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ABSTRACT

The paper is a product of the 3-year project, "Functional Mainstreaming for Success," designed to develop a model for instructional mainstreaming of handicapped children (3-6 years old) in community settings. The model was implemented with three mainstreamed preschool classrooms in which half the children were handicapped. Large group, small group, and a minimal amount of one-to-one instruction is used as is increased structure within the curriculum. The rationale for emphasizing group rather than the traditional individual curriculum in a combined comprehensive delivery system is discussed. Guidelines for developing effective groups include assessing all children, establishing individualized education programs for handicapped students, developing a core curriculum, planning integrated groups, and structuring one-to-one sessions. Preliminary evaluation results indicated handicapped children participated significantly in mainstream activities while achieving at the same or better levels than they did in earlier self-contained classes. Parent and staff reactions to the reverse mainstreaming program were positive. (DB)

A Model for Integrated Preschool Classroom Service Delivery

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Running Head: A MODEL FOR INTEGRATED CLASSROOMS

A Model for Integrated Preschool Classroom Service Delivery

The integration of preschool children who have handicaps into community preschools has been a major focus of early intervention programs in recent years (Guralnick, 1983; Striefel & Killoran, 1984a, 1984b; Weisenstein & Pelz, 1986). Integration attempts have ranged from placing children in physical proximity with non-handicapped peers, to full-time placement of children with severe handicaps into normal daycare (Rule, Killoran, Stowitschek, Innocenti, Striefel, & Boswell, 1985; Guralnick, 1983). The importance of providing early intervention in least restrictive settings for children who have handicaps was emphasized by the passage of P.L. 99-457, the extension of P.L.94-142 to the age of three (Congressional Records, 1986) which mandates least restrictive services; and by the committment demonstrated by the Office of Special Education and Rehabilitative Services in prioritizing early childhood intervention and least restrictive environments as their number one goal (Bellamy, 1986).

Integration can appear difficult to achieve because children who have handicaps often require greater numbers of trials in order to learn a skill, smaller groups or individual attention during training, and procedures for specifically generalizing learned skills across different settings and trainers (Stokes & Baer, 1977; Brown, Nisbet, Ford, Sweet, Shiraga, York, & Loomis, 1983). Traditional teaching techniques used in normal preschool programs often lack the intensity and systematic components needed to teach a child who has handicaps (Dewulf, Stowitschek & Biery, 1986). These components: assessment, individualization, and progress monitoring, have

been demonstrated to increase the effectiveness of instruction. Teachers, themselves, report their perceived lack of preparation and training for teaching children with handicaps (Stainback & Stainback, 1983). An innovative, alternate model of service delivery is needed which accommodates training to meet an individual child's needs, while still addressing the needs of the group.

Service Delivery Philosoph

The Functional Mainstreaming for Success (FMS) Project (Striefel & Killoran, 1984b) has developed a model for preschool mainstreaming which is committed to the philosophy of providing services in totally integrated settings to preschoolers with handicaps. This philosophy is based on the premise that adults with handicaps who are expected to function within, and contribute to, normal community settings, must learn as children to function within normal environments (Donder & York, 1986). However, exposure to a normal environment alone will not guarantee successful interaction in that environment (Brown, Bronston, Hamre-Nietupski, Johnson, Wilcox, & Grunewald, 1979; Gresham, 1981). Integration must go beyond physical integration, to the incorporation of instructional and social integration as major goals of a program (Nash & Boileau, 1980; Striefel & Killoran, 1984a; Striefel & Killoran, 1984b; Zigmond & Sansone, 1981).

The FMS model was implemented with 11 children with handicaps and 16 children without handicaps, ages 3 to 5, in 2 classrooms. The classrooms are non-categorical; i.e., children with mild to severe handicaps and children without handicaps attend classes together with nonhandicapped peers. In the three mainstreamed classrooms, 1/2 of the children have handicaps and 1/2 of

the children do not have handicaps. Children attend preschool daily for 2 1/2 hours per day, and are taught in large and small groups. Service goals for children with handicaps are addressed in these groups, unless a child's progress indicates that he/she needs one-to-one intervention. One-to-one sessions are kept at an absolute minimum, so that the child can still participate in other activities where language, social, and group attending skills can be developed and practiced. Through this combined use of traditional group curriculum, novel individualized curriculum, and increased structure within curricula, all children are effectively educated. The rationale, implementation, and preliminary effectiveness data of the FMS model will be discussed.

Rationale

Group Vs. Traditional Individual Curricula

The FMS Model was designed to incorporate the strengths of traditional group and individualized (one-to-one) teaching methods. Each method is described below.

Group Curricula.

