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**The use of template matching as a strategy for assessment and
intervention of preschool students with handicaps**

Ager, Christina Le, Ph.D.

Lehigh University, 1992

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Ann Arbor, MI 48106

The Use of Template Matching as a Strategy
for Assessment and Intervention of
Preschool Students with Handicaps

by

Christina Le Ager

A Dissertation

Presented to the Graduate Committee

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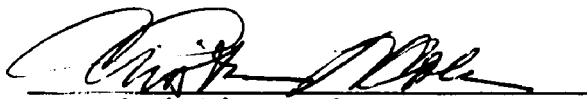
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The Use of Template Matching as a Strategy
for Assessment and Intervention
of Preschool Students with Handicaps

Christina Ager

This study examined the viability of using template matching to facilitate the transition of preschoolers with handicaps into regular education kindergarten. A template matching strategy was used to delineate differences between instructional environments in sending preschool classes and receiving kindergartens. Preschool students with handicaps who would be transitioning to kindergarten the following year participated in three groups - Intervention, Assessment Only, and Control.

Direct observations of preschool and kindergarten classes were conducted using two eco-behavioral codes, ESCAPE and ACCESS. Major differences included the amount of time spent in independent work and large group instruction. Differences were also found for a number of variables including activity, location, materials, and initiator. In the Intervention class, interventions based on these templates were designed collaboratively with preschool staff and implemented during spring

of the preschool year. In the Assessment Only class, templates were developed but no instructional changes were implemented. Data from kindergarten classes into which the preschool students would be placed were compared to data obtained in each sending preschool class.

The intervention was effective in more closely aligning the preschool ecological data with kindergarten templates. At follow-up, during their kindergarten year, direct observation showed students involved in the intervention exhibited less competing behaviors and received fewer individual prompts during independent seat work. In addition, differences in referrals to special education were found between groups. During the first half of their kindergarten year, two children from the Assessment Only group were placed in special education while none of the children from the Intervention group were. Data from teacher ratings of student behaviors showed no consistent differences between groups.

This study demonstrated the effectiveness of template matching as a strategy for identifying the

expectations for levels of behavioral responding required in future kindergarten settings. In addition, the effectiveness of an intervention based on the template matching assessment seemed to facilitate successful transitions from preschool to kindergarten. Future research needs to address less time-intensive methods of template matching to increase practical significance, as well as examining a number of unresolved psychometric issues concerning template matching as an assessment device.

The Use of Template Matching as a Strategy
for Assessment and Intervention of
Preschool Students with Handicaps

The general goal of almost all preschool programs for students who have handicaps or who are at-risk for school failure is to prepare these students to better meet the expectations of regular education kindergarten (Conn-Powers, Ross-Allen, & Holburn, 1990; Vincent, Salisbury, Walter, Brown, Gruenewald, & Powers, 1980; Walter & Vincent, 1982). For children with handicaps the transitional process from preschool to kindergarten is critical for facilitating success within the regular education environment (Carta, Atwater, Schwartz, & Miller, 1990; Conn-Powers, et al., 1990; Fowler, 1980, 1982, 1988; Huntinger, 1981; Sainato, 1990). The importance of planning for the transition from preschool to kindergarten, especially for students with special needs, has been frequently stated in the literature (Diamond, Spiegel-McGill, & Hanrahan, 1988; Fowler, 1980, 1982, 1988; Polloway, 1987; Rule, Fiechtl, & Innocenti, 1990). However, the frequency with which specific, detailed, transition plans are actually

carried out has been questioned (Huntinger, 1981; Fowler, 1988).

Facilitating Transitions to Kindergarten

Methods for facilitating preschool to kindergarten transitions are needed. These methods would provide ways to develop transition plans based on quantitative assessments of both environmental expectations and average student performance in the mainstream. In this way, teachers and parents can be more sure that preschool programs will provide experiences which will facilitate success in regular education kindergartens. In addition, there is a growing need for the development and verification of preventative assessment/intervention models for preschool children with handicaps (Carta et al., 1990; Carta, Sainato, & Greenwood, 1988; Polloway, 1987; Sainato, 1990).

To increase the likelihood of placement and maintenance in the least restrictive environment, the instructional emphasis in preschool must be on functional skills relevant to kindergarten success (Beckoff & Bender, 1989; Carta et al., 1988; Cooper & Speece, 1990; McCormick & Kawate, 1982; Rosenkoetter & Fowler, 1986; Rule, Fiechtl, & Innocenti, 1990;

Polloway, 1987). A number of clusters of behaviors have previously been defined as being critical for successful functioning in kindergarten classes including behavior during group instruction, transitions, and independent seat work (Carta, Sainato, & Greenwood, 1988; Sainato, 1990; Vincent et al., 1980). Recently, Cooper and Speece (1990), in an investigation focused on maintaining children at-risk for school failure in regular education from first to fourth grades, found that off-task behaviors during independent seatwork were significantly associated with subsequent identification for special educational placement.

Environmental demands often differ across early intervention classrooms (Carta, et al., 1988). For example, these investigators found that the amount of time spent in preacademics across different preschool classrooms ranged from 1.8% to 19.6% of the school day. Consequently, developing preschool programming which effectively prepares children for regular education instruction requires the assessment of the educational environments available for students with special needs at the kindergarten and primary grade levels (Carta et

al., 1988). This assessment of the instructional arrangements and behavioral requirements of the regular education environment will then allow for subsequent modification of instructional content in preschool (Carta, et al., 1990; Fowler, 1980, 1982, 1988; Sainato, 1990).

Assessment Methods

Various methods have been used to target behaviors or skills important for successful transitions from preschool to kindergarten. These include classroom checklists (Fowler, 1980, 1982; Sainato & Lyon, 1989), teacher questionnaires (Beckoff & Bender, 1989; Fowler, 1982; Hains, Fowler, Schwartz, Kottwitz, & Rosenkoetter, 1989), and direct observation (Carta et al., 1988; Fowler, 1980; Hoier, McConnell, & Pallay, 1987; Rosenkoetter & Fowler, 1986; Rule, Fiechtl, & Innocenti, 1990).

In general, the use of teacher ratings and checklists for identifying critical skills in kindergarten have resulted in findings which point to the importance of work-related behaviors such as rule following, behaviors during independent seat work, and

direction following as opposed to interpersonal behaviors (Cooper & Farran, 1988; Hains et al., 1989; Vincent et al., 1980; Walter & Vincent, 1982). However, problems in using teacher-reported information for the identification of skills and student skill levels have been found. First, teacher reports of behavior do not always match actual performance. For example, Walter and Vincent (1982) found that teacher rankings of the interaction skills of preschoolers with handicaps matched direct observation data only 28 to 35% of the time while either over or underestimating actual performance the other 65 to 72%. Secondly, preschool and kindergarten teachers do not necessarily identify the same skills as being critical for school success (Beckoff & Bender, 1989; Hains, et al., 1989). Given the failure of teacher judgement to match what actually occurs in the classroom it seems that direct observation may provide a more accurate picture of classroom ecologies. Thus, direct observation may be a critical step in identifying both student behavioral variables which are important for success in the kindergarten environment and ecological variables which impact on student performance within both the preschool and kindergarten environments.

Ecological Assessment

As an alternative to teacher-reported measures of skills critical for kindergarten success, direct observation measures have been investigated. Ecobehavioral assessment and analysis, developed to provide simultaneous measurement of both the static and dynamic aspects of instructional environments and related child behaviors, has been used to examine early childhood programs (Carta et al., 1988). Ecobehavioral analysis has been investigated in terms of three functions. First, it has been used to explain changes in behavior in terms of immediate (i.e. teacher behavior) or distal (scheduling) environmental events (Carta, et al., 1988). Secondly, it has been used in the development and verification of effective instructional practices such as class-wide peer tutoring (Carta, et al., 1988; Greenwood, Carta, & Atwater, 1991; Odom, Peterson, McConnell, & Ostrosky, 1990). Thirdly, this type of analysis has proven beneficial in enabling quantitative comparisons of differences in independent variables, such as the level of teacher questioning or prompting, between baseline and experimental phases

(Greenwood, Carta, & Atwater, 1991).

Two behavioral observation codes have been developed to assess ecological factors within early childhood education settings. The Ecobehavioral System for Complex Assessment of Preschool Environments (ESCAPE) (Carta, Greenwood, & Atwater, 1985) developed at Juniper Gardens Children's Project has been used in a pilot study to assess four preschool programs that differed in program philosophy and types of children served (Carta et al., 1988). A total of 87 days of data were collected on 12 preschool students. Data were aggregated to present descriptions of typical preschool days. In addition, analysis of temporal correlations between ecological and behavioral variables were determined. Results indicated that active engagement was much more likely when students were involved in self-care, play, and fine-motor activities than during story, transition, or gross-motor activities. These data were then used to restructure the instructional environments to promote more active engagement during subsequent activities.

ACCESS, the Assessment Code/Checklist for Evaluating Survival Skills (Atwater, Carta, & Schwartz,

1989), was developed to more thoroughly investigate specific behaviors identified as critical for success in kindergarten. Skills involved in group instruction, independent seatwork, and within-classroom transitions are observed with respect to student behavior, teacher prompts and feedback, student responses to teacher prompts, and environmental arrangements. Carta, et al., (1990) found that levels of teacher prompts and feedback during independent seatwork were much lower in kindergarten than in preschool settings for at-risk students. These low levels in kindergarten contributed to lower levels of engagement during independent work-tasks for two at-risk students upon entering kindergarten.

How much time students spend in various activities (e.g. seatwork, playtime, transition, group instruction), who initiates the activities, the materials used, grouping arrangements, and the location of students are all critical ecological variables which have been identified as influencing student behavior and performance (Carta et al., 1988; Carta, Greenwood, & Atwater, 1986; Greenwood, Delquadri, & Hall, 1984). Teacher behaviors and teacher-student interactional

patterns such as the frequency and type of teacher prompting and feedback have also been identified as important determiners of student success (Atwater, Carta, & Schwartz, 1989).

To increase the likelihood of students making successful transitions from one environment to the next it is necessary to assess and match student behavior and environmental variables in the present setting with those identified in the future targeted settings (Thurlow et al., 1988). Comparing the behavioral and instructional requirements of the current preschool program with the kindergarten classes the children are going to attend will result in the identification of similarities and differences between the programs. Knowledge of the differences can assist teachers in restructuring the preschool class environment to more closely approximate the demands of the kindergarten environment. These modifications will increase the probability of success for these students. In this way performance generalization can be built into the intervention program increasing the likelihood that skills learned in preschool will be displayed in the kindergarten setting the following year.

Template Matching

One method of conducting systematic analysis of student behaviors and environmental variables across settings which has begun receiving attention is template matching (Cone, 1987; Hoier, McConnell, & Pallay, 1987; Walker & Rankin, 1983). Originally, the template matching methodology was designed to test the generalizability of laboratory derived personality descriptions (Bem & Lord, 1979). Recently, template matching has been used to attempt to quantify both the behavioral responses of successful individuals and the expectations of future environments (Cone, Bourland, & Wood-Shuman 1986; Cone, 1987; Hoier, et al., 1987). Barnett and Macmann (1992) describe the methodology as one in which the discrepancies between client performance and the performance of successful individuals are used to (a) predict the likelihood of success in particular settings and (b) identify targets for intervention which would facilitate transitioning to less restrictive settings.

Template matching is a method of empirically developing a behavioral profile of an educational

environment. A number of methods have been suggested and employed to generate these profiles including use of staff interviews (Cone, et al., 1986), adaptive behavior instruments (Cone, 1987), inventories and checklists (Walker & Rankin, 1983), and direct observation (Hoier, et al., 1987).

