perspective is that the child development specialist appears to have assumed a great many roles, responsibilities, and tasks in a broad area of childhood behaviors and school activities. If, however, the program is to have an effect on children's classroom behaviors its services must impact both the way a child views himself or herself and his or her situation, as well as, impact his or her opportunities to develop personal skills and potentials.

²⁸See James Kushmuk, Child Development Specialist Program Second Year Evaluation Report, Portland: Office of Justice Planning and Evaluation, November, 1980.

In the case of the CDS project at Riverside School the services rendered by the CDS staff (both specialist and aide) were directed at several targets. First, a special effort was made to help develop and positively enhance a student's self concept (or that organization of attributes and qualities that the individual attributes to himself or herself).

Second, efforts were made to develop students' skills at interpersonal communication.

Third, an attempt was made to promote classroom activities which embraced the ideas and/or ideals of school and community citizenship.

Lastly, the project attempted to select certain "at risk" children in terms of classroom adjustment and developmental problems and worked on a one-to-one basis with their special needs. These children often had difficulty in school in terms of their adjustment to teacher and peer expectations.

In focusing on these targeted behaviors and individuals, the child development specialist and his aide worked with children in several settings and used a variety of different techniques. Much of the effort to reach all children involved classroom presentations and small group discussions along with the occasional use of selected movies and some pencil and paper work. Work with those children with individual educational plans (IEP's) progressed along somewhat the same lines, but with some exceptions. First, efforts were made with the IEP group to involve them in one-on-one counseling in various settings (particularly on the playground and in the CDS office in the school). Second, most of the effort made to work with the IEP students revolved around a very subtle attempt to work with these children in the context of classroom groups--especially the small discussion groups that the CDS person worked with when dealing with all children in a particular grade.

In terms of this last point, the child development specialist would work with a whole group of students in terms of general developmental needs and goals; but he would in the course of this activity work to make particular students in the group (those with IEP's) especially aware of the ideas being discussed.

If, for example, a child was having difficulty in school because of an inability to control his or her physical aggression when frustrated with peers and the CDS dealt with a small group lesson on alternatives to aggression which included that student he would make a special effort to make the lesson relevant to this student. Often a lesson plan would involve the students in role playing exercises. In the case of the overly aggressive student in our example, the CDS might pick this student for the role of a victim of aggression or that of an aggressor in a situation where one experiments with new alternatives to aggressive behaviors.

The important point to keep in mind is that the CDS staff reported that the work with IEP children depends on the ability of the CDS and the aide to counsel and teach these children important developmental skills and behavioral adaptations in a setting which did not make them conspicuous to other students or the teaching staff.²⁹

In terms of this last point it is worth noting that the distinguishing feature of the Riverside School CDS project as reported by the staff was a conscientious effort to work with IEP children in the total school setting and to add in very subtle ways the extra benefits of closer staff-pupil contact directed toward individual needs. The specialist and the aide made mental notes on students with IEP's so that wherever and whenever contact occurred these students would benefit most from the general affective education curriculum taught in the small group settings and would also have the advantage of a nurturing relationship with a concerned adult.

²⁹Unlike the traditional CDS project the pupils with IEP's were not directly referred by the classroom teacher for this individualized remediation plan; rather, the teacher ratings on the CARS instrument formed the basis for whether or not a student got an IEP. Teachers might refer a student for an IEP; but by prior agreement with the school administration and the CDS and OLEC staff members, only those with high CARS scores (over 67 was considered problematic) actually qualified for such an individualized plan. While it was possible that teachers might know of individual students with IEP's, it was assumed that they would not be aware of the added criteria of a high CARS score to qualify for such a plan. Since the CARS form on each student was completed by the classroom teacher; teacher ratings still determined IEP's for students, but the selection of IEP students was not generally known by the teachers.

This decision to base IEP selection on the CARS ratings was justified by the dictates of the research design and by the fact that a more objective, systematic selection of IEP students could occur during this the first year of a program at a time when the CDS component was being "phased in" to the school.

4. Empirical Examination of the Comparability of the Study Groups or Schools

Before we pursue in this report the results of our assessment of program impact, it is important that we at least briefly examine the issue of the pre-program comparability of the treatment and comparison groups designated in our nonequivalent control group design. Since initial or baseline data collection for this study began during the week of December 15, 1980, mid-December (1980) is the logical starting point for examining this issue.

As of Mid-December 1980, there were 102 second and third grade students enrolled at our treatment or CDS school (Riverside Elementary School) and 68 students enrolled in the same two grades at the comparison school (Eastwood Elementary School).

Since the geographic or residential mobility of these students affects the amount of exposure they may have to the services of the CDS program (at Riverside), we decided that one qualification should be imposed on these study groups. Because mid-December provided the Time One (T_1) or baseline period for pretest data collection and mid-May 1981 provided the Time Two (T_2) or follow-up period for posttest data collection on the CARS and AML scales, we needed to examine only those pupils who would have had an adequate amount of time to be exposed to CDS services. Therefore, we arbitrarily determined that treatment group students had to be present for more than fifty (50) school days between T_1 and T_2 to experience any real benefits of the CDS program. The same 50 day criteria applied at Eastwood where we were interested in determining the results of an absence of the program over the same time span.

Eliminating those with less than 51 days of school attendance between T_1 and T_2 leaves us with 81 students in our Riverside treatment group and 56 comparison subjects at Eastwood. This means that due to student moves out of the respective schools, we lost 20.6 percent (21 of 102) of the treatment group and 17.6 percent (12 of 68) of the comparison group students.

As a second qualification on our study group composition, we asked teachers to complete CARS and AML instruments on all students enrolled at T_1 and the same students at T_2 (the week of May 18, 1981) regardless of whether or not they were still enrolled as of this later date. In the case of those who had transferred out of these respective schools (but were enrolled for more than 50 days between T_1 and T_2), teachers were asked to complete the CARS and AML on these students by giving the required information current up to the time the student left school.

In comparing our study groups it is important that we determine how comparable each group is in terms of the criterion measures (i.e., pretest scores on the CARS and AML) and also in terms of those extraneous variables which might influence any relationship between exposure to program services and effect on client behavior(s).

In the case of our nonequivalent control group design the extraneous variables are of two types: (1) standard "face sheet" variables and (2) other variables known to influence child development levels and classroom adjustment. (See Appendix E for a copy of the project data form used to capture data on these extraneous variables.

a. Face Sheet Variables

Face sheet variables are those which are standard in the sense that most research includes these characteristics and generally lists them on the first page or the "face sheet" of a client data form. There are several face sheet variables in our study. They include the following:

- (1) Age (date of birth)
- (2) Sex
- (3) Grade in school
- (4) Socioeconomic status (father's occupation)
- (5) Place of birth
- (6) Race (Ethnicity)³⁰

³⁰The Roseburg Public School District does not list race or ethnic group of child as one of the pupil characteristics it records in school files. It only can be inferred from a child's school picture. This was done in a very casual way by the researcher.

Of these six (6) variables socioeconomic status (S.E.S.), race (ethnicity), sex, and grade in school would appear to be of the greatest importance in establishing the comparability of our study groups. Table 1 below provides information for comparing our study groups in terms of these standard face sheet variables.

From data presented in Table 1 it appears that the study groups are very comparable in terms of grade in school and race distribution; but less comparable in terms of social class and sex distributions. In terms of sex distribution, 42 percent of the Riverside School study group clients were male as opposed to 52 percent of the Eastwood group. This difference (while somewhat notable) is not statistically significant (at even the 10% level of significance). The difference between groups in terms of the percentage white collar is somewhat more notable and is statistically significant. Approximately 46 percent of the comparison (or Eastwood School) group come from families where the father had a white collar occupation. The comparable percentage for the treatment or Riverside group was 27.2 percent. The difference just reaches the .05 or 5 percent level of statistical significance.