Simply stated, curricula are a systematic arrangement of time, procedures, materials, and tasks (Findlay, Miller, Pegram, Richey, Sanford, Schmran, 1976). In group curriculum, this arrangement is based on addressing the common characteristics and needs of more than one student at a time (Findlay, et al, 1976), and usually incorporates skills that are developmentally sequenced, and are taught through instructional exploration of the environment; however, children with handicaps are particularly poor at learning incidentally and generalizing any such learning to other

situations (Stokes & Baer, 1977). In a traditional preschool program, individualized instructional objectives are usually not established (Curry-O'Connell, 1986). Group curricula traditionally follow a unit or theme concept, in which the units or themes are planned for a weekly, bi-weekly, or monthly basis. Units are usually non-operationalized concepts, such as animals, holidays, or transportation. Child progress monitoring, when it occurs, is usually confined to pre-post testing on standardized norm-referenced assessments or anecdotal recordings. Advantages of group instruction include the efficiency of teaching many children at once, and opportunities for children to learn through child/child interaction and exploration (Winderstrom, 1986). Unfortunately, specific child deficits are rarely identified and remediated, and when identification does occur, it is usually in the area of behavioral deficits. If developmental delays or significant skill deficits are suspected or identified, the child is usually referred elsewhere for remediation, rather than receiving intervention in the regular preschool placement.

Traditional Individualized Curricula.

In contrast, traditional individualized curriculum, a common characteristic of special education programs, focuses on meeting the needs of an individual child, rather than on meeting needs of a group. Interventions are developed for a particular child and are implemented in small groups or one-to-one instruction, usually in self-contained classrooms. An advantage of traditional individualized curriculum is that it can accommodate behavioral teaching techniques which have been demonstrated to be effective when teaching children who have handicaps

(Greer, Anderson, & Odell, 1984). These techniques include, but are not limited to:

a. Individualized, criterion-referenced assessment to identify a child's strengths and deficits.

b. Individualized program development which prioritizes a child's needs and develops goals and objectives to systematically teach a child.

c. One-to-one instruction, using discrete trial training in self-contained settings.

d. Frequent progress monitoring of the child's skill acquisition.

e. Revision of the teaching program based on the child's progress in mastery of the skill being taught.

Unfortunately, traditional individualized curricula may actually be self-defeating to the process of integration. The emphasis on one-to-one and small group instruction in the special setting of a self-contained class can hinder the student's generalization and transfer of skills to settings other than those in which they are trained (Brown, et al, 1983). Furthermore, the specificity of traditional instruction and discrete-trial programming can train a child to respond appropriately to a limited number of stimuli with a limited number of responses that often do not occur in the natural environment. Typically, this training approach is not ecologically valid; that is, training activities and procedures are "low on the naturalness continuum" (Fey, 1986, p.203). Traditional individualized instruction allows the student to be successful in the special education setting; however, when the school setting is restricted to a segregated self-

contained classroom, such instruction actually increases the child's dependency on special education, limits interaction in the community, and prohibits social interactions between children with and without handicaps (Widerstrom, 1986).

Combining the Advantages of Group and Traditional Individualized Curricula into a Comprehensive Model of Service Delivery

In order to optimize the acquisition of skills by students in integrated settings, the strengths of group and individualized curriculum must be merged. At first appearance, it may seem that group and individualized curricula are mutually exclusive within a single setting; however, with careful planning and individualization within group activities, this merger is readily accomplished. Effective grouping in integrated preschools is a process which evolves as children progress and change. The groups which are established today, may not be useful in a month's time since the rate of skill acquisition in preschools is so variable. Likewise, effective grouping for cognitive skills need not be the same group of children who are effectively grouped for self-help skills.

Implementation

Grouping Students for Effective Instruction

The FMS model uses various groupings for training students who have handicaps within the integrated classroom described previously. Learning takes place in both large and small groups. General concepts and classwork organizational and social activities are presented in large groups. Small groups are used to facilitate specific skill development and acquisition. If a child does not progress adequately in a particular skill area in group

instruction, the child is moved to one-to-one instruction in that one skill area, while remaining mainstreamed in other skill areas where progress is occurring.

Large Group Instruction. In large group instruction, all children work on similar activities using similar materials and methods within the group. Examples include opening circle, when calendar, names, and other general concepts are taught. Children with handicaps may be taught incidentally and through direct instruction. However, instruction for children who have handicaps is individualized as needed within the large group. Data are collected through unobtrusive tests and probes, usually on a weekly basis. Large group instruction is usually used for opening circle, sharing, social time, snack and gross motor development.