The template matching methodology has been investigated in school settings by a few researchers. McConnell et al. (1984) used direct observation to verify two general classes of behavior which were reported to differentiate students identified as either successful or unsuccessful by teacher judgement. Hoier et al. (1987) used template matching to plan the educational transitions of six preschool students with behavior disorders into kindergarten or first grade. Based on findings from direct observation of teacher behavior the authors recommended a readiness model which would attempt to identify placements in which the target child's current performance approximates the normative level of student behavior in the receiving classroom. Additionally, they suggested that matching teacher behavior in the current setting to the future setting would maximize the child's fit into the environment and

enable them to respond to the contingencies already available in the future placement.

The use of template matching as a nomothetic assessment tool is currently being evaluated (Carta, Greenwood, & Atwater, in progress). These researchers are using template matching to develop targets for group intervention as a predictor of the level of generalization expected after transitioning groups of preschool children with special needs to kindergarten.

Applications of template matching in school settings have generally been conducted by identifying two or more children to be observed from classrooms into which the target children may be placed. Children identified for observation are called index children. Based on the data from these observations the mean and range of the values of critical variables are graphed. This forms a template or graphic display of the expectations of the next educational environment. On top of this template a second template is graphed which represents the observational data of a specific student or number of students in their current environment. This allows for an analysis of the differences between

the current behavior of the targeted children or the expectations of the current environment and the observed requirements of the child's future educational environment.

Although detailed descriptions and discussions on the use of template matching to design interventions have been presented in the literature (Cone, et al., 1986, Cone, 1987), a number of questions remain unanswered. Barnett and Macmann (1992) stated that while template matching may prove to be a valuable methodology, its treatment utility has not yet been demonstrated. Which behaviors are primary for success and their optimal levels of performance have not yet been established for specific environments. In addition, these authors note that the implied focus of intervention has so far, been primarily child-centered. They suggest that modifying environments based on template matching is equally as valid an approach. Finally, they question whether templates derived by assessing caregiver tolerance are equivalent to those developed by examining successful performance within the setting.

The Effectiveness of Preschool Interventions

Little research has evaluated the effects of assessment and intervention models on early childhood school-based transitions (Carta et al., in progress; Hoier et al., 1987). However, a few studies have examined the effectiveness of preschool environments in preparing students with handicaps for mainstream elementary education.

Karnes, Schwedel, Lewis, Ratts, and Esry (1981) conducted a cross-sectional follow-up study of 86 children with handicaps who had been enrolled in the Joint Early Education Program for the Handicapped (JEEPH) between the years 1973-1979. Students were evaluated for follow-up in their current class placement which ranged from kindergarten to fifth grade. Results indicated that only 20% were currently placed in special education programs, 8% of whom had been placed directly in special education from preschool, and only 15% had ever been retained. Teacher ratings indicated the students were performing adequately with ratings on social dimensions being slightly higher than on academic dimensions. A concurrent parent survey resulted in 93% of the parents indicating their children would not have

been as successful without participation in the preschool program. Although these results seemed promising the use of only a subset of 293 of the total students enrolled in JEEPH during those years limits generalizability. Students who had left the four major districts surrounding the program were not included.

Two researchers have successfully targeted and intervened on specific skills necessary for success in mainstreamed kindergarten classes. Sainato et al., (1987) successfully targeted increasing the academic responding of preschool children with handicaps during group instruction. Ten preschool children with developmental delays ranging in age from 2.5 to 4.5 years participated in the study which was conducted during morning circle time.

Teacher commands, child engagement, and the type of child response were observed across 50 days. A changing criterion design was used to assess increases in the independent variable, teacher command, and to assess the effects of systematic increases in opportunities to respond on the rate and quality of child responses. Choral responding was embedded within a Simon Says

format to increase the number and accuracy of students' responses. Results indicated that both the rate and accuracy of students' group responding could be increased by having the teacher implement choral responding. In addition, the rate of responding was closely linked to the number of commands given by the teacher.

The development and implementation of a survival skills curriculum was reported by Rule et al. (1990). Results suggested school survival skills can be taught to children within the preschool environment. Survival skills were identified by reviewing the literature and by direct observation of 10 kindergarten and first grade teachers and 20 students in their classes. Observations indicated that successful mainstreaming required students to be able to work independently, participate in groups, follow varied directions, and use varied materials. The Skills for School Success curriculum was implemented across three special education preschool classrooms and involved 18 students. Teachers observed student performance and either recorded independent completion of skill components on a checksheet or used a time sampling procedure to record student engagement

in activities.

Data were reported as ranges and weekly group mean percent steps correct for each survival skill. Skills included entry routines, sequenced individual tasks, pledge of allegiance, individual tasks, workbook tasks, and transitions. Results indicated that classroom ranges and means increased significantly over baseline measures for all skills. In addition, mainstream teachers unfamiliar with the curriculum were asked to complete the Kindergarten Survival Skills Checklist (Vincent et al., 1980) for each child before and after curriculum implementation. Paired-samples t-tests yielded statistically significant differences between pre- and posttest total scores and for 8 of the 11 subskills. Kindergarten or elementary school teachers provided follow-up data on 6 of the 18 students, with teacher reports indicating all 6 students performed 90-100% of the skills with "little or no help" and 4 children performed 75% of the skills independently.

Purpose of the Study

This study is an attempt to investigate the

potential application of template matching to facilitate the transition of preschool students with handicaps into mainstream, regular education kindergarten classrooms. By generating interventions which target environmental modifications then examining generalized effects through follow-up data, both the importance of looking at environments as potential targets for change and the treatment utility issue as noted by Barnett and Macmann (1992) will be investigated.

The purpose of this study was to evaluate the viability of using template matching to identify targets for intervention which would enable preschool students who are at-risk for school failure to transition successfully into regular education kindergarten programs. Specifically four research questions were addressed: a) How effective is template matching as a method of assessing differences between preschool and kindergarten environments? b) Can template matching be used to design and implement interventions to facilitate the transition of preschoolers with handicaps and at-risk for academic failure into kindergarten? c) What are the differential effects of interventions developed from template matching and traditional preschool programming

on the behavior of the preschool students and on the preschool instructional environment? and d) What are the differential effects of these interventions on preschool students' performance in regular education kindergarten classes?

Method

Participants and Settings

A total of 61 preschool students (5 and 6 years old) attending three preschool classes operated by Project Head Start of the Lehigh Valley participated in this study. All preschool students were attending their last year of Head Start before entering kindergarten classes the following year. Project Head Start uses federal income guidelines as eligibility criteria for obtaining center-based classroom services. The philosophy of the Head Start curriculum is developmentally-based, stressing exploration, child-initiated activities, and individual planning. Three basic curriculum areas stressed by the program are social-emotional development, cognitive development, and physical development. Preschool classes averaged 4 hours in length, including breakfast and lunch. Approximately 2 to 2-1/2 hours of instructional activities occurred between breakfast and lunch times.

The three classes participating in the study were selected by the supervisor of educational services for Lehigh Valley Head Start. Parental permission forms

were sent home with each child along with a letter explaining the project. The letter and permission form were sent in both Spanish and English. The return rate for permission slips was 100% in all classes with all parents consenting participation. Classes were then assigned to experimental groups based on teachers' self-reported desires to participate in the project and a discussion with the Component Director for Education. Both the Intervention (n=20) and Control (n=21) classes were located in local elementary schools while the Assessment Only (n=20) class was located in a church which also housed two other Head Start classes. Across the preschool students assigned to Intervention or Assessment Only conditions, 10 kindergarten classes were identified as the classes these students might attend the following year (1991-92). Identification of the kindergarten classes was based on geographic location; classes contained within the 1990-91 preschool students' home schools were included in the initial pool. Of these classes, four were randomly selected for inclusion in the study.

Both the Intervention and Assessment groups were assessed using the SSSRS and template matching using

direct observation. The Control group was assessed using only the SSSRS. Only the Intervention group received any instructional changes based on the template matching assessment. In this way the effects of the template matching assessment and the intervention could be viewed separately.

Preschool children with handicaps. Approximately 80-100% of students in the Head Start classes are identified as handicapped or at-risk for school failure according to PL:99-457. The majority of the participating students had language delays while some had additional handicapping conditions including developmental disabilities, learning disabilities, and emotional or behavioral problems.

Index students. Four children, two boys and two girls, were selected to serve as index children from the students in both the Assessment Only and Intervention preschool classes. Children were selected on the basis of teacher interviews in which teachers identified a pool of students who had either language or developmental delays or who required additional learning or emotional/behavioral support. Two of the four index

children in the Assessment Only group had language delays while one had both language delays and learning disabilities. All index children in the Intervention class were language delayed. In addition, one boy had behavior problems and two other students had learning disabilities.

In the first year (1990-91) two index children were also selected from each kindergarten class selected to be observed. Two index children were also selected in the follow-up year (1991-92) from each kindergarten class into which a preschool index child from the previous year (1990-91) had been placed. Selection procedures for kindergarten index children were done on the basis of teacher nomination. Teachers were asked to nominate five moderately successful, solid "B" students, including at least two boys and two girls. Permission slips for participation were then sent home with these students and one boy and one girl were selected randomly from the returned approvals of each class. Only one parent denied permission for participation. The use of two index children to estimate instructional variables and student performance of a classroom of students has been shown to be a reliable and valid method for

template matching assessment (Hoier, McConnell, & Pally, 1987).

Assessment Process

Measures. Two observation systems were used to collect direct observation data, (ESCAPE) (Carta, Greenwood, & Atwater, 1986) and ACCESS (Atwater, Carta, & Schwartz, 1989). Using ESCAPE, a single observer tracks a single child for an extended period of time, usually 2 hours or more. Each minute of observation is divided into four 15-second momentary time samplings in which the following subcategories are coded: a) ecological-designated activity (activity, initiator, materials), b) ecological-location (location, grouping, composition), c) teacher-teacher definition (teacher behavior, teacher focus), and d) student-teacher behaviors (target behaviors, competing behaviors, verbal behaviors). A copy of the variables observed using ESCAPE can be found in Appendix A. Interobserver agreement for ESCAPE has been reported as ranging from 84% to 94% across all subcategories (Carta et al., 1987).

ACCESS, a 10-second momentary and whole interval

time sampling system, was designed to study student-teacher interactions during group instruction, independent seat work, and transition activities. Target children are observed in rotating sequence with each child being focused on for 5-minute blocks of time. Observation information includes: a) activity, b) engagement in activity, and c) interactions between teacher and child. In addition, ecological information such as teaching arrangement, material location, and type of prompt is recorded at the end of each five minute interval. A list of the variables observed using ACCESS can be found in Appendix B. Interobserver agreement on teacher and student behavior has ranged from 75 to 97% across categories, except for the category of teacher feedback which ranges from 48% to 83%. Interobserver agreement on ecological variables ranged from 59 to 95% with a mean of 82% (J. Atwater, personal communication, October 12, 1990).

The School Survival Skills Rating Scale (SSRS) (Sainato & Lyon, 1983) was completed by teachers as a pretest, post-test, and follow-up measure of teacher ratings of preschoolers' classroom performance. The SSRS is a 52-item checklist which uses a 5-point scale

to indicate the level of student competence across eight categories of skills including instruction following, classroom behavior, work, large group responding, transition, independent work, social, and self-care behaviors. In addition, kindergarten teachers during the first year of the study completed the Teacher Importance Version of the SSSRS. The Teacher Importance Version of the scale has teachers rate the same items on a 5-point scale ranging from "not important" to "extremely important" for everyday survival in their classrooms. A copy of the SSSRS is found in Appendix C. Kendall correlation coefficients assessing interrater reliability for the SSSRS have been shown to range from .12 for group participation to .66 for group attending (Miller, 1989). Seven of the ten categories received mean correlations of greater than .50 including: group attending (.66); independent task work (.63); following classroom routine (.63); direction following (.62); appropriate classroom behavior (.59); game playing skills (.56); and self-care skills (.53).

Finally, the number of special education referrals made by the kindergarten teachers for any preschoolers

involved in the study was collected as a collateral measure. Principals of each school were asked to indicate from a list of all participating preschoolers the placement of each child.