Of the two factors, the difference in terms of socioeconomic status (measured by father's occupation) is greater and of more significance to our research here. Fortunately, the difference creates a more conservative test in that more Eastwood than Riverside students come out of "white collar" homes. If previous research results hold and we find that teachers overpredict classroom adjustment problems for lower income children and underpredict it for upper income children; then, it would be more difficult to show improvement in classroom adjustment for the CDS school (Riverside) than for the non-CDS school (Eastwood). Should the CDS group show a greater improvement it would mean a stronger (rather than a weaker) test of the programs effectiveness.

TABLE 1
Comparison of Evaluation Study Groups in Terms of
Standard Client Characteristics

Characteristic		Riverside School Experimental or Treatment Group (N = 81)		Eastwood School "Control" or Comparison Group (N = 56)	
		%	(N)	%	(N)
SEX	Female (n = 74)	58.0%	(47)	48.2%	(27)
	Male (n = 63)	42.0%	(34)	51.8%	(29)
		100.0%	(81)	100.0%	(56)
GRADE	2nd (n = 63)	46.9%	(38)	44.6%	(25)
	3rd (n = 74)	53.1%	(43)	55.4%	(31)
		100.0%	(81)	100.0%	(56)
S.E.S. ³¹	White Collar (n = 48)	27.2%	(22)	46.4%	(26)
	Blue Collar (n = 69)	54.3%	(44)	44.6%	(25)
	Unknown (n = 20)	18.5%	(15)	8.9%	(5)
		100.0%	(81)	99.9%	(56)
ETHNICITY	White	90.1%	(73)	92.9%	(52)
	Non-White ³²	3.7%	(3)	5.4%	(3)
	Unknown	6.2%	(5)	1.8%	(1)
		100.0%	(81)	100.1%	(56)

³¹Socioeconomic status was determined by using information on father's occupation from a pupil's school records and grouping occupations into white collar and blue collar. The white collar-blue collar division used here was based on the following U.S. Census Bureau occupational categories:

White Collar

high executives of large concerns
proprietors of large businesses
major professionals
business managers
proprietors of med. size businesses
lesser professionals
administrative personnel
owners of small businesses
minor professionals
clerical and sales workers
technicians
owners of little businesses

Blue Collar

skilled manual workers
machine operators
semi-skilled workers
unskilled workers
farmers
unspecified workers in farming
loggers
unspecified workers in logging

³²Ethnicity was determined by visual inspection of school pictures. For this analysis non-white was considered either Oriental, American Indian, or Mexican-American. There were no Negroes in either study group.

b. Other Variables

There are, of course, many other factors or variables (besides exposure to CDS services) which might make a difference in classroom adjustment behaviors of children recorded over time. Where these other extraneous variables or factors are thought to operate, differences between the treatment and comparison groups will be discussed in the remainder of this report.

At this point the major source of bias which must be controlled for is teacher bias. If the reader will recall, the measurement of program effects was based on adult perceptions of changes in children's behaviors. Use of such measures can involve great potential for substantial measurement error produced by prior expectancies of the impact of the program.³³

Teacher expectations could well have had a decided impact on assessments of improvement or decline in the classroom adjustment and behaviors of pupils in this study. Riverside teachers during the 1980-1981 school year easily could have felt that the new CDS program automatically should have had a positive effect on pupils' classroom adjustment levels. Knowing that the second and third grade students were being tested and knowing that the program is supposed to have a positive effect, the teachers could have inflated the rate of improvement by simply assuming that these students were better thereby biasing the results.

Similarly, since Eastwood does not have a CDS program and since the principal (a former school counselor) believes in the CDS program and would like one, the teachers might well be biased toward the view that without a program things automatically get worse in the classroom and that student behaviors deteriorate over time.

³³Noted also by John S. Wall, et al., Ibid., p. 28.

To guard against such bias, the researcher took several steps in this research to enhance the objectivity of the effort. First, teachers were asked to rely on their objective, professional judgments in diagnosing student problems using the CARS and AML scales. (See Appendices F and G for copies of the instructions presented to teachers for both the T_1 pretest in mid-December, 1980 and the T_2 posttest in mid-May, 1981). Second, teachers were not given explicit instructions for scoring the CARS and AML scales during the two administrations of the instruments. Third, the CARS and AML scales or instruments were picked up in December, 1980 and May, 1981 immediately after they were completed by the teacher. At all times during the 1980-1981 school year the teacher was deprived of any access to the CARS and AML forms on these students. Also, the selection of students for IEP's (individual educational plans) based on high or problematic range CARS scores was not revealed to teachers in the CDS school (Riverside).

In addition to these safeguards to insure the comparability of the research project study groups, interviews with the principals at both schools revealed that the educational program at Eastwood offered no counterpart to the Riverside CDS project. Eastwood had no school counselor during the 1980-1981 school year and no efforts were made to develop any in-school counseling program which would provide any of the services normally provided by a CDS program. While the Eastwood principal was a former school counsellor; his duties as a principal precluded his involvement in any CDS type of services.

Results of the Comparison Group Research Design Employed at Riverside and Eastwood Schools

Our nonequivalent control group design for evaluating the Riverside School CDS project in Roseburg is designed to permit several comparisons between study groups each involving a different dependent or criterion variable. We have organized our contrasts or comparisons between study groups according to which of several criterion variables we selected for analysis. Our discussion of results begins with the CARS instrument and comparisons between our study group over the T_1 to T_2 time interval.

1. CARS

Since classroom adjustment measured chiefly through use of the CARS instrument is our main dependent or criterion variable, it is with considerable interest that we should examine differences between study groups on this variable. Table 2 presents the relevant data here.

Two comparisons in this table are especially noteworthy. First, the CARS score pretest means for both treatment and comparison group schools are nearly identical with an average score of 70.926 for Riverside and 70.018 for Eastwood.³⁴ However, the posttest means for each group are vastly different. For the CDS or "treatment" group at Riverside, the mean CARS score dropped to 62.482 while the comparison group (non-CDS) at Eastwood increased their average to 82.018. Both of these changes were highly significant (at the .001 level or better) and given that they went in different directions; it appears that the CDS group showed remarkable improvement in the face of equally remarkable deterioration of the rated classroom adjustment of the non-CDS group. This statistically significant drop in the overall adjustment scores in one school coupled with an equally significant increase in the other school indicates the possibility of a positive CDS program effect on the teacher rated severity of social/emotional problems of students as they are reflected in maladjusted classroom behaviors.

³⁴In the 1975 study by Lorion, et al., reported earlier; the average CARS score for a normative sample of 240 "healthy" 2nd graders was 64.86 (with a standard deviation of 21.22) and for a normative sample of 202 "healthy" 3rd graders the average was 59.79 (with a standard deviation of 20.36).

TABLE 2

Results of Comparing Pretest (T_1) and Posttest (T_2) Means Using
the t-test for Repeated Measures to Determine Shifts in the Total CARS
Scores for the Two School Study Groups (1980-1981 School Year)

Study Group	Time Period	Number of Cases	Mean CARS Score	Standard Deviation	(Difference) Mean	T Value ³⁵	Degrees of Freedom	Two Tail Level of Significance
<u>TREATMENT</u>								
CDS School (Riverside)	Pretest (T_1)	81	70.926	21.257	-8.444	+4.21	80	.001
	Posttest (T_2)		62.482	18.112				
<u>COMPARISON</u>								
Non-CDS School (Eastwood)	Pretest (T_1)	56	70.018	22.062	+12.000	-3.45	55	.001
	Posttest (T_2)		82.018	33.400				

³⁵The Pearson correlation coefficients for the relationship between the pretest (T_1) and the posttest (T_2) total CARS scores were .590 for Riverside and .627 for Eastwood.

NOTE TO THE READER:

For those readers familiar with statistical tests of significance, we have reported two-tailed tests rather than one-tailed tests in our comparisons in that while it makes sense to hypothesize improvement in scores or measures for the CDS school; it is not realistic to hypothesize the opposite of improvement for the non-CDS school. If directionality of change is an issue for any of the pretest to post-test changes for the CDS school; the probability level for a one-tailed test result is, of course, half that reported for a two-tailed test.

