

FOCUS ON EXCEPTIONAL CHILDREN

Evaluation of Mainstreaming Programs

Donald L. MacMillan and Melvyn I. Semmel

Beginning in the 1960s a sequence of events resulted in the increasing trend away from educating handicapped learners in special classes and toward integrating handicapped learners into regular classes for the majority of their school day. In the 1970s momentum for integration increased as a result of court decisions (e.g., *Diana v. State Board of Education*) mandating the return of certain handicapped learners to general education. These court decisions were followed by legislative enactments in certain states which frequently provided for the return of handicapped learners to regular classrooms.

Recently, PL 94-142 was enacted at the national level and marks the culmination of efforts to promote regular class placement for handicapped learners. Today the battle cry in special education is for *mainstreaming*, and although there may be some serious impediments (see MacMillan, Jones, & Meyers, 1976), the question clearly is no longer *whether* to mainstream but rather *how* most effectively to mainstream.

One encounters in the literature a host of terms — some slogans without precise meaning, and others that are used loosely to mean various things. The term “mainstreaming” has come to be applied to any number of programs that only vaguely resemble one another — ranging from mere delabeling, to educational integration, to deinstitutionalization (Dailey, 1974). Mercer (1974) described mainstreaming as the

Dr. MacMillan is Professor of Education at the University of California-Riverside; Dr. Semmel is Professor of Education and Director, Center for Innovation in Teaching the Handicapped, Indiana University.

educational equivalent of *normalization*, the Scandinavian principle advocating life conditions for handicapped persons which approximate "normal" as closely as possible in light of the individual's limitations. Applied to education, this principle has meant to many the placement of handicapped learners into regular classes unless the individual's limitations are so compelling that a more protective or restricted placement is necessitated.

Court cases and PL 94-142 include the term "least restrictive environment" (LRE) in lieu of mainstreaming, probably feeling it has a more explicit meaning (Semmel & Heinmiller, 1977). Beyond the clear belief that the regular class is preferred to any other educational alternative, an operational definition of the least restrictive environment has yet to be provided. However, what is clear now is that evidence must be provided to justify placement of a handicapped learner in any alternative other than the regular class.

THE IMPETUS: POLITICAL OR EVIDENTIARY?

The trend away from special classes and the move toward integration parallels closely the civil rights cases pertaining to racial desegregation. Court cases have highlighted what special educators knew for some time — that the identification process for mildly retarded (EMR) children resulted in disproportionately high numbers of ethnic minority children in special classes and that the

EMR label was objectionable to the children so labeled. Further, special classes did not result in the achievement gains originally anticipated. Special education (at least that associated with the education of mildly retarded children) was cast in an extremely unfavorable light, and those implicated in the process of identifying children as EMR (e.g., school psychologists) were similarly condemned for their role in the labeling process.

Special educators' sentiment against the special class was supported by the publication of Dunn's (1968) influential paper. Yet, it was unlikely that change could be brought about rapidly from within the educational system, and in extreme cases the educators actually prompted organizations to bring suit against them (see Burt's analysis of the P.A.R.C. case, 1975). In virtually every case brought to court charging violations of due process, the educators did not defend themselves, but instead were silent in their defense.

Briefly, consider the points raised by Cohen and DeYoung (1973) as major arguments in special education cases: (a) tests used to measure intelligence are inappropriate as they do not accurately measure learning abilities of the plaintiffs; (b) unless the tester is familiar with the cultural background and language of the child, he functions incompetently; (c) parents have not been informed and involved in the placement process; (d) the special class is inadequate and fails to develop adequate educational and vocational skills; and (e) placement and labeling do irreparable personal harm.

These five allegations have been made repeatedly in court cases while the existing evidence on four of these points fails to support the allegations. Reviews by Cleary, Humphreys, Kendrick, and Wesman (1975) regarding appropriateness of tests; the reviews by Sattler (1973) and Meyers, Sundstrom, and Yoshida (1974) regarding "incompetent" test administration; those of Guskin and Spicker (1968) and MacMillan (1971) on the adequacy of the special class; and the review of MacMillan, Jones, and Aloia (1974) pertaining to the effects of labeling and placement consider the research evidence on the various allegations and serve to challenge the plaintiff's charges.