Assessment procedures. Index children were observed with ESCAPE for 2 days each, excluding breakfast and lunch, for approximately 2 hours per day. Length of observations for ESCAPE ranged from 56 to 121 minutes per session. Students were generally observed over two different sessions in each phase so that the total number of minutes per child averaged 229 per phase (range 203-258). Days for observation were selected by the data collectors and teachers in an attempt to observe a typical day of instruction (e.g. days when a substitute was teaching or parent visitation days were not observed). Hoier et al. (1987) and Greenwood et. al. (1985) found observations over a small number of school days to be a valid and reliable estimate of the instructional environment.

The ESCAPE observation code is developed for both pencil and paper recording as well as computerized recording using laptop computers. During the preassessment phase the computerized system was not

available so that data were collected using the paper and pencil method. In subsequent phases computerized recording was used with the exception of one observation during the follow-up phase when the computer program was temporarily out of commission.

ACCESS observations were planned for between 1 and 2 hours per day and included only observation of group instruction, independent seat work, and transition times. Actual ACCESS observations ranged from 18 to 76 minutes in length for a mean of 118 minutes per child per phase.

ESCAPE and ACCESS observations were conducted by different data collectors and were usually conducted on different days for each student. Observations were conducted on the following schedule: Kindergarten index children were observed in the fall of 1990. Preschool index children were observed in December and January of 1990-1991 for preassessment and in April-May of 1991 for post-assessment. Index children in the intervention class were also observed mid-intervention at the end of March to assess whether the intervention was being effective in terms of

altering the ecological variables of the intervention class. Follow-up observations were conducted from the end of October to the beginning of December of 1991, the childrens' kindergarten year.

The SSSRS Teacher Importance Version was administered in the fall of 1990 to all the kindergarten teachers in two schools from which the index classes were chosen. The student competence version was completed by the preschool teachers in the fall and spring of the children's preschool year (1990-91) and by the kindergarten teachers in the follow-up year (1991-92). The SSSRS student competence version was completed on all 61 students at pre- and post-assessment and on 53 students at follow-up. Attrition, due to children moving out of the school district, accounted for the loss of five students from the Control group, one from the Assessment Only group, and two from the Intervention group. Only one index child was lost to attrition.

Training data collectors. All observations were conducted by graduate students in either school psychology or special education attending Lehigh University. Initial training consisted of instruction

which included reviewing the codes, practice with descriptive examples, and feedback. Observers were trained following instruction using videotapes of preschool classes until accuracy scores ranged above 70% on all categories. Practice observations were then moved into preschool classrooms. Levels of interrater agreement exceeded 80% across all categories of behaviors before actual data collection began.

Procedure

Overview. In the fall of 1990 templates were developed from direct observations completed in kindergarten classes targeted as the next environment for the 1990-91 preschool classes. Observations of the preschool classes were then conducted in December and January of 1990-91 and the two sets of data compared. An intervention was designed based on discrepancies identified through the use of the template matching strategy. The intervention targeted independent seat-work for the entire class using art and writing materials. Direct observations were conducted halfway through intervention and at the end of intervention. These data were then template matched against the

kindergarten data to see if discrepancies were reduced. Follow-up observations were conducted the following year for the preschoolers now attending kindergarten, with comparisons being made between targeted preschoolers and their peers.

Template development. Templates were developed for each kindergarten class and both the Intervention and Assessment classes in preschool based on data from the initial direct observation data. Templates were developed on all 96 variables of the ESCAPE code and for independent seat work, group instruction, and transition from the ACCESS code. Data from the Intervention and Assessment classes were graphed next to the templates of the kindergarten classes which the students were most likely to attend based on geographic region. Ranges and means were graphed for each variable and each class.

Data from the preschool classes was then compared to the kindergarten templates in terms of ranges and means. Variables for which the range of the preschool data was outside the range of the kindergarten data were considered for intervention.

Intervention design. The investigator met with classroom staff and the Component Director for Education

to examine the data and discuss possible intervention targets. After reviewing the data and discussing possible interventions a decision was reached collaboratively. It was agreed that independent work tasks, which did not occur at all in preschool, would be the major focus of the intervention. Ecological variables reflecting these differences included: a) location of students at tables versus on the floor, b) participation in fine motor activities, c) large versus small group or individual instruction, d) use of art and writing materials, and e) teacher versus student-initiated activities. The amount of time kindergarten students spent in independent work tasks (approximately 30-40 minutes) was considered and the preschool staff agreed to set a goal of having the preschool students work for between 15-20 minutes at a time by the end of the preschool year.

Activities were basically arts and crafts in nature. Examples included students making caterpillars out of colored circles, stringing multicolored beads, and making collages.

Intervention activities were conducted initially

Monday through Wednesday with one third of the students each day and on Thursday with the entire group. This was to insure high levels of appropriate participation by all the students. Intervention assessment was conducted during this time. After 4 weeks the intervention was switched to every other day with the entire group. Intervention activities began the second week in March and continued until the second last week of school, a period of 8 weeks. Post-assessment data was collected during the final weeks of this stage.

Treatment integrity. Twice a week during the independent seat work activity the principal investigator was present and completed the Independent Seat Work Intervention Checklist (see Appendix D). The Checklist, designed for this study included recording: 1) starting and stopping times for the activity and for individual target students, 2) the number of students participating in the activity, 3) the number of instructions given prior to independent work, and 4) the number of group and individual prompts given during independent work. In addition, every other week the Procedural Checklist -Classroom Survival Skills Independent Work (see Appendix E) (Juniper Gardens

Childrens Project, 1989) was completed and feedback given to the teacher. This checklist is divided into three sections including Classroom Ecology, Teacher Procedures, and Student Behaviors. Items having to do with student self-assessment were not completed as this procedure was not implemented.

Interobserver agreement. Interrater agreement checks were conducted once on each child during each phase for both ESCAPE and ACCESS thus sampling one quarter of all observations. Interobserver agreement observations were done by the investigator and by one other data collector. Agreement was calculated on an interval by interval basis for occurrence only by dividing the total number of agreements by the total number of agreements plus disagreements and multiplying by 100.

Results

Treatment Integrity

Treatment integrity checks were aimed at determining if increased independent seatwork actually occurred during and following intervention. Results indicated clearly that teachers actively implemented the designed intervention. The number of children involved in independent seatwork at any one time ranged from 6 to all 20 children. Initially the time spent in independent seatwork had been 0 minutes per day. Intervention began at 5 minutes of independent seatwork and advanced to 25 minutes by the end of the intervention. Although initially during intervention prompts to individual children exceeded group prompts, this trend was reversed during the last 3 weeks of intervention. Individual prompts decreased from an average of 16.5 over the first 2 weeks of intervention to an average of 4.0 over the last 2 weeks of intervention. Group instructions prior to individual work time ranged from 2.0 initially to 5.0 by the end of the intervention.

Scores on the Procedural Checklist ranged from 87.5% to 100% across the 8 weeks. Scores on the

Classroom Ecology section and Teacher Procedures sections both ranged from 87.5% to 100%. On the Student Behaviors section scores ranged from 75% to 100%. The scores on the Classroom Ecology and Teacher Procedures sections indicated high levels of integrity for the implementation of the independent seat work intervention.

Interobserver Agreement

Reliability sessions for ESCAPE averaged 39.5 minutes (range 16 to 107 minutes) for a total of 1343 minutes. Reliability means and ranges for all ecological and teacher and student behavior variables are listed in Table 1. Means were above 90% for all categories. Reliability sessions for ACCESS averaged 34.8 minutes (range 20 to 95 minutes) for a total of 800 minutes. Means and ranges for all categories are listed in Table 2. Means were above 85% for all categories of behavior and ecological variables.

Table 1

Interobserver Agreement Data for ESCAPE Code

Variable	Mean	Range
Designated Activity	98.3	91.7 - 100
Activity Initiator	99.2	93.8 - 100
Materials	97.1	83.3 - 100
Location	99.1	93.6 - 100
Grouping	99.2	91.6 - 100
Composition	99.3	94.4 - 100
Teacher Designaton	98.2	90.6 - 100
Teacher Behavior	90.7	79.2 - 97.9
Teacher Focus	91.6	87.1 - 100
Target Behavior	95.6	82.1 - 100
Competing Behavior	94.3	79.2 - 100
Verbal Behavior	95.1	90.6 - 100

Table 2

Interobserver Agreement Data for ACCESS Code

Variable	Mean	Range
Activity	100	-----
Student Behavior	93.2	85.8 - 98.9
Teacher Prompts	85.9	75.0 - 92.5
Teacher Feedback	86.3	50.0 - 100
Response to Prompts	94.5	82.6 - 100
Location	99.7	93.8 - 100
Grouping	98.32	87.5 - 100
Content	98.9	75.0 - 100
Materials	98.3	80.0 - 100
Teaching Format	93.0	67.7 - 100
Seating Arrangement	100	-----
Activity Type	100	-----
Location of Materials	98.4	85.7 - 100
Teacher Focus	100	-----
Transition Cue	100	-----
Participants	95.4	50.0 - 100
Clean-Up	100	-----

Baseline Template Matching Data

ACCESS data for transition and group instruction showed few differences between preschool and kindergarten at baseline as shown in Table 3.

Means for preschool students' performance in both the Assessment Only (P-1) and the Intervention (P-2) classes were within the kindergarten ranges with the exception of two variables. Competing behaviors and individual prompts during transition for the Assessment Only group were slightly higher than the targeted kindergarten classes ranges.

ACCESS data for independent seatwork activities is graphically displayed in Figure 1 for the Assessment Only group and in Figure 2 for the Intervention group. Baseline kindergarten data indicate that means for active engagement varied considerably across the four different kindergarten classes. However, when active and passive (attending) engaged behaviors were combined into the engaged composite variable, variability across kindergartens was somewhat reduced. Baseline data for competing behaviors in kindergarten were low, ranging less than 5% across all classrooms with one exception, K4, in which competing behaviors ranged from 0% to 48%

Table 3

Discrepant Variables, Means, and Ranges at Baseline
from ACCESS

Variable Class and Variable	K1	K2	P1	K3	K4	P2
Transition variables						
Engagement	81 47-100	64 40-86	54 0-98	62 44-74	51 0-79	72 24-100
Competing behs.	0 -----	0 -----	2 0-26	8 4-12	3 0-23	1 0-6
Group prompt	3 0-10	14 0-38	6 0-19	6 4-9	14 0-50	6 0-29
Target prompt	1 0-4	0 -----	6 0-11	4 3-6	9 0-50	8 0-15
Group feedback	0 -----	0 -----	1 0-9	1 0-4	2 0-6	2 0-12
Target feedback	0 -----	0 -----	1 0-11	0 -----	1 0-3	1 0-10
Group instruction variables						
Engaged composite	96 95-99	96 92-100	93 78-100	88 84-92	84 50-99	97 87-100
Compliance to group prompts	86 72-95	82 76-90	76 42-100	54 42-69	48 38-56	72 38-100

Table 3, cont.

Discrepant Variables, Means, and Ranges at Baseline
from ACCESS

Variable Class and Variable	K1	K2	P1	K3	K4	P2
Group instruction variables continued						
Compliance to ind. prompts	100 ----	70 50-92	100 ----	88 72-100	100 ----	93 50-100
Competing behs.	0 ----	1 0-2	1 0-2	1 0-5	1 0-3	1 0-4
Group feedback	4 3-4	1 0-2	4 1-8	2 0-4	2 0-4	3 0-4
Target feedback	1 0-2	1 0-2	2 0-3	1 0-4	1 0-3	2 0-4

K1, K2 = kindergarten classes 1 and 2 targeted for attendance of P1 (intervention preschool class)

K3, K4 = kindergarten classes 3 and 4 targeted for attendance of P2 (assessment only preschool class)

with a mean of 17%. Group prompts exceeded individual prompts in all kindergarten classes with means for individual prompts less than 4% of observed intervals. Since no seatwork occurred in the preschool classes no data were available on individual variables represented by zero data points on Figures 1 and 2.