While the initial pretest score similarity adds further support for this conclusion; the nature of the data and especially the variability of the CARS posttest scores at Eastwood³⁵ require that we subject these data to further analyses. One way to gain additional insight into these data is to generate the distribution of change (or gain) scores for each school. Basically, each student in each school has a pretest and a post-test score. The difference between the posttest and the pretest scores or the "difference score" gives us a measure of the individual's amount of gain or change over time. The total distribution of these difference scores provides further insight into the nature of the changes which have occurred within and between groups over time.

If we subtract the pretest score from the posttest score a "minus" (-) difference score indicates a reduction and improvement in the severity of classroom problems as reflected in the CARS adjustment score. A "positive" (+) difference score indicates a gain over time or increase in the severity of adjustment problems as rated by the teacher. For the Riverside CDS program study sample, the grouped frequency distribution of change scores is presented in Table 3 below.

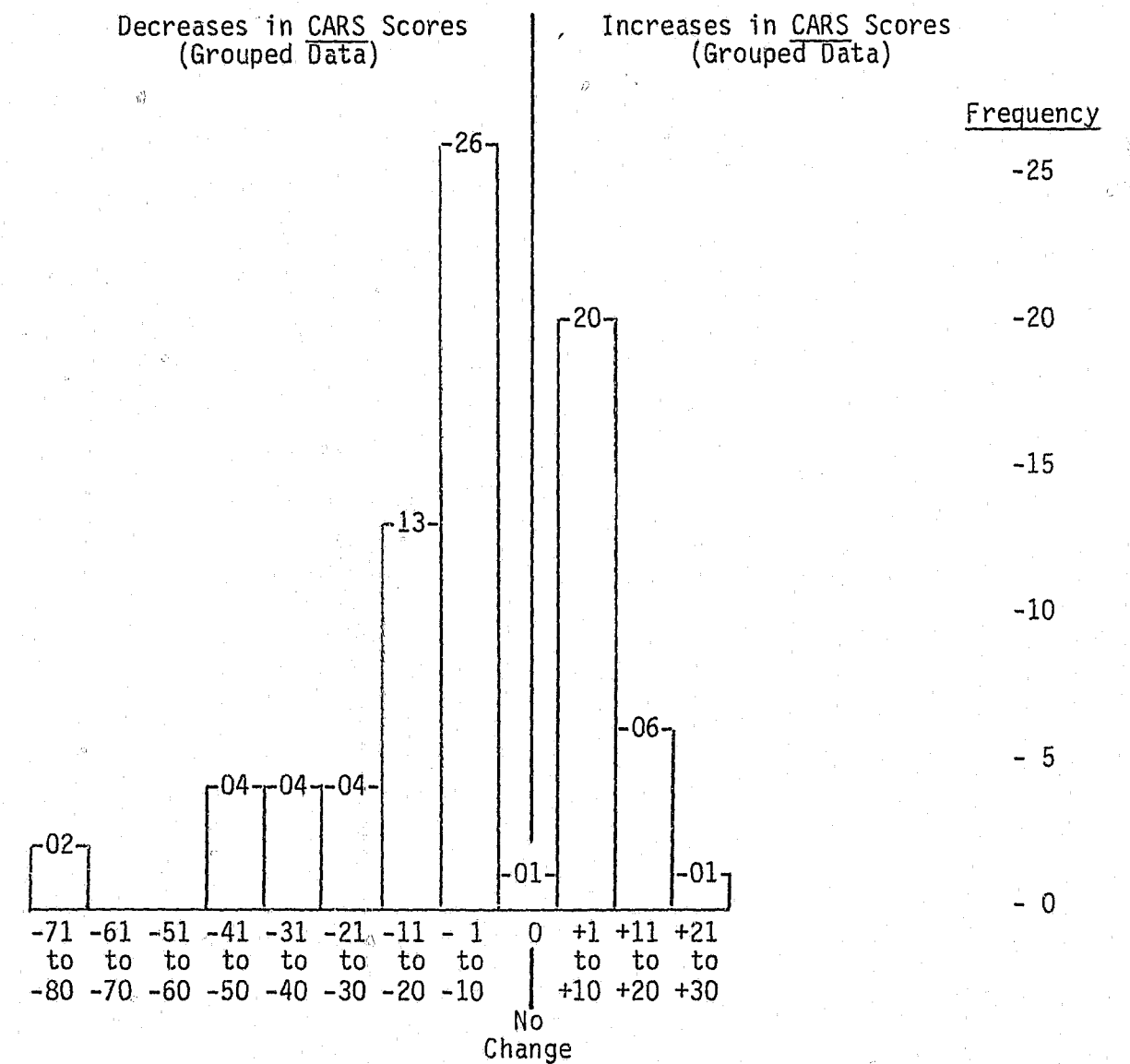
³⁵Note the rather large standard deviation of 33.400 for the scores here. Our concern is whether a few extreme scores (or changes) may have influenced our results.

TABLE 3
Frequency Distribution of CARS Change Scores
for Riverside School
(Grouped Data)

Class Interval	Frequency	Cumulative Frequency	Cumulative Percent
-71 to -80	2	2	2.5%
-61 to -70	0	2	2.5%
-51 to -60	0	2	2.5%
-41 to -50	4	6	7.4%
-31 to -40	4	10	12.3%
-21 to -30	4	14	17.3%
-11 to -20	13	27	33.3%
- 1 to -10	26	53	65.4%
0 (no change)	1	54	66.7%
+ 1 to +10	20	74	91.4%
+11 to +20	6	80	98.8%
+21 to +30	1	81	100.0%

Mean Difference Score = -8.444
Standard Deviation = 18.051
N = 81
Range = -79 to +24

FIGURE 2
Histogram of CARS Difference Scores³⁷
(RIVERSIDE)



³⁷The difference score is the difference between the posttest (T₂) and the pretest (T₁) CARS scores on each individual.

Average Difference Score = -8.444
Standard Deviation = 18.051
Range = -79 to +24

To enhance graphic presentation of the same data, Figure 2 following Table 3 presents this frequency distribution of change scores in the form of a histogram.

Inspection of Table 3 and Figure 2 reveals two significant patterns in the data. First, the sign and magnitude of the difference scores indicate that individual students have moved in both directions in terms of rated change in classroom adjustment. Those with "minus" scores have improved and those with "plus" scores have gone the other way. The most extreme scores (-79 and -72) were for improvement. Second, a more important feature of these data is the fact that the distribution is "skewed" to the left or has "negative" skewness. We would expect this outcome where the treatment has had a beneficial effect. This particular pattern of dispersion of difference scores is characteristic of what could be termed a "fair" experiment. More subjects (65.4%) improved than not, but the variance or spread of the changes is quite large and there are still many subjects who for some unknown reasons become worse--i.e., increase over time on the CARS score. In a "good" experiment the variance or "spread" of difference scores would be smaller and most of the change would be in the same direction. Also, a good experiment is "self-contained." It answers all questions asked. In contrast, fair and poor experiments require additional information to explain why some get "worse" and others "better" after treatment. Also, we need to explain how results are related to the pretest score in such experiments.

While our experiment here seems to indicate with some degree of conclusiveness that change is occurring in the direction predicted by the logic of the CDS program and that the program might be the cause of such change; we still need to address the issue of change in different directions for some individuals and the extreme variation in the magnitude of these changes. More will be said on this issue later in the report and in the conclusions section.

In contrast, the pattern of results at Eastwood are similar, but in an opposite direction to that found at Riverside. The pertinent data is contained in Table 4 below and in Figure 3.