Small Group Instruction. Children with handicaps are taught specific skills identified on their IEP in integrated individualized small groups of 2 to 6, in which nonhandicapped children also share learning experiences appropriate for their skill levels. Occasionally, limited discrete trial training is utilized for children with handicaps within the group. Data are collected on a regular basis, by rotating the children on whom data are collected from day to day. Fewer trials are sampled than during one-to-one instruction, but enough information is still provided to make decisions on child progress. Skills taught in small groups include cognitive, fine motor, receptive and expressive language, pre-academic, social, and self-help skills.

One-to-One Instruction. One-to-one instruction is used for children who make insufficient progress on IEP goals and objectives in large or small

groups; when a child's skill deficit is so severe that there is no other child with whom he/she may be grouped; or when therapy may be embarrassing or intrusive if delivered in a group setting (e.g. toileting). During one-to-one instruction, programming usually follows a discrete trial training format utilizing specific stimuli, requiring specific child responses, consequating behaviors with reinforcement and correction procedures, and monitoring continuous child progress. One-to-one instruction incorporates the behavioral teaching techniques which have been previously described.

Incidental Teaching

Incidental teaching refers to the teaching of skills to the child during the times of the day when that skill naturally occurs (Hart & Risley, 1975). Since incidental teaching utilizes materials naturally occurring in the environment, and as much as possible relies upon naturally occurring reinforcement, it is has been found highly successful to teach various skills to preschool children (Striefel & Killoran, 1987).

Developing Effective Groups

The following guidelines have been used successfully by the classrooms implementing the FMS model to determine effective grouping in integrated preschools.

Assess all children. Children with handicaps usually have been assessed on developmental or psycho-educational batteries. If a child has not been assessed, it is recommended that a criterion-referenced test, such as the Brigance Diagnostic Inventory of Early Development (Brigance, 1978) be used as a general skills assessment. Children without handicaps should

be similarly assessed, particularly in programs in which the nonhandicapped students are widely diverse in ages and skill levels.

Review or establish existing individual education programs for students with handicaps. The individual objectives for each student should be listed and prioritized. It is critical to prioritize objectives to assure that a realistic number of skills can be addressed. The prioritized objectives for each child with handicaps must be coded as (L), able to be addressed in a large group (7-16) with incidental teaching and probe data; (S), not able to be addressed with sufficient intensity in a large group, but able to be addressed in small groups, (2 - 6), and monitored with regular but flexible data collection; or (O) critical deficit area which demands one-to-one, discrete trial-training. All objectives, whether coded large groups (L), small groups (S), or one-to-one (O), are individualized for student training.

Surveying the skills of nonhandicapped children. The skill needs of nonhandicapped students should be clustered by areas to allow effective grouping (i.e., alphabet, numbers, etc.). Individual need areas should also be identified for each child, so that the skill can be addressed within small groups. In the FMS classes, children without handicaps are not removed from groups for one-to-one sessions, since these sessions are reserved for children with severe learning deficits within groups. However, a program could and should do so, if funding permits.

Selecting or developing a core curriculum. This curriculum should be based on an age-appropriate sequence of developmental goals. Many excellent

program ideas are available commercially, and modifications to meet specific needs can be adapted for specific children.

Organizing the daily schedule. After identifying the general groups that are needed in order to address children's needs, the day's schedule should be planned to accommodate various learning centers. The FMS model includes at least two periods each day where 2 to 3 learning centers (small groups) are planned. Children rotate from one group to another at 15-minute intervals. The groups typically address different skills (e.g., one may be cognitive matching skills, another may be a fine motor art activity, and another may be role-playing social skills). Teachers report that the variety of groups allows them to address many different skill areas every day. Also, the make-up of the groups can be recombined for different activities.

Plannning integrated groups. It is important that groups be composed of both children with and without handicaps. Children within a group need not all be at the same skill or need level for a group to be successful (Johnson & Johnson, 1981). A child who is matching alphabet letters can be grouped with children who are learning to identify letters, and on that child's turn he or she can be taught matching instead of letter recognition.

Structure one-to-one sessions. Objectives marked "O" must be addressed by individual adults working with individual children. These sessions, which are usually no longer than 10 minutes in length, should be planned for times when the target child is not scheduled to participate in a large or small group activity in which other priority objectives are being addressed. Aides, volunteers and/or parents will need to be trained by the teacher or

another specialist, to conduct these sessions and collect data. Additionally, these sessions must be monitored at least once per week by a qualified professional. The FMS model utilizes a consultant-based system to provide related services to children who have handicaps (Striefel & Cadez, 1983). In this consultant model, the therapist (i.e., speech & language pathologist, physical therapist , occupational therapist) assesses the child who has been referred, develops goals and objectives for that child, provides the teacher with written programs and activities to remediate the deficits, trains a teacher or paraprofessional to implement that activity or program, and monitors the child's progress periodically throughout training.