Data from the ESCAPE code also yielded discrepancies between preschool and kindergarten classes. Table 4 shows the means and ranges for discrepant variables for all six classrooms based on ESCAPE data. Figures 3 and 4 display graphically the data for the five targeted ecobehavioral variables using the ESCAPE code.

First, differences were found in the percentages of intervals preschoolers and kindergarten children were engaged in different types of activities. Some of the differences in time spent in activities was due to the selection of observation times. Observation times were selected to maximize instructional time. For example, greater percentages of intervals were spent in play and gross motor activities in preschool than kindergarten. However, due to the selection of observation times, recess was not observed in kindergarten, the time when most play

and gross motor activities would occur. Therefore, differences seen in Figures 3 and 4 may be more a product of times chosen for observation than of true differences in amount of time spent in activities. One important difference in terms of instructional time was found. The percentages of intervals observed in fine motor activities were lower for both preschool classes than for the kindergarten classes.

Use of various materials also differed across preschool and kindergarten environments including more frequent use of manipulatives and less frequent use of instructional materials and art and writing materials in preschool than in kindergarten. Because preschool staff were not willing to reduce the amount of time spent using manipulatives nor increase the amount of time spent using instructional materials these variables were not selected as potential intervention targets.

Grouping was the third area where some sizeable discrepancies were found between kindergarten and preschool data. As shown in Figures 3 and 4 preschool students spent larger percentages of intervals in small group or solitary groupings than did kindergarteners while kindergarteners spent more time in large group

instruction than did preschoolers.

Who initiated the activities also showed marked discrepancies from preschool to kindergarten. As reflected in Figures 3 and 4 preschoolers at baseline were observed to spend between 52% and 85% of the time in teacher initiated activities with means of 58% and 65%. Kindergarteners ranged from 78% to 100% teacher initiated activities with means ranging from 83% to 98% of observed intervals being teacher led.

The final ecological discrepancy involved student location. Student location data indicates that preschoolers spent much less time at tables and more on the floor than the kindergarteners.

Some discrepancies were found between teacher behavior variables and student behavior variables. As seen in Table 4, teachers in preschool were observed prompting during a greater percentage of intervals and instructing during a smaller percentage of intervals than were kindergarten teachers. In addition, preschool students spent a slightly larger percentage of time talking with teachers, peers, and engaged in undifferentiated talk than did kindergarten children.

However, mean levels of student talk were low for all classes. Means for student-student talk were less than 8% of intervals for all classes while means for student-teacher talk were less than 6% in preschool and less than 2% in kindergarten. Undifferentiated talk averaged less than 2% across all classes.

Intervention and Post-Assessment Data

Means for ACCESS data on transition and group instruction variables at both intervention assessment and post-assessment remained within the kindergarten ranges for all variables with one exception. Competing behaviors during transition times rose at intervention-assessment from a mean of 1% at baseline to 16%. Another increase was noted at post-intervention assessment with a mean of 21% for the Intervention group. Competing behavior means for the Assessment Only group were under 3% at both baseline and post-assessment. Kindergarten means for this variable ranged from 0% to 8% across all four classes.

Table 4

Discrepant Variables, Means, and Ranges at Baseline
from ESCAPE

Variable Class and Variable	K1	K2	P1	K3	K4	P2
Activity						
Play	9 5-13	10 8-10	26 13-36	0 -----	4 1-7	22 6-44
Preacademics	26 24-27	24 20-23	16 12-24	31 22-42	12 8-17	14 8-17
Fine motor	16 13-19	31 14-44	9 0-20	24 19-30	36 23-47	13 0-26
Gross motor	2 1-2	7 1-11	18 15-22	2 0-3	11 10-13	16 9-21
Materials						
None	23 22-23	25 20-25	38 29-52	17 17-18	17 13-22	34 28-43
Instructional	18 15-21	27 17-23	8 4-12	22 22-32	9 7-12	8 6-11
Manipulatives	6 4-7	1 0-1	19 13-24	5 1-8	10 2-17	25 12-32
Art & writing	22 20-23	31 12-48	4 3-6	24 20-28	29 23-35	2 0-5
Pretend play	4 2-7	11 9-12	12 9-23	0 -----	1 0-2	10 1-27
Grouping						
Large group	82 78-87	80 67-82	53 46-59	90 89-92	82 79-85	48 42-51
Solitary	4 1-7	6 5-6	26 9-34	2 1-3	5 3-7	32 27-45

Table 4, cont.

Discrepant Variables, Means, and Ranges at Baseline
from ESCAPE

Variable Class and Variable	K1	K2	P1	K3	K4	P2
Initiator						
Teacher	84 83-84	98 82-99	64 61-65	97 95-99	82 80-85	59 52-83
Location						
At table	34 34-35	48 29-62	12 7-15	26 24-28	46 45-46	18 5-28
Student behavior						
Transition	21 19-22	9 6-10	26 15-39	5 4-6	19 15-23	17 13-23
Attending	44 38-49	44 31-52	28 18-37	62 58-66	32 30-33	30 20-39
Talk to teacher	1 1-2	2 1-2	5 3-8	1 0-1	1 0-1	3 1-6
Talk to peer	3 2-4	5 4-6	8 1-19	4 3-5	1 1-7	8 5-11
Teacher behavior						
Verbal prompt	29 28-31	26 26-28	44 41-52	36 34-38	25 19-31	40 37-43
Instruct	13 9-17	27 15-37	2 1-3	13 8-18	14 10-18	6 3-8

K1, K2 = kindergarten classes 1 and 2 targeted for attendance of P1 (intervention preschool class)

K3, K4 = kindergarten classes 3 and 4 targeted for attendance of P2 (assessment only preschool class)

Differences between the impact of the intervention based on template matching and traditional preschool programming can be seen by comparing the intervention and post-intervention phases on Figures 1 and 2. Preschool means for the Assessment Only class remained at zero for both intervention and post-intervention assessment because no independent seatwork activities were conducted (see Figure 1). For the Intervention group means and ranges of all ACCESS variables during and after intervention were within the kindergarten ranges as shown in Figure 2. Means for the Intervention classroom were slightly higher than kindergarten classes for both active engagement and the engaged composite variable. Low levels of competing behaviors were found and group prompts increased from mid-intervention to post-assessment.

As shown on Figure 3 data on the five targeted ecobehavioral variables from the ESCAPE code resulted in increases to within the kindergarten ranges for the Assessment Only group for only one variable, percent intervals doing fine motor activities. Percent intervals in art and writing activities, large group instruction,

and teacher initiated activities all decreased or became more variable at post-assessment for the Assessment Only group.

Figure 4 displays the data for the Intervention group. By post-assessment two variables showed increases in percent intervals which placed them in the kindergarten ranges, percent intervals in fine motor activities and time spent at tables. Time spent using art and writing materials increased from pre- to intervention- to post-assessment to a level slightly below the kindergarten templates. Two variables, large group activities and teacher initiated activities were both slightly higher at post-assessment than at preassessment. The highest levels for both these variables were recorded during the intervention assessment.

Follow-up Data

Follow-up data for ACCESS independent seatwork and ESCAPE data are graphically displayed in Figures 5 and 6. Ranges for the kindergarten comparison peers are represented by line segments while the means for the targeted preschool children now attending kindergarten are represented by squares. Kindergarten classes are coded "I" for those containing Intervention students and

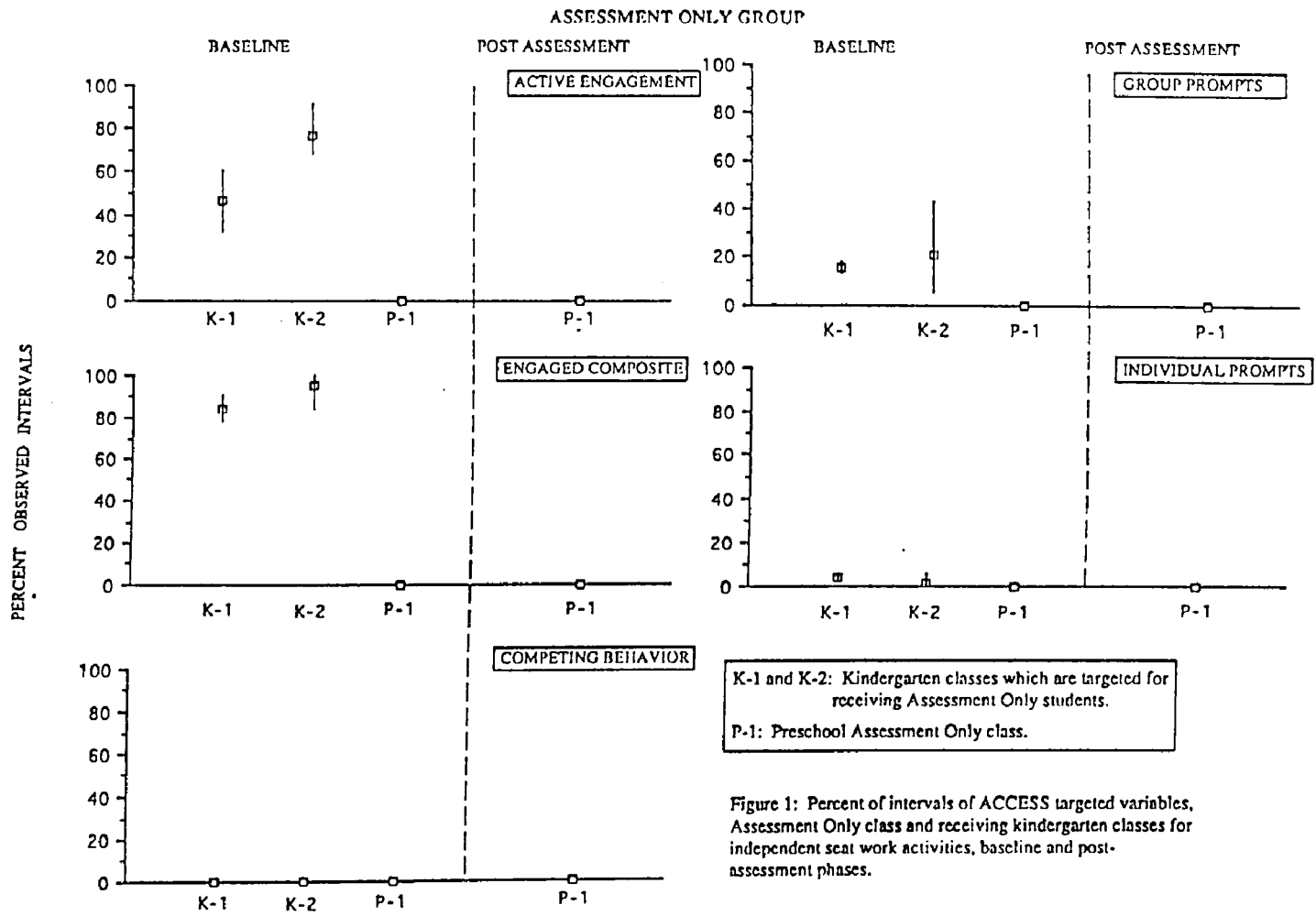
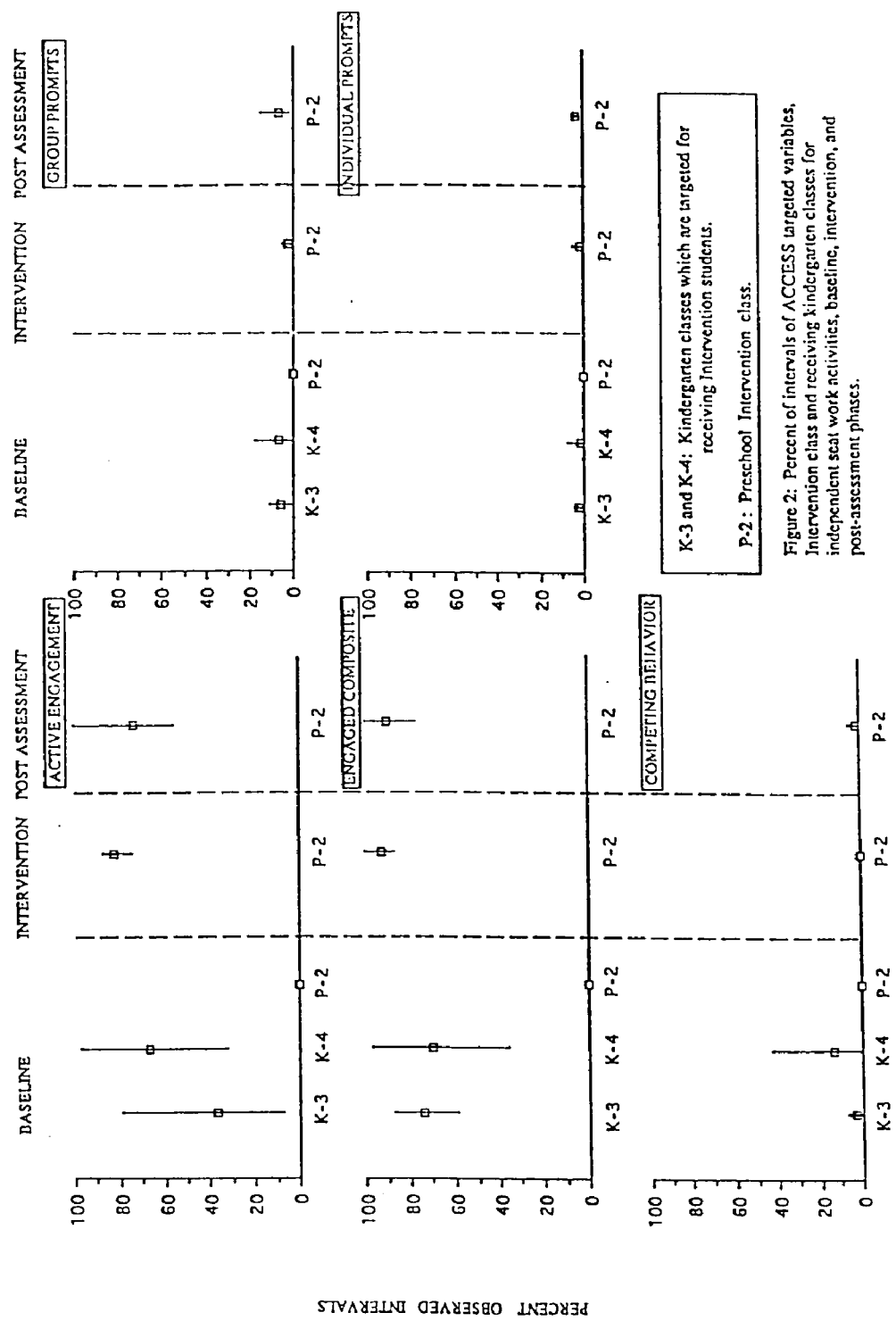