TABLE 4
Frequency Distribution of CARS Change Scores
for Eastwood School
(Grouped Data)

Class Interval	Frequency	Cumulative Frequency	Cumulative Percent
-31 to -40	1	1	1.8%
-21 to -30	2	3	5.4%
-11 to -20	3	6	10.7%
- 1 to -10	12	18	32.1%
0 (no change)	4	22	39.3%
+ 1 to +10	15	37	66.1%
+11 to +20	4	41	73.2%
+21 to +30	4	45	80.4%
+31 to +40	1	46	82.1%
+41 to +50	5	51	91.1%
+51 to +60	1	52	92.9%
+61 to +70	3	55	98.2%
+71 to +80	0	55	98.2%
+81 to +90	0	55	98.2%
+91 to +100	1	56	100.0%

Mean Difference Score = 12.000 Range = -34 to +97
Standard Deviation = 26.044
N = 56

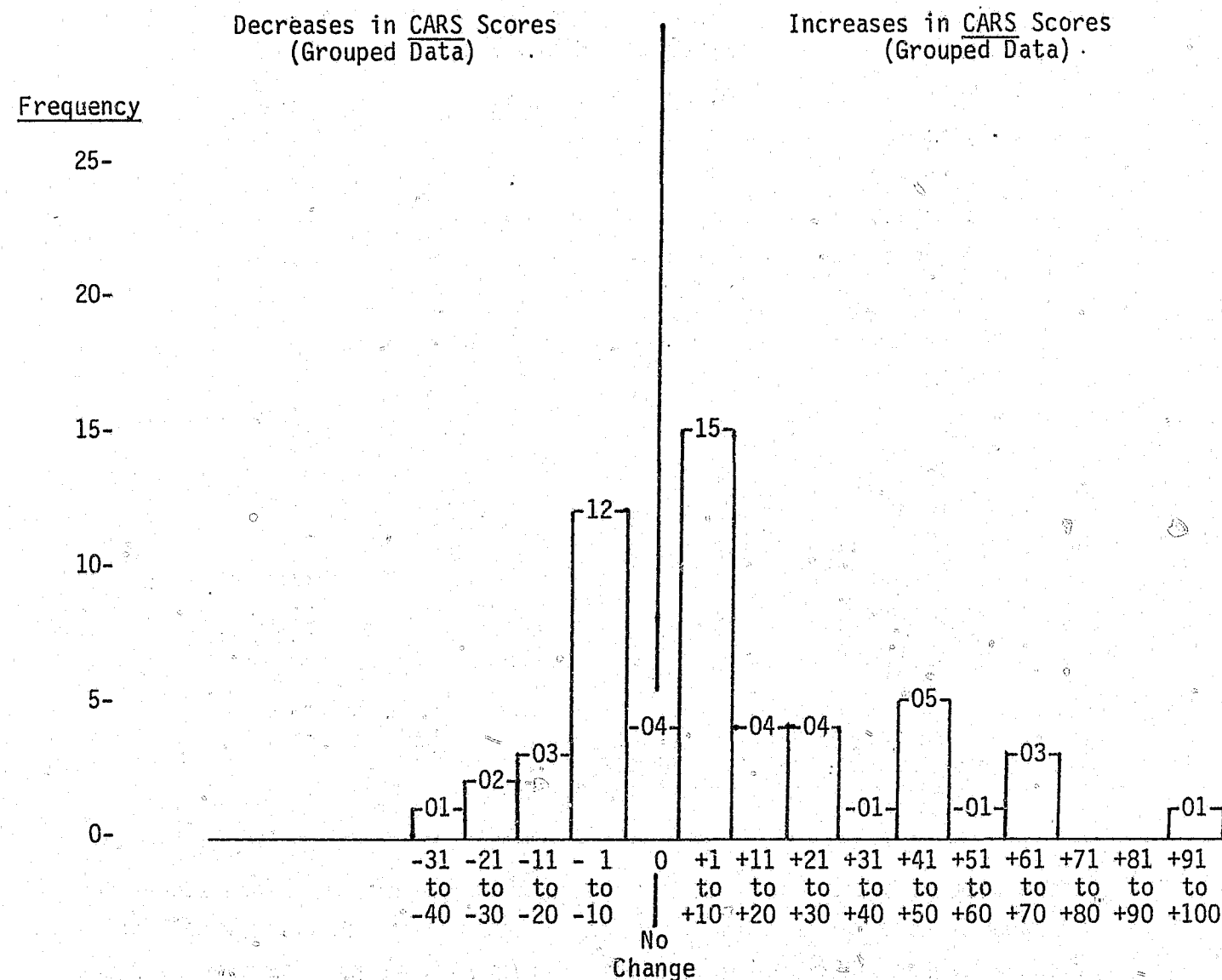
Inspection of Table 4 and the histogram of change or difference scores for Eastwood (the non-CDS school) indicates again large dispersion or variation in scores and a definite right or positive skewness to the distribution. In this school more students (60.7%) were rated as getting worse rather than better in terms of teacher ratings on classroom adjustment over time.

While we might expect Riverside students to improve somewhat in rated classroom adjustment; we find it notable that the Eastwood subjects went so far the other way in terms of decline in levels of classroom adjustment. Also, it is worth mentioning that the variation in difference

FIGURE 3

Histogram of CARS Difference Scores³⁸

(EASTWOOD)



³⁸ The difference score is the difference between the Posttest (T₂) and the Pretest (T₁) CARS scores on each individual.

Average Difference Score = +12.000
Standard Deviation = 26.044
Range = -34 to +97

scores at Eastwood is even greater than that at Riverside. The presence of these extreme scores and the large variation in scores makes it difficult to say that the absence of a CDS project at Eastwood "caused" this overall increase in the average CARS score and the inferred decline in classroom adjustment of study subjects.

It would appear that we need to examine additional data to determine how the project impacts classroom behavior. Also, some analysis of individual cases might be in order to determine the bases for such extreme change in either direction.

2. AML

Since the AML scale measures classroom adjustment not in terms of severity of problems but rather in terms of frequency of occurrence of adjustment problems using the same three behavioral dimensions as the CARS uses; it is important that we examine pretest to posttest shifts on the AML scale for each study group. Table 5 gives us the information we need here.

As in the case of the CARS, both study groups have comparable baseline or pretest measures. Theoretically, the AML can range from a high of 55 to a low of 11, with lower scores indicating less frequent occurrence of a pupil's problem behaviors. The AML pretest mean of 20.864 at Riverside and 20.071 at Eastwood are nearly equivalent and both average scores here are in the range of average AML scores found by Cowen, et al., for their normative sample of 2,640 kindergarten through 3rd grade students.³⁹

Shifts from the pretest to posttest for both schools on the AML indicate that from mid-December, 1980 to Mid-May, 1981 the teachers at both schools rated classroom adjustment and pupil problem behaviors as occurring slightly more frequently between T₁ and T₂. The pattern is identical for both schools and the increases in both schools are statistically significant at less than the .001 level. The data appear to suggest no

³⁹ See Cowen, et al., Ibid., p. 23. The mean AML scores for second graders in this sample was 24.08 and for third graders the mean was 25.39, both slightly higher than observed in Roseburg.

TABLE 5

Results of Comparing Pretest (T_1) and Posttest (T_2) Means Using
the t-test for Repeated Measures to Determine Shifts in the Total AML
Scores for the Two School Study Groups (1980-1981 School Year)

Study Group	Time Period	Number of Cases	Mean AML Score	Standard Deviation	(Difference) Mean	T Value ⁴⁰	Degrees of Freedom	Two Tail Level of Significance
<u>TREATMENT</u>								
CDS School (Riverside)	Pretest (T ₁)	81	20.864	6.786	+2.370	-3.84	80	.001
	Posttest (T ₂)		23.235	6.787				
<u>COMPARISON</u>								
Non-CDS School (Eastwood)	Pretest (T ₁)	56	20.071	7.684	+4.661	-5.33	55	.001
	Posttest (T ₂)		24.732	11.807				

⁴⁰The Pearson correlation coefficients for the relationship between the pretest (T_1) and the posttest (T_2) total AML scores were .665 for Riverside and .874 for Eastwood.

apparent advantage of the CDS project in reducing the frequency of classroom adjustment problems.