Program Effectiveness

Preliminary field testing suggests that the FMS model is effective in providing a quality integrated program to preschoolers,their parents and teachers.

Effectiveness with Children

Preliminary results from 2 model classrooms indicate that most children with handicaps participated significantly in mainstream activities, while achieving at the same, or better levels than they did in self-contained classes. Children with communicative disorders participated successfully in regular preschool activities for an average of 86% of the day. Children with intellectual handicaps (mild retardation), participated in regular activities for an average of 84%. Children with severe intellectual handicaps (moderate retardation) participated for an average of 85%. Children with severe multiple handicaps which

included two children with autism, participated for an average of 83%, and one of the children with autism wasfully integrated into kindergarten with resource room support. Finally, children with behavioral disorders participated for an average of 96%.

Insert Table 1 About Here

The progress of eleven children was monitored over 12 months, during which each child was in a self-contained program for 6 months, followed by participation in the FMS Mainstramed Classroom for the next 6 months. The same IEP was in effect for each child throughout the 12-month period. As shown in Table 1, children with intellectual handicaps (IH) achieved more objectives in the mainstreamed classes with about 1/5 as many one-to-one sessions than in the self-contained classroom, where microsessions were more frequent. Children with communication, behavior, and orthopedic handicaps (CD, BD, OH) achieved at the same rate in both settings; but the need for microsessions was very significantly lower in mainstreamed classes. Two children with severe intellectual and severe multiple handicaps decreased in achievement in the mainstreamed classroom; however, their rates of achievement remained comparable to rates of achievement of their non-mainstreamed peers who served as control comparison subjects. Also, the dramatic reduction in microsessions may have been too great for these children. In summary, the majority of children in the sample achieved at the same or a higher rate in the mainstreamed classroom, while the need for adults to conduct one-to-one sessions was markedly reduced.

Effectiveness with Parents.

Reactions from parents of children with and without handicaps were obtained through a Likert-type Parent Satisfaction Questionnaire. Parents were asked to respond to five questions indicating the quality of service that they perceive that their child received; one question about their desire to continue in the program, and to six open-ended questions about reactions to working in the classroom, the strengths and difficulties with the program, recommended changes, and any other concerns or observations. Parents listed strengths such as their child's ability to learn from peers, low teacher: child ratio, creative curriculum and personalized programming. Concerns reported prior to mainstreaming (too little attention, learning inappropriate behavior from classmates, etc.) did not materialize.

Effectiveness with Staff.

Feedback on staff satisfaction was also obtained from participating staff at quarterly intervals. Each of the staff in the FMS mainstream classrooms were asked to respond to eight questions indicating how much they agreed or disagreed with each statement. Overall, reactions to the FMS Reverse Mainstreaming classroom were extremely positive from all teachers. The particular strengths of the FMS Model noted by staff included the opportunities to group children for language and social development and for children to learn to attend and work in groups. The difficulties noted with the Reverse Mainstreaming approach were the large amount of work to be done in such little time (summer session was particularly short), lack of materials (due to agency budget restrictions), and the need to train college students and some classroom aides to conduct the specific activities

(particularly behavior management). Recommendations for future activities which have been incorporated included screening children without handicaps before entry into the program, organizing class lists and materials at least two weeks before the program begins, and alloting teacher time for paperwork imposed by the model.

Summary

The evaluation of the FMS model is on-going. Many more children will be used in a full evaluation spanning a year's time, and contrasting 3 mainstreamed classes with 2 self-contained classes staffed by the same teachers and specialists. However, preliminary findings reported in this paper indicate that a fully integrated program can be a reality which results in benefits that far outweigh sole reliance upon self-contained programs to serve preschoolers with handicaps.

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Table 1

% Objectives Achieved in Each Placement and Corresponding Number of One-to-one Sessions

Handicapping Condition	$\bar{X}$ % Objectives Achieved			$\bar{X}$ Number One-to-One Sessions Per Week		
	Self-Contained	Main-streamed	% Diff.	Self-Contained	Main-streamed	Diff.
IH (n=4)	36.5 Range = (26-44)	40.8 (33-58)	+4.3	35.3	7.5 (2-16)	-27.8
CD/BD/OH (n=5)	61.4 (43-81)	61.4 (50-72)	0	32	4.6 (0-11)	-27.4
*SIH (n=1)	47	33	-14	38	6	-32
**SMH-A (n=1)	41	22	-19	28	11	-17

* Note: $\bar{X}$ achievement for a comparable sample of self-contained SIH children (n=6) wss 39%

** Note: $\bar{X}$ achievement for a comparable sample of self-contained SMH children (n=3) was 27%