Figure 1: Percent of intervals of ACCESS targeted variables, Assessment Only class and receiving kindergarten classes for independent seat work activities, baseline and post-assessment phases.

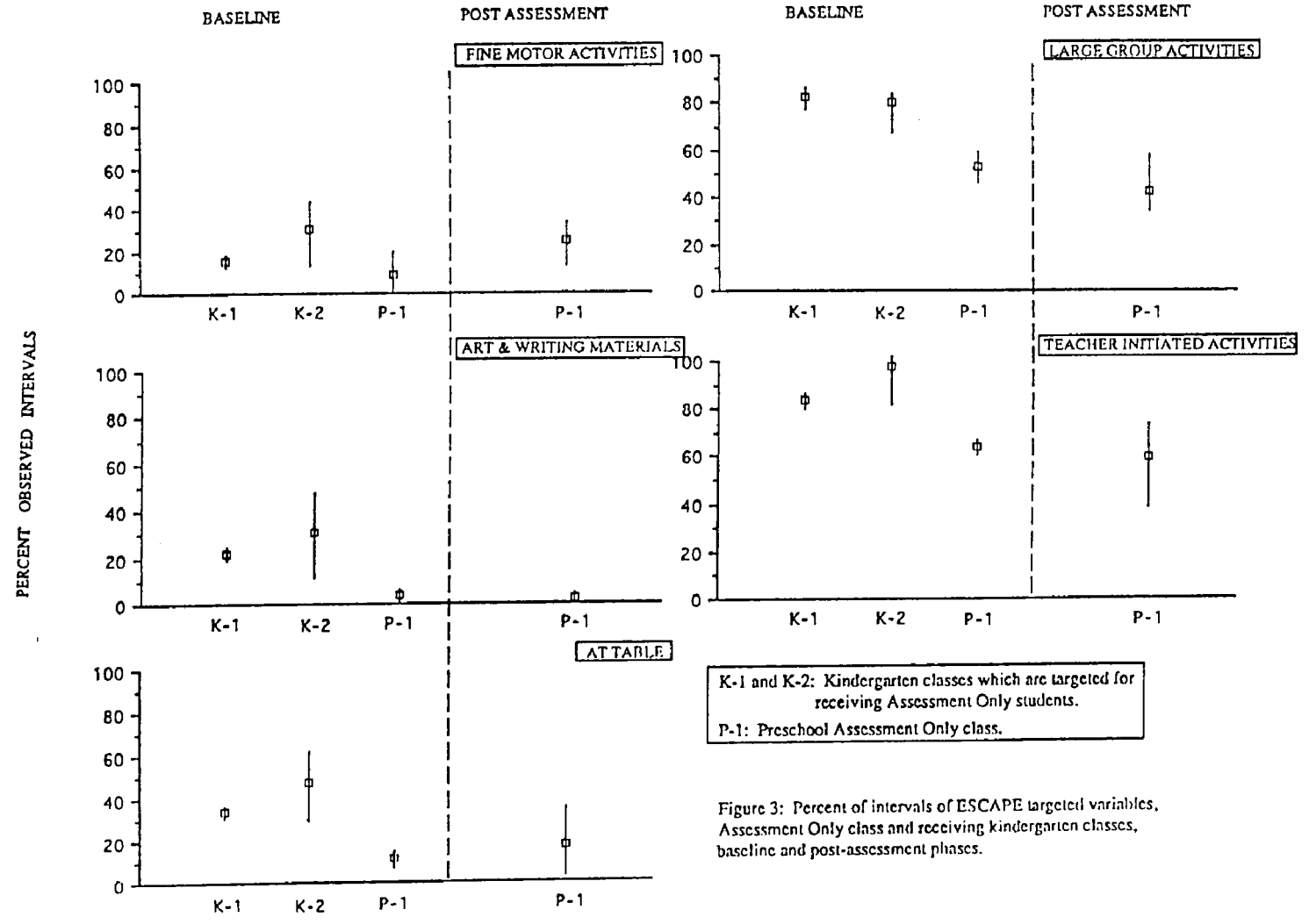
INTERVENTION GROUP



K-3 and K-4: Kindergarten classes which are targeted for Intervention class and receiving Intervention students.
 P-2: Preschool Intervention class.

Figure 2: Percent of intervals of ACCESS targeted variables, Intervention class and receiving kindergarten classes for independent seat work activities, baseline, intervention, and post-assessment phases.

ASSESSMENT ONLY GROUP



K-1 and K-2: Kindergarten classes which are targeted for receiving Assessment Only students.
P-1: Preschool Assessment Only class.

Figure 3: Percent of intervals of ESCAPE targeted variables, Assessment Only class and receiving kindergarten classes, baseline and post-assessment phases.

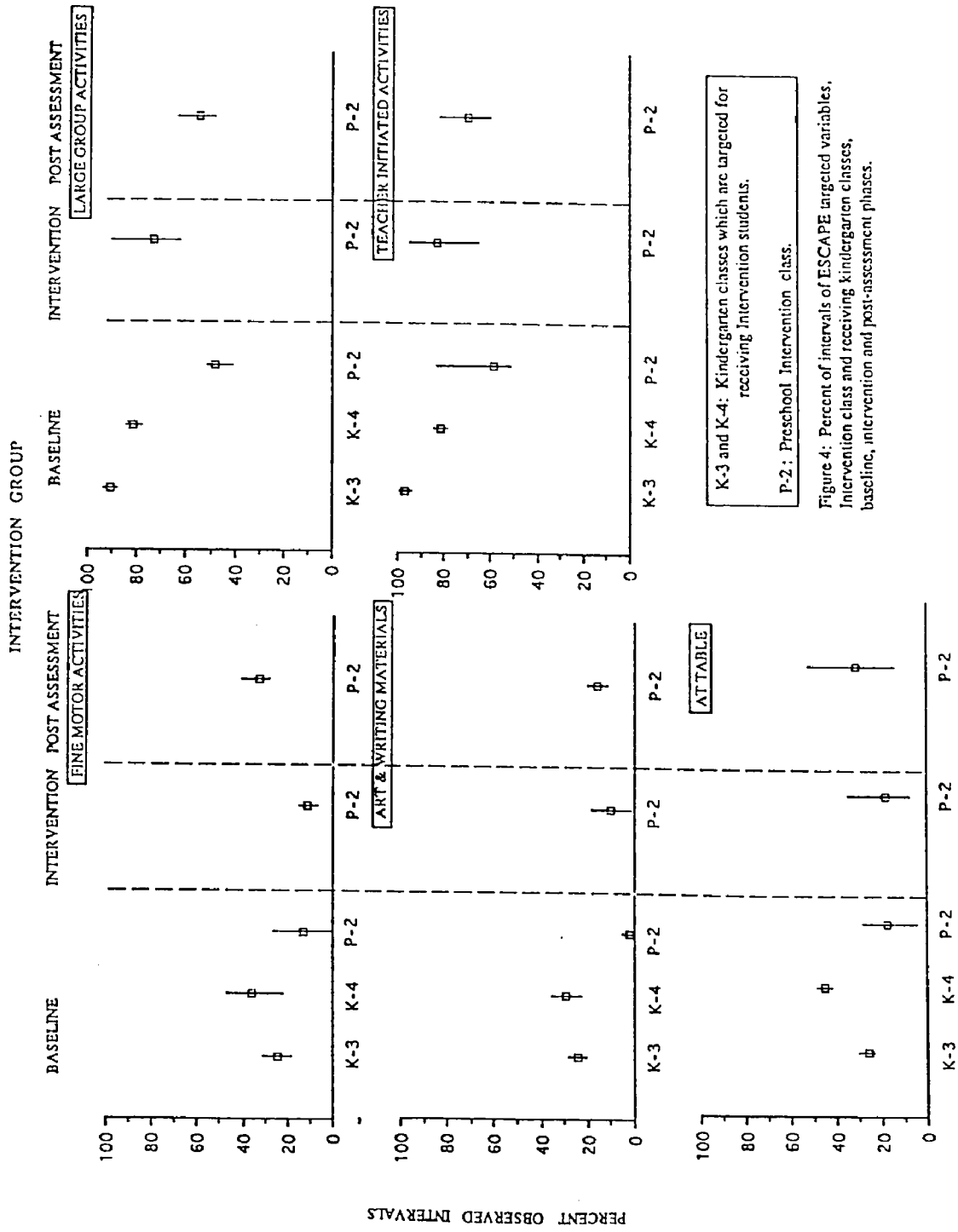


Figure 4: Percent of intervals of ESCAPE targeted variables, Intervention class and receiving kindergarten classes, baseline, intervention and post-assessment phases.

"AO" for those containing Assessment Only students.

ACCESS data for independent seatwork times show that while active engagement and engaged composite times were within class ranges for all students, Intervention and Assessment Only students differed on two important variables (see Figure 5). Levels of competing behavior during independent seatwork for all four Assessment group students exceeded class ranges which were at zero except for AO-4, but were within class ranges for all three Intervention group students. In addition, levels of competing behaviors were lower for the Intervention group than for the Assessment group.