3. Other Measures

There are several other measures or variables we can use to compare our study group to determine possible impact of the CDS program at Riverside School. One measure is the number of problems listed for a student on the CARS instrument. If we recall the scoring system for CARS items, a "1" equals "not a problem" and "2" through "5" ranges from a "very mild problem" to a "very serious problem." Letting "2" through "5" scores equal a problem and "1" equal "not a problem," we can construct an index from the CARS score on each child which will give us a count of the number of items rated a problem for the child. This index can range in value from zero (0) or no problems listed to 41 or each CARS item marked as a problem (i.e., each item having 2, 3, 4, or 5 scores).

From data given in Table 6, it appears that the pretest means for each group are very nearly equal with an average of 19.667 problems for the Riverside group and 19.839 problems for the Eastwood group during the baseline period. At T_2 or follow-up, the posttests reveal a statistically significant decline in the average number of problems for the Riverside CDS group and a nearly significant increase in the same average for the Eastwood non-CDS group.

The above comparison tends to favor the CDS project group and adds somewhat to our speculation about the possible beneficial effects of a CDS project on the levels of pupil classroom adjustment.

In our earlier discussion of the subjective nature of teacher ratings of classroom adjustment and child development levels; we warned that any teacher bias in favor of the CDS project might distort the results of this research. As much as possible, then, we wanted to examine the results of teacher ratings in the context of situations where they might not be biased by an inclination toward favoring CDS students over non-CDS students. One measure of interest here is a single item on the CARS instrument; but which is not a part of the CARS score itself.

TABLE 6

Results of Comparing Pretest (T_1) and Posttest (T_2) Means Using
the t-test for Repeated Measures to Determine Shifts in the Average Number
of CARS Problems for the Two School Study Groups (1980-1981 School Year)

Study Group	Time Period	Average No.of CARS Problems	Mean CARS Score	Standard Deviation	(Difference) Mean	T Value	Degrees of Freedom	Two Tail Level of Significance
<u>TREATMENT</u>								
CDS School (Riverside)	Pretest (T ₁)	81	19.667	9.658	-5.642	+5.25	80	.001
	Posttest (T ₂)		14.025	9.218				
<u>COMPARISON</u>								
Non-CDS School (Eastwood)	Pretest (T ₁)	56	19.839	13.236	+3.39	-2.87	55	.006
	Posttest (T ₂)		23.232	14.887				

This item asks the teacher to check along a continuum or dimension where each individual child lies, taking into account the direction of the item. The item asks the teacher to rate the extent to which the child has significant school adjustment problems. The dimension or continuum is listed as follows:

1	2	3	4	5	6	7
(1)=Child has significant school adjustment problem				(7)=Child has no school adjustment problems		

Because it appears more logical to have a higher score identified with more significant school adjustment problems, we recoded the teacher's responses by subtracting each score from 80 after multiplying 10 times the score. For example, if a check was made midway between the 1 and the 2; we called this 1.5. Then we multiplied by 10 and got 15. Next we subtracted 15 from 80 and got 65 as a final score. Theoretically, our revised measure of a teacher's single item ratings of a child's school adjustment problems could range from 10 (child has no school adjustment problems) to 70 (child has significant school adjustment problems).

Table 7 allows us to examine shifts in this measure over time for both study groups. Looking at the table it appears that the average pretest index scores are nearly equal and that for both groups the rating increases over time--significantly so--for the comparison group.

While this difference does not favor the CDS group, it does not go against it either. Apparently, teachers see children in both groups as being on the low end of the continuum in terms of general school adjustment problems.

Summary of Findings, Conclusions, and Policy Implications

To this point the results of a nonequivalent control group design comparing Riverside School 2nd and 3rd graders with a CDS project against their non-CDS project counterparts in Eastwood School suggests that at least in terms of the severity of classroom adjustment problems and the number of such problems; the

TABLE 7

Results of Comparing Pretest (T_1) and Posttest (T_2) Means Using
the t-test for Repeated Measures to Determine Shifts in the Teacher's Ratings
on a Revised One Item Measure of a Child's School Adjustment
for the Two School Study Groups (1980-1981 School Year)

Study Group	Time Period	Number of Cases	School Adjustment Index Score	Standard Deviation	(Difference) Mean	T Value	Degrees of Freedom	Two Tail Level of Significance
<u>TREATMENT</u>								
CDS School (Riverside)	Pretest (T_1)	81	26.407	15.546	+3.395	-1.66	80	.100
	Posttest (T_2)		29.803	19.197				
<u>COMPARISON</u>								
Non-CDS School (Eastwood)	Pretest (T_1)	56	27.286	13.375	+4.946	-2.15	55	.036
	Posttest (T_2)		32.2321	19.969				

CDS project school shows better results. On two additional measures yielding comparisons between the CDS and the non-CDS schools, the results were less conclusive. One of these measures, teacher rating of degree of general school adjustment problems (using a single questionnaire item as an indicator), shows a statistically significant increase over time for the non-CDS school and a nearly significant increase for the CDS school. The results for the other measure (the AML), a measure of the frequency of classroom adjustment problems along three behavioral dimensions, indicates that for both study schools there was a statistically significant increase in average scores with the magnitude of the increase twice as great for the non-CDS school compared to the CDS school. It would appear, then, that for frequency of adjustment problems and for teacher rating of degree of general school adjustment problems the results suggest no significant impact of the CDS program--only a very slight advantage at best.

The basis for these results well may be that--for the short duration of these services--impact may be limited to a few problem areas and to reducing the teacher rated severity of these classroom adjustment problems.

These results are preliminary in the sense that we are reporting them here initially and must subject them to greater refinement in terms of additional qualifications outlining such issues as which subjects were most affected by CDS services and which showed no rated change or improvement in problem behaviors. Other issues meriting additional research include examination of the data for grade level differences and to determine the correlations between measures of exposure to various services and the degree of change between pre-test and posttest measures on the different rating scales and criterion variables. Also of special interest would be an examination of the effects on classroom adjustment of various combinations of services received by various clients. For example, it appears that a large part of the overall improvement in the rated classroom adjustment behaviors of the CDS school children as measured by the CARS instrument could be attributed to those students who benefited from both the general classroom curriculum services of the CDS project

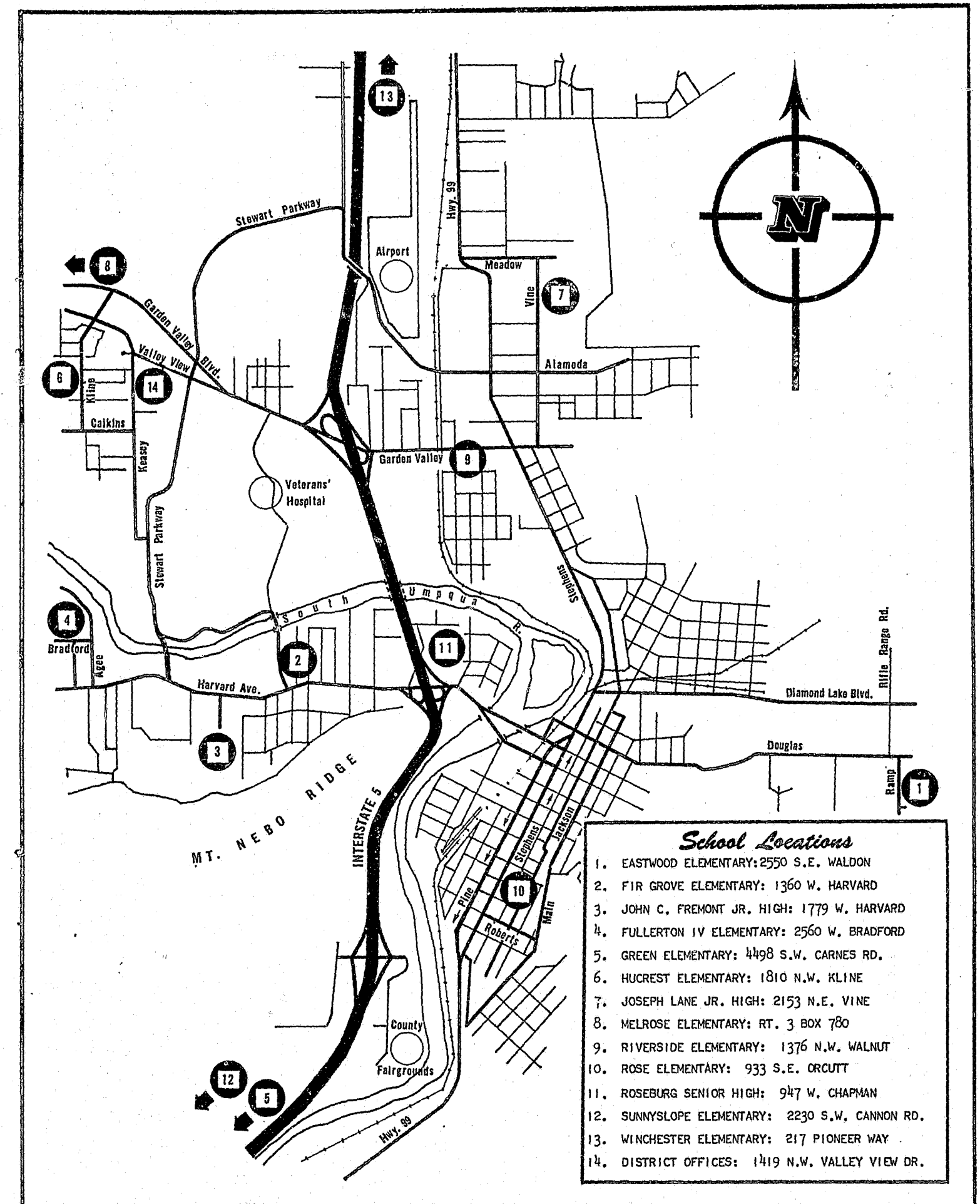
at Riverside School and from the special individual education program (IEP) services which occurred on a one-to-one basis or in small group settings.⁴⁰