From a research perspective, the allegations made in these court cases, with the exception of that pertaining to parental involvement, have simply not been answered. Unless those defending themselves were unaware of the evidence, one is led to believe that defendants did not want to defend themselves — that they wanted the charges that would result from court decisions supporting the plaintiffs, since the evidentiary basis for the benefits that would accrue to the mainstreamed child is

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Executive and Editorial Office
6635 East Villanova Place
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lacking. Another way of viewing this issue is that while mainstreaming may not prove better than segregated EMR programs, it would in all likelihood prove to be no worse!

The disenchantment with self-contained special classes culminated as a result of several lines of reasoning that coalesced at about the same time and in a social climate that was receptive to the rights of the handicapped. Minority group children were overrepresented in special EMR programs, following legal fights over racial segregation slightly over a decade earlier. Research evidence, while often inconclusive, was interpreted as failing to substantiate the validity of special educational programming. One question, however, is not easily answered when reviewing the move away from special classes and toward mainstreaming — specifically, was the impetus behind mainstreaming political rather than evidentiary? In other words, were the court decisions that led to mainstreaming decided on the basis of law rather than evidence? If so, it is perplexing that so much “evidence” was introduced into those cases by the attorneys for the plaintiffs, albeit evidence that supported the allegations.

If the impetus behind mainstreaming is political or legal, then one might raise the question regarding the need for evaluation of mainstreaming in the sense of collecting evidence on outcomes of interest regarding the progress of handicapped children who are in the regular class. After all, if the violations of due process, segregation in special classes, and violations of dignity resulting from labeling are morally or legally wrong, then the abolition of those practices is an end in and of itself. Further evidence on the state of these children is unnecessary.

We do not present these two conflicting positions to suggest wrongdoing, but rather to question (1) the basis for the court decisions that led to mainstreaming, and (2) the need for sophisticated evaluation data pertaining to the educational state of children. Even if the courts used law as the basis for the decisions, we will assume here that there is, nevertheless, the professional concern for how children are affected by mainstreaming — hence, evaluation is necessary. Accordingly, we turn our attention to the definitional problem related to the mainstreaming movement in an attempt toward achieving a clarity and utility of the educational facets subsumed under the mainstreaming construct.

DEFINITION OF MAINSTREAMING

Apparently no consensus definition of mainstreaming

is held among educators. Therefore, it is impossible to establish what defining elements are necessary for a program to qualify as mainstreaming. In general terms, definitions offered to date fit one of two categories: (1) those which merely state something about desegregation and/or delabeling; and (2) those which feature some steps in which a child is assisted while in the regular education program. Probably the most widely cited definition is that offered by Kaufman, Gottlieb, Agard, and Kucic (1975):

Mainstreaming refers to the temporal, instructional, and social integration of eligible exceptional children with normal peers. It is based on an ongoing individually determined educational needs assessment, requiring clarification of responsibility for coordinated planning and programming by regular and special education administrative, instructional, and support personnel (pp. 40-41).

This definition contains three major components — integration, educational planning and programming, and clarification of responsibility. If all three elements must be present (particularly to the degree specified in the article) in order for a program to qualify as mainstreaming, then no program to date constitutes mainstreaming.

The Kaufman et al. definition presents the field with a number of problems. While these authors achieve a degree of clarity in their definition, they infer that the three facets are necessary defining features of mainstreaming programs. We are led to ask: How much and of what quality must a program reveal relative to these variables in order to qualify as “mainstreaming”? Further, the definition implies that all three characteristics must be present to qualify. The utility of such a stringent set of criteria appears limited inasmuch as most existing so-called mainstreaming efforts are limited to 50% or more time integrated in regular grades. In other words, from an evaluation point of view, it is not feasible to exclude programs which do not emphasize educational planning and programming and clarification of responsibility.