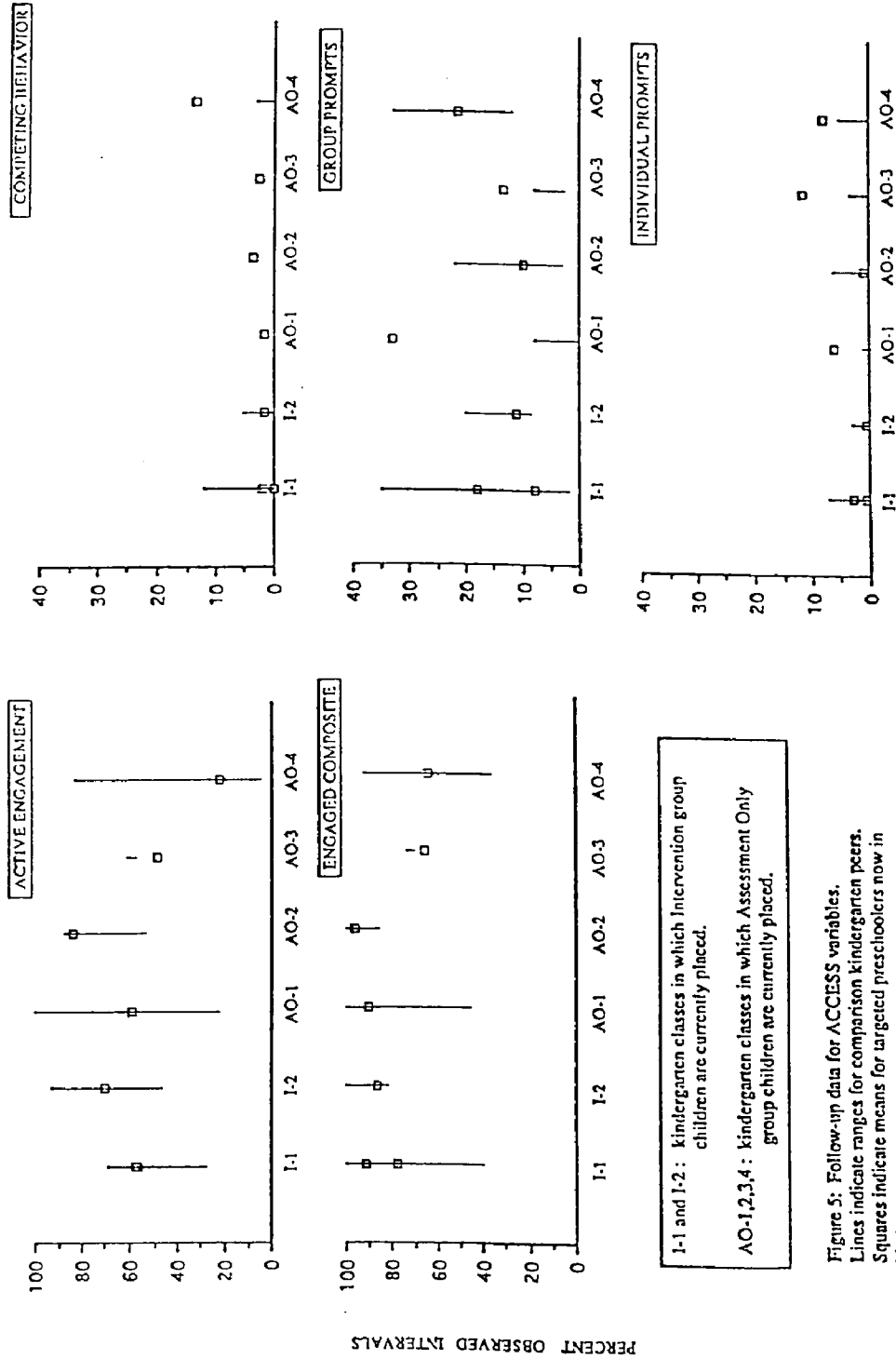
The second variable on which Intervention and Assessment group students differed was on the number of individual prompts delivered to the target child by the teacher. As seen in Figure 5, all three remaining Intervention children had target (individual) prompt levels within the class range and averaged under 4% of observed intervals. Three of the four Assessment group children had individual prompt levels which exceeded the class ranges averaging 6, 8 and 11% of the observed intervals.

Follow-up data from ESCAPE yielded no consistent

results for groups as shown in Figure 6. Across all variables and most classrooms, children from the preschool classes had mean levels of participation outside the ranges of their comparison peers. For example, three Assessment Only students and two Intervention students engaged in fewer intervals of fine motor activity than their peers. Two students from each group engaged in less use of art and writing materials while one student from each group used these materials more frequently than peers. All Intervention children and two of four Assessment Only children spent less time at the table than their peers. The other two Assessment Only children spent a larger percentage of time at the table. Teacher initiated activities were high across all classrooms with no differences across groups. No group differences are noted for large group instruction either.

SSRS Data

Data for the SSRS was analyzed according to the seven categories of behaviors assessed including instruction following skills, classroom behavior, work related skills, large group responding, transition



1-1 and 1-2: kindergarten classes in which Intervention group children are currently placed.
 AO-1,2,3,4: kindergarten classes in which Assessment Only group children are currently placed.

Figure 5: Follow-up data for ACCESS variables. Lines indicate ranges for comparison kindergarten peers. Squares indicate means for targeted preschoolers now in kindergarten.

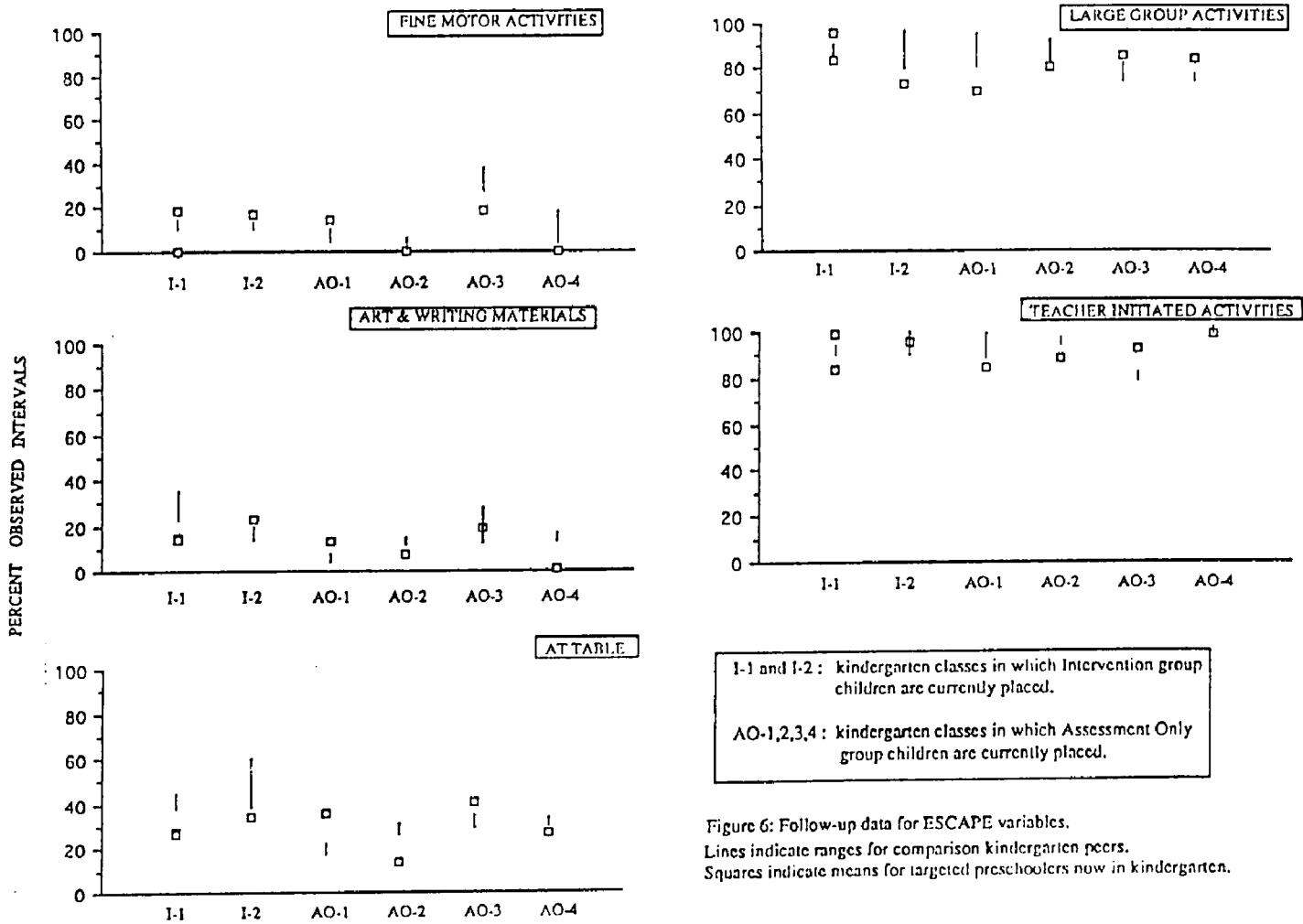


Figure 6: Follow-up data for ESCAPE variables.
 Lines indicate ranges for comparison kindergarten peers.
 Squares indicate means for targeted preschoolers now in kindergarten.

skills, independent seatwork skills, and social/communication skills. Separate t-tests were conducted to compare the Control group to the Assessment group and the Assessment group to the Intervention group. This enabled the separate analyses of the template matching process and the intervention process. Bonferroni's technique was employed to reduce the risk of Type I error, resulting in the probability level being set at .025 for each separate comparison.

At preassessment there were no differences across groups in any of the SSSRS categories. At post-assessment the Assessment Only group was significantly greater than the Control on classroom behavior on classroom behavior ($f=2.82$, $p .022$), work related skills ($f=5.92$, $p .0005$), and social/communication skills ($f=3.70$, $p .007$). One significant difference between the Assessment Only and Intervention group at post-test was in instruction following skills ($f=3.73$, $p .003$), favoring the Assessment Only class.

At follow-up the Control group was found to be significantly better than the Assessment Only group on independent seatwork skills ($f=3.28$, $p .018$), and social/communication skills ($f=3.44$, $p .015$). There

were no significant differences at follow-up between the Assessment Only and Intervention groups.

Referrals to Special Education

Two children from the Assessment Only class have been referred and are currently placed in the integrated kindergarten class in their early childhood center. No students from the Intervention group have been referred for special education services. In addition, one child each from the Intervention and Assessment Only classes is currently participating in the Language Links class. One Language Links class is currently being operated in one early childhood center in the participating school district. Language Links is a new program this year which is privately funded and provides pull-out programming for students who are considered to have language deficits.

Discussion

The purpose of this study was to assess the value of template matching as a strategy for assessment and intervention of early childhood instructional environments. Four specific research questions were asked: a) How effective is template matching as a method of assessing differences between preschool and kindergarten environments? b) Can template matching be used to design and implement interventions to facilitate the transition of handicapped and at-risk preschoolers into kindergarten? c) What are the differential effects of interventions developed from template matching and traditional preschool programming on the behavior of the preschool students and on the preschool instructional environment? and d) What are the differential effects of these interventions on preschool students' performance in regular education kindergarten classes?

How effective is template matching at assessing differences in preschool and kindergarten environments?

Results of the study indicated that template matching of eco-behavioral variables resulted in the identification of discrepancies among the kindergarten

and preschool environments. Discrepancies were found for variables representing types of activities, materials, grouping of students, responsibility for initiation of activities, and location of students. Additionally, discrepancies on teacher and student behaviors were also identified including teacher levels of prompts and student levels of talking. Major differences in instructional arrangements included the amount of time children spent in independent seat work activities and large group instruction.

Can template matching be used to design and implement interventions which facilitate transitions?

By working with the preschool staff, changes were negotiated in the preschool environment which maintained the philosophy, climate, and integrity of the preschool environment while providing preschoolers with experiences similar to those they will most probably encounter in the next educational environment, kindergarten. The template matching strategy used in this study assessed the performance of successful kindergarten students through direct observation. Basing intervention decisions upon these criteria proved effective in altering the environment in the direction

intended.