Without additional qualification and refinement of our analysis here, it is difficult to elaborate on the policy implications which might surface. The reported research to this point certainly does document to some degree the potential of this project to impact students' short term classroom adjustment problems--including those problems which might in turn eventually generate later developmental problems and even delinquency in early adolescence. The finding that the positive impact of the program is concentrated particularly among those students requiring individual educational plans (special efforts in terms of meeting one-on-one or in small group settings the problems of developmental delay and classroom adjustment) certainly implies that the CDS program staff can concentrate some of their efforts on the problems of certain students with good result--especially results in terms of teacher ratings of classroom behavior and development.

⁴⁰At the CDS school (Riverside) the pretest score on the CARS instrument was used to determine which of the 81 students (with more than 50 days between pretest and posttest) would receive individual education plans (IEP's) and the special one-on-one attention of CDS staff. After consulting with the researcher, it was decided that students scoring over 67 on the CARS instrument would receive IEP's and those below 67 would not. (Two students scoring exactly 67 on the CARS pretest were omitted from this analysis of the data.) The results of comparing CARS pretest and posttest scores indicated that the 38 students at Riverside with IEP's had an average CARS score of 88.684 on the pretest and 73.316 on the posttest--a very significant reduction. In contrast, the remaining (41) CDS clients without IEP's had an average pretest score of 54.659 on the CARS and a posttest average of 52.171--an insignificant reduction. At Eastwood (or the non-CDS school) 27 students would have qualified for IEP's if the school had been involved in the CDS program. For these 27 students the shift in average CARS score between pretest and posttest went from 89.593 to 99.852--a significant increase. Omitting one case with a CARS pretest score of exactly 67 and looking at the 28 non-CDS school students with scores under 67, the pretest to posttest shift in average CARS scores went from 51.250 to 64.500--a significant increase.

These results clearly imply that the two types of CDS services at Riverside School may have in combination very significantly reduced the classroom adjustment problems of the primary level students receiving these services.

If this research has a major policy implication at this point in time it is that classroom adjustment and its causes and effects is a promising area for both efforts to research and program for child and adolescent problems, as well as, to research areas where teachers must focus more on their students' needs and their own abilities as teachers to meet these student needs. Hopefully, our future reports on this project can define more of the policy issues and provide answers to the problems which can be articulated here.



Child's Name _____ Date _____ Teacher's Name _____
Sex () M () F School _____

This is pupil's 1st () 2nd () time in this grade. (Teacher please check (✓) one)

AML BEHAVIOR RATING SCALE

PLEASE RATE THIS PUPIL'S BEHAVIOR
AS YOU HAVE OBSERVED AND EXPERIENCED
IT: THIS PUPIL -

	Never (1)	Seldom (2)	Moderately often (3)	Often (4)	Most or all of the time (5)
____ 1. Gets into fights or quarrels with other students	()	()	()	()	()
____ 2. Has to be coaxed or forced to work or play with other pupils	()	()	()	()	()
____ 3. Is restless	()	()	()	()	()
____ 4. Is unhappy or depressed	()	()	()	()	()
____ 5. Disrupts class discipline	()	()	()	()	()
____ 6. Becomes sick when faced with a difficult school problem or situation	()	()	()	()	()
____ 7. Is obstinate	()	()	()	()	()
____ 8. Feels hurt when criticized	()	()	()	()	()
____ 9. Is impulsive	()	()	()	()	()
____ 10. Is moody	()	()	()	()	()
____ 11. Has difficulty learning	()	()	()	()	()

Child Development Specialist Program
12/10/80
Form 1.1
Document #5406A

APPENDIX B

CLASSROOM ADJUSTMENT RATING SCALE (CARS)

The CARS consists of 41 behaviorally-oriented items describing school adjustment problems. The scale itself is a modification of Clarfield's (1974) original Teacher Referral Form (TRF). It provides in-depth information about the nature of a child's adjustment problems. In addition, the CARS permits the teacher to consider the behaviors in terms of the extent to which those given behaviors interfere with the child's ability to profit from his/her school experience.

As the teacher reviews each of the 41 items, he/she is asked to rate each item along the following dimension:

- 1 = Not a problem
- 2 = Very mild problem
- 3 = Moderate problem
- 4 = Serious problem
- 5 = Very serious problem

Since teachers are frequently aware of underlying family or situational pressures which relate to a child's behavior in the classrooms, Section II allows him/her to share such knowledge with the mental health professionals. The purpose of these items is to provide the CDS with background information about the child which would be helpful to know when contacting the family.

SCORING THE CARS: Four scale scores may be obtained by summing individual scores for items "belonging" to the particular factor (scale).

1. The "A" (acting-out) scale provides an index of the overall severity of a child's problems relative to aggressive, acting-out behavior. This factor score is given by adding items #1, 2, 3, 4, 5, 6, 7, 18 and 30 and subtracting item #9 (i.e., shy, timid). The theoretical range is 4-44.
2. The "M" (shy-anxious or moody) scale provides a measure of the overall severity of a child's undersocialized, withdrawn, dependent behavior. It is computed by summing items #8, 9, 10, 13, 14, 15, 16, 17, 18, 21, 22 and 23. The theoretical range is 12-60.
3. The "L" (learning) scale summarizes a child's learning difficulties, and is computed by adding items #24, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40 and 41. The theoretical range is 14-70.
4. The "T" (Total) score is a summary measure of the child's adjustment problems computed by summing across all 41 items which made up Section I of the scale. NOTE: Although some items are included in the scoring of two factors (e.g., item #30 is used to derive both the A and the L factor score) they are added only once when computing "T".

Classroom Adjustment Rating Scale

Child's Name _____ Date _____
School _____ Teacher _____ Grade _____

SECTION I: Please rate EVERY item on the following scale: Please check (✓) box with the appropriate number.

1 = NOT a problem

2 = very MILD problem

3 = MODERATE problem

4 = SERIOUS problem

5 = VERY SERIOUS problem

(1)

(2)

(3)

(4)

(5)

CHILD'S CLASSROOM BEHAVIOR:

1. Disruptive in class.....

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()

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()

()
2. Fidgety, hyperactive, can't stay in seat.....

()

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3. Talks out of turn, disturbs others while they are working.....