This study begins to build a case for the treatment utility of template matching as an assessment strategy as called for by Barnett and Macmann (1992).

Discrepancies made obvious by the template matching procedure led directly to pinpointing independent seat work as a prime intervention target. Using additional data from the template discrepancies the specifics of the necessary intervention were established including increasing the time large groups of children spent in fine motor activities, using art and writing materials that were completed at the table.

By developing these activities designed to promote practice in the behaviors required for success during independent seat work activities in kindergarten, the transition for preschool children with special needs was facilitated. Template matching resulted in transition planning that was specific and detailed as recommended by Fowler (1988) and Huntinger (1981). Furthermore, the integrity of implementation was documented by continued assessment of the independent variables (Greenwood et al., 1991) while the direction was monitored by use of

these assessments within the template matching paradigm.

What are the differential effects in preschool of interventions developed from template matching assessment and traditional preschool programming?

Results suggested that the intervention developed from the template matching assessment resulted in closer alignments between performance of preschool students and the kindergarten children on targeted variables than did the traditional preschool programming. For the Intervention group, time spent in independent seat work activities increased to 25 minutes, three times per week by the end of intervention. Behavior during independent seat work including active engagement, competing behavior, and the level of group and individual prompts were all within the kindergarten classes' ranges. Increases in time spent in fine motor activities and working at tables resulted in the Intervention class being within the kindergarten range at post-assessment. Time spent in art and writing materials and in large group and teacher initiated activities increased over baseline for the Intervention group but, did not reach kindergarten levels by post-assessment.

Only one ecological variable observed using ESCAPE

was within kindergarten levels at post-assessment (fine motor activities) for the Assessment Only group.

Discrepancies for the other four targeted ecological variables either increased (art and writing materials, large group activities, and teacher initiated activities) or became more variable (time at table).

Perhaps even more importantly, traditional preschool programming resulted in the Assessment Only students never being exposed to independent seatwork activities during their preschool year. Consequently, behaviors critical for success during these activities could not be facilitated prior to kindergarten.

What are the differential effects of these interventions on preschool students' performance in regular education kindergarten classes?

Participation in the template matching intervention which focused on independent seatwork activities may have contributed to some extent to more successful performance in regular education kindergarten classes for the Intervention group. Direct observation data during follow-up indicated that students who participated in the intervention displayed less competing behavior during the targeted activity in kindergarten. Additionally, the level of individual prompts directed toward the Intervention group children in kindergarten was within their peers' ranges while the Assessment Only groups levels exceeded peer ranges. Finally, none of the children from the Intervention group have been referred for special education services while two children from the non-intervention groups are currently placed. This suggests that interventions based on template matching data and implemented with integrity may facilitate successful transitions from preschool to kindergarten. This supports previous

findings by Hoier et al. (1987) and extends the research by targeting the environment for intervention rather than specific child-centered behaviors (Barnett & Macmann, 1992).

Interventions which target the environment may prove to be more efficient than child-centered approaches in terms of ease of implementation and the numbers of children affected by a single intervention. Developing class-wide interventions targeting environmental factors may have a number of important benefits. First, it allows the teacher to use instruction as an intervention rather than overlaying interventions on top of already existing instruction. Teachers do not have to remember and attend to large numbers of individual goals and intervention topographies, rather individual performance goals may be identified within the environmental modifications. Second, targeting environmental arrangements means the entire class will be involved. Not only does this increase the number of children impacted but it allows the use of class resources, including peers and instructional assistants, for effective implementation resulting in more time and cost efficient interventions.

Another advantage is that if class-wide interventions are used, group skills versus individual skills may more often be targeted. Children's skills in participating in large group instruction are important for success in regular education kindergarten where individual attention may be minimal (Carta et al., 1988). Finally, environmental modifications place the emphasis for change and the responsibility for success on the instructional environment rather than on individual children or on individual teacher-child interactions. Thus, teachers or other staff planning for transitions may be more likely to examine the environmental demands of the targeted setting to look for specific changes which may facilitate the transition.

In general, this study has helped to show that template matching is an effective method of identifying the criteria of the next environment. The graphic display of kindergarten and preschool data allows for easy identification of discrepancies which can serve as targets for intervention. Interventions based on environmental targets identified through template matching do result in reducing the discrepancy between

current and future environments and consequently in increased success in the future environment. Thus, important periods of transition such as preschool to kindergarten, kindergarten to first grade, and school to work may be appropriate times to use template matching assessments and interventions.

Teacher Ratings

Teacher ratings from the School Survival Skills Rating Scale did not result in clear differences between groups. Differences emerged at post-assessment between both the Assessment Only and Control groups and the Assessment Only and the Intervention groups all of which favored the Assessment Only group. Differences between the Assessment Only and Control groups were reversed at follow-up, favoring the Control group, while no differences between the Assessment Only and the Intervention groups were found.

While the lack of consistency between teacher ratings and direct observation data are troubling they are not surprising. Walter and Vincent (1982) found that kindergarten teachers' rankings of students' interactions matched direct observation data only 28 to 35% of the time. A number of factors may account for

these differences. When completing checklists which encompass a large number of skills, teachers may be more influenced by their global assessment of the child than by that child's behavior during a specific activity. This may be true even when checklists are designed, like the SSSRS, to pinpoint behaviors within specific activities such as large group instruction or independent seat work. Another factor that may have affected the lack of consistency of the teacher rating results is that preschool teachers rated the students the first year while kindergarten teachers did the ratings during the follow-up year. Beckoff and Bender (1989) and Hains et al. (1989) both found considerable differences between the ratings of kindergarten and preschool teachers on the importance of skills necessary for entrance into kindergarten.

Limitations

Several limitations of the study need to be noted. First, the study was conducted with only one class of preschoolers in each experimental group which limits the generalizability of the results. This is especially true when attempting to generalize specific levels of

variables or discrepancies between preschool classes and kindergarten classes.

A second limitation concerns the inconsistency of the results between the direct observation data and the teacher rating scale data. A number of factors may account for this lack of agreement. First, follow-up ratings were done in October of the childrens' kindergarten year. It might have been better to conduct ratings later in the year, perhaps near the end of collecting direct observation data in December. Teachers ratings may have changed based on having worked with the students for a longer period of time. Secondly, previous research (Walter & Vincent, 1982) has also found differences in direct observation data which were not reflected in teacher ratings.

A third limitation may be the questionable adequacy of using two index children to develop templates of the kindergarten environments. While Hoier and colleagues (1987) found observations across two children to be stable and valid, further investigation of this issue is warranted.

Finally, the largest limitation lies with the time and labor intensity required to develop templates and to

assess intervention effectiveness. Direct observation is typically time and labor intensive but, the extended 1 to 2 hour observations across multiple days for each student make this method impractical for widespread use by individual teachers.

Two solutions seem plausible. The use of locally developed norms for school districts or regions may prove useful. Further research is necessary to determine whether discrepancies between preschool and kindergarten children are consistent across types of programs, districts, regions or states. Comparison of this study's data with studies conducted by Carta and colleagues at Juniper Gardens Childrens Project suggest some levels of variables are consistent. For example, the low levels of teacher prompts and feedback in kindergarten during independent seatwork and the amount of time spent in transition activities in preschool are consistent with those found in Kansas (Carta et al., 1990).

The second solution may be to find effective ways to limit the scope of the observations required to identify targets for intervention. This could be done

by either limiting the times targeted for observation or by using only one observation code rather than both ACCESS and ESCAPE. In this study, at follow-up the ACCESS code provided the most useful information as it was directly designed to observe independent seat work which was the targeted activity in the intervention. In addition, ACCESS observations could have been restricted to only independent seat work times rather than including transition and group instruction times as post-assessment and follow-up. These changes would have reduced the number of hours required for observation at post-test and drastically reduced those required at follow-up.

Implications for Practice

The results of this study have a number of implications for practice. Certainly, those persons responsible for facilitating transitions from preschool to kindergarten for students with special needs will want to consider objectively defining the criteria of the next environment. Direct observation of receiving kindergarten classes by preschool teachers has been recommended in the past (Rosenkoetter & Fowler, 1986; Rule et al., 1990) and should continue to be considered

an important component of transition planning. Direct observation and template matching allow for clear assessment of discrepancies between preschool and kindergarten environments.

This study also highlights the importance and feasibility of developing and implementing specific and detailed transition plans within the preschool environment. Targeting specific types of environmental and instructional arrangements may continue to prove an effective means of providing preschool students who may be at-risk for school failure with practice in critical skills before entering regular education kindergarten. The simplicity of the intervention, engaging children in independent art and writing activities, enabled staff to implement it easily and to maintain high levels of intervention integrity. Finally, practitioners may want to consider the readiness model proposed by Hoier et al. (1987) and attempt to identify kindergarten placements where the target child's current performance approximates expected levels of performance.

Implications for Future Research

Future research should focus on the application of

template matching procedures to other transition times in childrens' or adults' lives. Possibilities include transitions to first grade, middle or high school, and work environments. Additionally, reseachers should attempt to find ways to streamline direct observations necessary to complete the template matching process to increase its usefulness in the field.

Investigations of the differences in templates developed by direct observation of successful individuals and those developed from staff tolerance ratings should be examined as recommended by Barnett and Macmann (1992). Two important questions to be answered are: (a) Will templates developed from these different sources result in the identification of similar targets for intervention (decision reliability)? and (b) Which type of template development results in greater treatment utility?

The discrepancies between kindergarten and preschool teachers' ratings and between teacher ratings and direct observation of behaviors also need to be addressed. While teacher reports are more efficient in terms of time and labor intensity, it is important to develop teacher report tools which accurately reflect behaviors

exhibited in the classroom. Conversely, researchers need to continue to attempt to pinpoint behaviors that are critical for classroom success.

Finally, more interventions targeting the criteria of the next educational environment need to be evaluated to increase the generalizability of these results. Comparisons of interventions targeting environmental variables versus child-centered variables may prove useful in increasing the efficiency of developing and implementing effective transition plans. Further research into the effectiveness of preschool interventions on kindergarten performance and placement also needs to be conducted.

Conclusions

In conclusion, template matching has been shown to be an effective means of assessing the differences between preschool and kindergarten environments. These differences can result in the identification of specific interventions designed to facilitate the successful transition of preschool children with special needs into regular education kindergarten classes. Continued attention from researchers and practitioners to the

development of effective transition plans for all periods of educational transition should clearly be a high priority.

References

- Atwater, J. B., Carta, J. J., & Schwartz, I. (1989). ACCESS Observation System. Unpublished research draft. Kansas City, KS: Juniper Gardens Children's Project.
- Barnett, D. W., & Macmann, G. M. (1992). Decision reliability and validity: Contributions and limitations of alternative assessment strategies. The Journal of Special Education, 25, 431-452.
- Beckoff, A. G., & Bender, W. N. (1989). Programming for mainstream kindergarten success in preschool: Teacher's perceptions of necessary prerequisite skills. Journal of Early Intervention, 13, 269-280.
- Bem, D. J., & Lord, C. G. (1979). Template matching: A proposal for probing the ecological validity of experimental settings in social psychology. Journal of Personality and Social Psychology, 37, 833-846.

- Carta, J.J., Atwater, J. B., Schwartz, I. S., & Miller, P. A. (1990). Applications of ecobehavioral analysis to the study of transitions across early education settings. Education and Treatment of Children, 13, 298-315.
- Carta, J. J., Greenwood, C. R., & Atwater, J. B. (1985). Eco-behavioral system for complex assessments of preschool environments. Research draft. Kansas City, KS: Juniper Gardens Children's Project.
- Carta, J. J., Greenwood, C. R., & Atwater, J. B. (1990). [Developing normative data on kindergarten survival skills]. Unpublished study in progress.
- Carta, J. J., Sainato, D. M., & Greenwood, C. R. (1988). Advances in the ecological assessment of classroom instruction of young children with handicaps. In S. L. Odom & M. V. Karnes (Eds.), Early intervention for infants and children with handicaps (pp. 217-239). Baltimore: Paul H. Brookes.