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4. Constantly seeks attention, "clowns around".....

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5. Overly aggressive to peers, (fights, is overbearing, belligerent).....

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6. Defiant, obstinate, stubborn.....

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7. Impulsive, is unable to delay.....

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8. Withdrawn.....

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9. Shy, timid.....

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10. Does not make friends.....

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11. Over conforms to rules.....

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12. Daydreams, is preoccupied, off in another world. (

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13. Unable to express feelings.....

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()
14. Anxious.....

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15. Worried, frightened, tense.....

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16. Depressed.....

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17. Cries easily, pouts, sulks.....

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18. Does not trust others.....

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19. Shows other signs of "nervousness".....

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- Specify: _____
20. Specific fears.....

()

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()

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()
- Specify: _____

OTHER BEHAVIORS:

21. Lacks self-confidence.....

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22. Overly sensitive to criticism.....

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23. Reacts poorly to disappointment.....

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24. Depends too much on others.....

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25. Pretends to be ill.....

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()
26. Other.....

()

()

()

()

()
- Specify: _____
27. Poor grooming or personal hygiene.....

()

()

()

()

()

CONTINUED on back

HOW TO USE THE SCORES:

The CARS is perhaps most productively employed as a diagnostic instrument to assist treatment planning. This is best done by examining closely the particular patterning of a child's scores across the 3 factor scales and total summary index. By so doing it is possible to identify children whose problems are primarily A, M, or L related as well as those better described as mixed "pure types."

The CARS will be administered on a pre-post schedule. Your IEA for a particular child will identify work in a play group or counseling group that will focus on A - Acting-out behaviors or M - Shy/anxious or moody behaviors or a combination of the A and M and L - Learning or motivating behaviors. You may specify behaviors on the CARS in our IEA if appropriate.

You will be working toward reducing the scores on the CARS. A lower score is indicative of improved adjustment. Mastery of the IEA objective is attained if the Total post-score is lower than the Total pre-score.

SOURCE: Carolyn Sheldon
Special Youth Services & CDS Programs
Portland Public Schools

CHILD'S ACADEMIC PERFORMANCE: 1 2 3 4 5

28. Underachieving (not working up to potential).... ()...()...()...()...

29. Poorly motivated to achieve..... ()...()...()...()...

30. Poor work habits..... ()...()...()...()...

31. Difficulty following directions..... ()...()...()...()...

32. Poor concentration, limited attention span..... ()...()...()...()...

33. Motor coordination problem..... ()...()...()...()...

34. Other..... ()...()...()...()...

Specify: _____

CHILD'S PERFORMANCE IN SPECIFIC ACADEMIC AREAS:

35. Reading..... ()...()...()...()...

36. Writing..... ()...()...()...()...

37. Language skills problems..... ()...()...()...()...

Specify: _____

38. Math..... ()...()...()...()...

39. Colors..... ()...()...()...()...

40. Numbers..... ()...()...()...()...

41. Concepts..... ()...()...()...()...

NOTE: After you have rated the child on the above 41 items go back and examine each item marked "1" (or "NOT a problem). If you feel that the child has some assets in this area, place a check (✓) in the blank next to each item number. For example, if you marked item 8 with a "1" and the child is "outgoing" and sociable (an asset) place a check (✓) in the box to the left of the item number.

SECTION II:

From your experience with this child, please check (✓) any of the following which you believe relate to the problem(s) you have reported:

- ____ Separation or divorce of parents
- ____ Illness or death of a family member
- ____ Lack of educational stimulation in the house
- ____ Economic difficulties
- ____ Under family pressure to succeed
- ____ Family difficulties
- ____ Other
- Specify: _____

SECTION III:

From your experience with this child, please check (✓) where he or she would lie on the following dimensions taking into account the direction of each item:

1 2 3 4 5 6 7

(1)=Know child well (7)=Barely know child

1 2 3 4 5 6 7

(1)=Child seems easy to like (7)=Child seems difficult to like

1 2 3 4 5 6 7

(1)=Child has significant school adjustment problems (7)=Child has no school adjustment problems

CDS EVALUATION STUDENT BACKGROUND DATA FORM

FIRST:

NAME: MIDDLE:

LAST:

AKA: _____

BACKGROUND INFORMATION

1 2 3 4 5 6 7 8 9 10 11

(Month) (Day) (Year) Place of Birth Sex Grade School

ADMISSION, TRANSFER, AND PROMOTION
CARD DATES (1980-1981 S.Y.)

12 13 14 15 16 17 18 19 20 21 22 23

Date 1st Entered This School Date Entered This School During 1980-1981 S.Y.

24 25 26 27 28 29 30 31 32 33 34 35

Date of Most Recent Withdrawal (1980-1981 S.Y.) Date Re-entering School (if returning during 1980-1981 S.Y.)

36 37

Scholarship Grade Next Semester

ATTENDANCE CARD DATA											
Quarter	Total Days Membership		Days Absent		Days Present		Tardies				
1	38	39	40	41	42	43	44	45			
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>			
2	46	47	48	49	50	51	52	53			
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>			
3	54	55	56	57	58	59	60	61			
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>			
4	62	63	64	65	66	67	68	69			
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>			

Columns 70-75 Reserved for Later Use

CARD AND I.D. INFORMATION

76 77 78 79 80

3 School I.D. No.

CONTINUED on back

EMERGENCY INFORMATION CARD DATA

1 Fa.Ph. (Bus./ Home)	2 Mo.Ph. (Bus./ Home)	3 Phys.	4 Hos.	5 No. of Children in Family	6 Sch. Ins.	7 Family Ins.
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STUDENT PROGRESS REPORT DATA

Area of Instruction	GRADE BY QUARTER OF PERFORMANCE			
	1st	2nd	3rd	4th
Reading	8 <input type="checkbox"/>	9 <input type="checkbox"/>	10 <input type="checkbox"/>	11 <input type="checkbox"/>
English	12 <input type="checkbox"/>	13 <input type="checkbox"/>	14 <input type="checkbox"/>	15 <input type="checkbox"/>
Spelling	16 <input type="checkbox"/>	17 <input type="checkbox"/>	18 <input type="checkbox"/>	19 <input type="checkbox"/>
Penmanship	20 <input type="checkbox"/>	21 <input type="checkbox"/>	22 <input type="checkbox"/>	23 <input type="checkbox"/>
Mathematics	24 <input type="checkbox"/>	25 <input type="checkbox"/>	26 <input type="checkbox"/>	27 <input type="checkbox"/>
Social Studies	28 <input type="checkbox"/>	29 <input type="checkbox"/>	30 <input type="checkbox"/>	31 <input type="checkbox"/>
Science	32 <input type="checkbox"/>	33 <input type="checkbox"/>	34 <input type="checkbox"/>	35 <input type="checkbox"/>
Physical Education	36 <input type="checkbox"/>	37 <input type="checkbox"/>	38 <input type="checkbox"/>	39 <input type="checkbox"/>
Health	40 <input type="checkbox"/>	41 <input type="checkbox"/>	42 <input type="checkbox"/>	43 <input type="checkbox"/>
Music	44 <input type="checkbox"/>	45 <input type="checkbox"/>	46 <input type="checkbox"/>	47 <input type="checkbox"/>
Art	48 <input type="checkbox"/>	49 <input type="checkbox"/>	50 <input type="checkbox"/>	51 <input type="checkbox"/>
Band	52 <input type="checkbox"/>	53 <input type="checkbox"/>	54 <input type="checkbox"/>	55 <input type="checkbox"/>
Work and Study Habits				
Listens (directions)	56 <input type="checkbox"/>	57 <input type="checkbox"/>	58 <input type="checkbox"/>	59 <input type="checkbox"/>
Good Use of Time/Materials	60 <input type="checkbox"/>	61 <input type="checkbox"/>	62 <input type="checkbox"/>	63 <input type="checkbox"/>
Completes Work on Time	64 <input type="checkbox"/>	65 <input type="checkbox"/>	66 <input type="checkbox"/>	67 <input type="checkbox"/>
Neat in Written Work	68 <input type="checkbox"/>	69 <input type="checkbox"/>	70 <input type="checkbox"/>	71 <input type="checkbox"/>
Works Independently	72 <input type="checkbox"/>	73 <input type="checkbox"/>	74 <input type="checkbox"/>	75 <input type="checkbox"/>

CARD AND I.D. INFORMATION

76 4	77	78	79	80
Card No.	School	I.D. No.		