- Cone, J. D., Bourland, G., & Wood-Shuman, S. (1986).
Template matching: An objective approach to placing
clients in appropriate residential services. The
Journal of the Association for Persons with Severe
Handicaps, 11, 110-117.
- Cone, J. D. (1987). Intervention planning using
adaptive behavior instruments. The Journal of
Special Education, 21, 127-148.
- Conn-Powers, M. C., Ross-Allen, J., & Holburn, S.
(1990). Transition of young children into the
elementary education mainstream. Topics in Early
Childhood Special Education, 9(4), 91-105.
- Cooper, D. H., & Farran, D. C. (1988). Behavioral
risk factors in kindergarten. Early Childhood
Research Quarterly, 3, 1-19.
- Cooper, D. H., & Speece, D. L. (1990). Maintaining at-
risk children in regular education settings:
Initial effects of individual differences in
classroom environments. Exceptional Children,
57, 117-126.

- Diamond, K. E., Spiegel-McGill, P., & Hanrahan, P. (1988). Planning for school transition: An ecological-developmental approach. Journal of the Division for Early Childhood, 12, 245-252.
- Fowler, S. A. (1980). Transition to public school. In K. E. Allen (Ed.), Mainstreaming in early childhood education (pp. 242-254). Albany, NY: Delmar.
- Fowler, S. A. (1982). Transition from preschool to kindergarten for children with special needs. In K. E. Allen & E. M. Goetz (Eds.), Early childhood education: Special problems, special solutions (pp. 309-335). Rockville, MD: Aspen.
- Fowler, S. A. (1988). Promising programs: Transition planning. Teaching Exceptional Children, 63, 62-63.
- Greenwood, C. R., Carta, J. J., & Atwater, J. B. (1991). Ecobehavioral analysis in the classroom: Review and implications. Journal of Behavioral Education, 1, 59-77.

- Greenwood, C. R., Delquadri, J. C., Stanley, S. O., Terry B., & Hall, R. V. (1985). Assessment of eco-behavioral interaction in school settings. Behavioral Assessment, 7, 331-347.
- Hains, A. H., Fowler, S. A., Schwartz, I. S., Kottwitz, E., & Rosenkoetter, S. (1989). A comparison of preschool and kindergarten teacher expectations for school readiness. Early Childhood Research Quarterly, 4, 75-88.
- Hoier, T. S., McConnell, S., & Pallay, A. G. (1987). Observational assessment for planning and evaluating educational transitions: An initial analysis of template matching. Behavioral Assessment, 9, 5-19.
- Huntinger, P. L. (1981). Transition practices for handicapped young children: What the experts say. Journal of the Division of Early Childhood, 2, 8-14.
- Karnes, M., Schwedel, A., Lewes, G., Ratts, D., & Esry, R. (1981). Impact on early programming for the handicapped: A follow-up study in the elementary school. Journal of the Division of Early Childhood, 5, 62-79.

- Odom, S. L., Peterson, C., McConnell, S., & Ostrosky, M. (1990). Ecobehavioral analysis of early education/specialized classroom settings and peer social interaction. Education and Treatment of Children, 13, 316-330.
- Odom, S. L., & Warren, S. F. (1988). Early childhood special education in the year 2000. Journal of the Division for Early Childhood, 12, 263-273.
- Polloway, E. A. (1987). Transition services for early age individuals with mild mental retardation. In R.N. Ianacone & R.A. Stodden (Eds.), Transition Issues and Directions (pp. 9-24). Reston, VA: The Council for Exceptional Children.
- Rosenkoetter, S. E., & Fowler, S. A. (1986). Teaching mainstreamed children to manage daily transitions. Teaching Exceptional Children, 19, 20-23.
- Rule, S., Fiechtl, B. J., & Innocenti, M. S. (1990). Preparation for transition to mainstreamed post-preschool environments: Development of a survival skills curriculum. Topics in Early Childhood Special Education, 9(4), 78-90.

- Sainato, D. M. (1990). Classroom transitions: Organizing environments to promote independent performance in preschool children with disabilities. Education and Treatment of Children, 13, 288-297.
- Sainato, D. M., & Lyon, S. (1983). Classroom Survival Skills Checklist. Pittsburgh, PA: Early Childhood Research Institute, University of Pittsburgh.
- Sainato, D. M., & Lyon, S. R. (1989). Promoting successful mainstreaming transitions for handicapped preschool children. Journal of Early Intervention, 13, 305-314.
- Sainato, D. M., Strain, P. S., & Lyon, S. R. (1987). Increasing academic responding of handicapped preschool children during group instruction. Journal of the Division for Early Childhood, 12, 23-30.
- Shapiro, S. (1975). Preschool ecology: A study of three environmental variables. Reading Improvement, 12, 236-241.

- Simner, M. L. (1983). The warning signs of school failure: An updated profile of the at-risk kindergarten child. Topics in Early Childhood Special Education, 3(3), 17-27.
- Vincent, L. J., Salisbury, C., Walter, G., Brown, P., Gruenewald, L. J., & Powers, M. (1980). Program evaluation and curriculum development in early childhood/special education: Criteria of the next environment. In W. Sailor, B. Wilcox, & L. Brown (Eds.), Methods of instruction for severely handicapped students, Baltimore: Paul Brooks.
- Walker, H. M., & Rankin, R. (1983). Assessing the behavioral expectations and demands of less restrictive settings. School Psychology Review, 12, 274-284.
- Walter, G., & Vincent, L. (1982). The handicapped child in the regular classroom. Journal of the Division for Early Childhood, 6, 84-95.

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88-91, ESCAPE

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Appendix B

ACCESS

Summary of Activity and Behavior Codes

Activity

Focus of Teacher Behavior

GI	Group instruction	T	Target
IS	Independent seatwork	G	Group
TR	Transition		
O	Other		

Prompts

Response to Prompts

P	Physical	+	Compliance
V	Verbal	/	Response pre-emption
Q	Question	-	Noncompliance
E	Environmental	CT	Can't tell
I	Indirect		

Feedback

Child Engagement

A	Approval	Act	Active engagement
D	Disapproval	Tsk	Task management
C	Corrective feedback	Att	Attention
		Com	Competing behavior
		NW	Waiting
		N	No engagement
		Out	Out of area

Asking for Assistance

Ask

Appendix B, cont.

ACCESS

Summary of Ecological Codes

GROUP INSTRUCTION

LO Location

T Table
C Chair
M Mat
F Floor
O Other

GR Group Size

S Small (2-4)
M Medium (5-9)
L Large (10+)

CN Content

La Language skills
Ma Mathematics
Cg Cognitive skills
Sc Science
So Social studies
Da Daily living
Ar Art
Mu Music, dance
St Story
Op Opening
Sa Self-assessment
O Other

MA Materials

V Visual
M Manipulative
O Other
N None

INDEPENDENT SEATWORK

SA Seating

S Single
P Paired
M Multiple
O Other

TA Task

Wk Workbook/sheets
Bw Board work
Dr Drawing materials
El Electronic media
Ma Manipulatives
O Other

ML Material Location

At At desk
Aw Away from desk

TF Teaching Format

Cl Close supervision
Ge General supervision
Oc Occupied
O Other

Appendix B, cont.

GROUP INSTRUCTION

TF Teaching Format

Lc Lecture
Dr Instructional drill
Re Reading/story-telling
Td Task demonstration
Ti Task instruction
Ld Leading music
Ch Led by children
O Other

TRANSITION

CU Transition Cue

E Environmental
V Verbal
EV Environmental &
Verbal
O Other
N None

PA Participants

G Group
T Target Only

CS Clean-up/Set-up

Y Yes
N No

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95-97, JGCP SURVIVAL SKILLS RATING SCALE --
STUDENT BEHAVIOR RATINGS

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Appendix D
Independent Seat Work Intervention
Integrity Checklist

Date:

Class:

Start Time:

Stop Time:

1. Number of students seated at table(s) _____
2. Number of instructions given prior
to independent seatwork _____
3. Time students spend working _____
4. Number of target prompts during
seatwork _____
5. Number of group prompts during
seatwork _____

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99, Procedural Checklist -- Classroom Survival
Skills Independent Work -- Revised

University Microfilms International

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The use of template matching as a viable strategy for assessment and intervention for handicapped preschool students. Student initiated grant, Office of Special Education Grant #H023b00038, (Edward S. Shapiro, faculty mentor). August 1990 to December 1991.

Grant Related Experience

Research on the integration of students with severe emotional disturbance from Centennial: A state approved private school. Office of Special Education Grant (Diane Browder and Edward S. Shapiro, Co-Principal Investigators). Associate research scientist with primary responsibilities for overseeing grant implementation, organization of data collection, liaison with project sites, and data analysis. August 1988 - August 1991.

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Publications

- Ager, C. L., & Browder, D. (1991). Assessment of integration and generalization. In D. Browder (Ed.) Assessment of Individuals with Severe Disabilities: An Applied Behavior Approach to Life Skills Assessment. Second Edition.
- Ager, C. L., & Cole, C. (1991). A review of cognitive-behavioral interventions for children and adolescents with behavior disorders. Behavioral Disorders, 16, 276-287.
- Bambara, L., & Ager, C. L. (1992). Using self-scheduling to promote self-directed leisure activities. The Journal of The Association of Persons with Severe Handicaps.
- Shapiro, E. S., & Ager, C. L. (1992). Assessment of special education students in regular education programs: Linking assessment to instruction. Elementary School Journal, 92, 283-296.
- Shapiro, E. S., Albright, T. S., & Ager, C. L. (1986). Group versus individual contingencies in modifying two disruptive adolescents' behavior. Professional School Psychology, 1, 105-116.
- Zirkel, P. A., & Ager, C. L. (1986). Moment of silence laws after Wallace v. Jaffree: Are they constitutional? Education Law Reporter, 29, 927-938.

Works in Progress

- Ager, C. L., & Newcomer, P. Educational Therapies. In Newcomer, P. Educating Students with Emotional Disorders. 2nd Edition. Manuscript in progress.
- Ager, C. L., Shapiro, E. S., & Browder, D. The results of a statewide survey to assess the feasibility and obstacles to educating students with severe emotional disturbance in their home school. Manuscript in progress.

Bambara, L., & Ager, C. L. Effects of choice on the vocational performance of adults with severe handicaps. Manuscript in progress.

Browder, D., Ager, C. L., & Shapiro, E. S. Integration of students with severe behavior disorders: A research review. Manuscript in progress.

VI. Conference Presentations

Bambara, L., Ager, C. L., & Kroeger, F. (December, 1991). Effects of choice in residential settings. 18th Annual Conference of the Association for Persons with Severe Handicaps, Washington, D.C.

Bambara, L., Ager, C. L., & Browder, D. (December, 1990). Thank you but I'd rather decide for myself: Applications of self-management in the home. 17th Annual Conference of the Association for Persons with Severe Handicaps, Chicago, IL.

Browder, D., Bellfiore, P., & Ager, C. L. (December, 1989). Integration of adolescents and adults with severe behavior problems and social skills deficits: Teacher planning strategies. 16th Annual Conference of the Association for Persons with Severe Handicaps, San Francisco, CA.

Browder, D., Heller, M., West, F., Ager, C. L., & RaHS, J. (December, 1988). The integration of a private school for students with severe emotional disturbance. Panel presentation at the 15th Annual Conference of the Association for Persons with Severe Handicaps, Washington, D.C.

Ager, C. L., Boyer, M., & Hayes, W. (August, 1988). Working with community agencies for collaborative programming. Presented at the Fourth Biennial Conference of the American Re-Education Association, Cleveland, OH.

Ager, C. L., Boyer, M., & Hayes, W. (August, 1988). Mainstreaming the elementary student: Issues and answers. Presented at the Fourth Biennial Conference of the American Re-Education

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