STATE OF OREGON

APPENDIX F
INTEROFFICE MEMO

TO: Eastwood and Riverside Teachers

DATE: December 12, 1980

FROM: Scott Mutchie, Roseburg Public Schools
Dr. Claude Morgan, Oregon Department of Education
Dr. Jim Heuser, Research and Evaluation Unit, OLEC

SUBJECT: Assessment of child development needs of second and third grade pupils

As part of a research effort to evaluate the need for and value of certain activities of the Child Development Specialist (CDS) program in Roseburg, we are asking 2nd and 3rd grade teachers in two Roseburg elementary schools (Riverside and Eastwood) to assist us in collecting some basic information on the developmental needs and assets of students. We estimate that the information needed will require about two (2) hours of your time (about 4-5 minutes per student) during the week of December 15th. While we hope this will not be an inconvenience and apologize for any created, we feel that this information is absolutely essential at this time.

Our dedication to this interagency research effort is based on a number of goals shared in common. First, we believe that a program such as the Child Development Specialist effort should direct its effort toward two interrelated goals - the early detection and prevention of school adjustment problems. The first of these goals - early detection - follows from the belief that school adjustment problems (and the underlying child development needs) can be reliably and efficiently identified early in a child's school career. The need to do so evolves from the second goal. If left without intervention, early difficulties may lead to later more serious adjustment problems. More importantly, we believe that a program such as CDS, which attempts to intervene in young people's lives (hopefully for their benefit), ought to be subject to rigorous testing and analysis. We feel that we need to know it we are indeed identifying properly those children who need the assistance of the CDS program and if that assistance is really helping those children.

It is at this point that you as teachers become important actors in efforts to assess the activities and benefits of parts of this program and to make decisions about further efforts to shape and indeed even fund the future program. Since you as teachers have day-to-day contact with children and can experience first hand the joys and frustrations of working with their problems and assets, we need to rely on your objective, professional judgments for diagnosing some of your students problems and assets and rating changes over time in these problems and assets.

The classroom adjustment screening instruments described below are intended to provide the teacher with a systematic and efficient means of communicating: (a) the specific areas of concern she or he has about a child's classroom behavior, and (b) the specific areas of strength or competency observed in that same child. These instruments (known as the AML and the CARS) allow the teacher to evaluate a child's difficulties in three areas: (1) learning difficulties (e.g., concentration, attention, reading); (2) problems of withdrawal, dependency, and undersocialization; and (3) disruptiveness, aggression, and hyperactivity. The CARS instrument has been adapted to allow the teacher to indicate areas where the child may have some unique strengths or assets.

(CONTINUED ON BACK)

We would like you to complete each of the two instruments (the AML and the CARS) on each student and return them to Mr. Scott Mutchie on or before Friday, December 19th.

AML

The AML is an 11-item quick screening device for teachers to identify early school maladjustment. Please complete the yellow AML form for each student in your class. The scale calls for you to indicate how often you have observed certain behaviors in the classroom. To help you interpret the five rating points, brief descriptions are provided for each:

- (1) Never - You have literally never observed this behavior in this child
- (2) Seldom - You have observed this behavior once or twice in the past three (3) months.
- (3) Moderate frequency - You have seen this behavior more often than once a month but less often than once a week.
- (4) Often - You have seen the behavior more often than once a week but less often than daily.
- (5) Most or all of the time - You have seen the behavior with great frequency, averaging once a day or more often.

Two things should be kept in mind while completing the AML: (a) Work rapidly and don't fret too much about making fine discriminations; (b) Please be sure that your ratings realistically reflect problems as you perceive them.

CARS

The core of the CARS instrument consists of 41 behaviorally-oriented items describing school adjustment problems. The CARS permits the teacher to consider these behaviors in terms of the extent to which they interfere with the child's ability to profit from his or her school experience. The CARS form also provides detailed information about the severity of a child's adjustment problems. Please complete the two-sided white CARS form on each student in your class. As you review each of the 41 items in Section I of the form, rate each item along the following dimension:

- 1 = not a problem
- 2 = very mild problem
- 3 = moderate problem
- 4 = serious problem
- 5 = very serious problem

Section II of the CARS form allows you to share any knowledge you may have with the CDS project and the researchers which relates to the child's behavior in the classroom -- such as family and situational pressures and other background information. Please remember that the "note" on page 2 asks you to go back through the 41 items in Section I marked "1" and indicate if the child might actually have an asset or assets in this area.

Please complete every item on every student's form as objectively as you can. Mr. Mutchie or someone from his office will pick up the forms as you complete them during the week of December 19th. They will remain in his office where he will employ procedures to guarantee confidentiality within the CDS project. THANK YOU!



STATE OF OREGON

APPENDIX G

INTEROFFICE MEMO

TO: Eastwood and Riverside Teachers _____ DATE: May 14, 1981

FROM: Mr. Scott Mutchie, Roseburg Public Schools
Dr. Claude Morgan, Oregon Department of Education
Dr. Jim Heuser, Research and Evaluation Unit, OLEC

SUBJECT: May 1981 assessment of your students' child development/classroom adjustment needs and assets

The purpose of this memo is to once again ask for your assistance in meeting the school district's obligation in helping to complete the current evaluation of the Roseburg Child Development Specialist (CDS) program.

As you will recall from last December (1980), you participated in our inter-agency effort to evaluate certain activities of the CDS program in the district. At that time you completed two short classroom adjustment screening instruments on students in your class. These completed instruments with your objective ratings provided one basis for communicating specific areas of concern about each of your student's classroom behaviors and your observations about their individual assets. These instruments (known as the AML and the CARS) allowed you to evaluate a child's difficulties in three areas: (1) learning difficulties (e.g., concentration, attention, reading, etc.); (2) problems of withdrawal, dependency, and undersocialization; and (3) disruptiveness, aggression, and hyperactivity. The CARS instrument was adapted to allow you to indicate areas where the child may have some unique strengths or assets.

We greatly appreciated your efforts at that time to provide us with completed AML and CARS forms on each of your students! These data and the data we are requesting this month are essential to our efforts to provide an objective and professional evaluation of the CDS program.

Because of your day-to-day contact with your students and because of your professional judgments for diagnosing their problems and detecting their assets; we are requesting your assistance at this time to bring about a successful conclusion to this important research effort.

We would like you to complete a second AML and a second CARS form on each student having completed forms in December. Hopefully, we have improved our data collection process enough to reduce some of the time required for this effort. To help you we have filled out the name, sex, and grade/school information on each student for whom we need a second CARS and AML form next week. We are asking that you complete both forms on each student and return them to Mr. Mutchie on or before Friday, May 22th. These data will allow us to profile the classroom behaviors of students a second time and to make comparisons between time periods and between the CDS school (Riverside) and the school without a CDS (Eastwood).

Please be sure that we have correctly identified the child's sex and whether or not he or she had repeated this class (both items are at the top of the AML form). If a child transferred to another school or is no longer in your class, please indicate the date or approximate date he/she left. Also, please fill out the forms on such a student as best you can reflecting how you would have answered these questions as of the date they left. Please complete every item on each form as objectively as you can. We have included on the back page of this memo a description of the AML and CARS forms. A review of this page should help you to do this task -- hopefully in perhaps an hour or two of your time. Again, we are most appreciative and grateful for your assistance.

(Continued on back)

If you have specific questions about how to fill out the forms or general questions about the research, please phone Mr. Mutchie at 440-4011 or call Dr. Heuser toll free at 800-452-7813 and ask for 378-4346. We will be happy to provide you with a summary of the evaluation research when it is completed later this summer.

END