It may well turn out that levels of quality in all three components are necessary for effective mainstreaming programs. But, in the absence of such data, it appears in the best interest of definitional utility and clarity to focus on temporal integration as the necessary, albeit not sufficient, criterion and to indicate that temporal integration is simply a proxy for a wide variation in quality and quantity of educational variables.

In 1970 a series of legislative enactments resulted in programs to “transition” former EMR students into regular programs in the State of California. At the time, mainstreaming was heard as the descriptor for such tran-

sitional programs; yet, when a follow-up of the success of these children who had returned to regular classes (Meyers, MacMillan, & Yoshida, 1975) revealed some negative findings, it has been said that this was not mainstreaming. The point is that until a workable definition is constructed of the elements which must be present in order for a program to constitute mainstreaming, there is no way to begin to evaluate mainstreaming.

EVALUATION OF SPECIAL CLASSES: AN ILLUSTRATION

Problems With Between-Groups Designs

Efforts to evaluate the special class as an administrative arrangement for educating EMR children took the form of comparing children in an EMR special class with children of comparable IQ enrolled in a regular class (see Guskin & Spicker, 1968; Kirk, 1964; MacMillan, 1971, for reviews of this research). Typically, the mean achievement scores are compared and one administrative arrangement judged *superior* if the children in that program achieve at a level reliably higher than those of children enrolled in the alternative. Similar comparisons were made between the two groups on some aspect of adjustment.

Consideration of these efforts at determining the efficacy of the special class is instructive, and problems encountered can be avoided in evaluation of mainstreaming. Despite a host of methodological problems that render the results uninterpretable, these studies can serve to exemplify problems inherent in comparing one program (e.g., the self-contained class) to another (e.g., mainstreaming program). First, between-groups designs assume homogeneity within a given program (e.g., self-contained classes), which we know not to be the case (Kirk, 1964; Bruininks & Rynders, 1971). A variety of factors differentiate one special class from another or one mainstreaming program from another. For example, the curriculum may emphasize basic tool subjects to a greater or lesser degree; the ability of the teacher varies; the instructional materials and strategies differ. All these factors and others (e.g., class size, classroom climate) are capable of influencing the outcomes (such as academic achievement and some measure of social adjustment) commonly used to evaluate such programs.

In the efficacy studies, the self-contained special class differed from regular class placement in several global ways:

1. Class size was smaller.

2. The teacher of the EMR class received special training.
3. The curriculum emphasized social and vocational development to a greater degree.
4. The children were formally labeled EMR and physically segregated.
5. The modal ability level of class peers is lower than is the case in a regular class.

A gross comparison of mean scores of achievement or adjustment masks the elements of the special class which are related to the superior or inferior performance on one of the outcomes evaluated. For example, if the mean score on a standardized test of achievement is lower for special class EMR students, is it because of the lower pupil/teacher ratio, or is it due to the lack of emphasis in the curriculum on basic subjects tapped on the test of achievement? The between-groups design only allows you to say that the combination of factors which collectively constitute a regular class results in superior or inferior achievement when compared to the combination that constitutes a special class. Moreover, the subtle factors (e.g., how good a given special class teacher is) are probably more important than all the factors listed previously, and the effectiveness of the teacher varies considerably from one EMR class to another.

Implications for Evaluating Mainstreaming Programs

The efficacy studies have been subject to close scrutiny and generally have been found wanting. Nevertheless, some of the problems that plagued these earlier efforts at evaluation continue to pose problems for those undertaking to evaluate mainstreaming programs.

First, in his critique of the efficacy studies, Kirk (1964) observed that from study to study the meaning of "the special class" differed dramatically, making comparisons of results hazardous. Similarly, in mainstreaming programs the precise curricular and instructional components of what is called "mainstreaming" vary widely. In short, program diversity is the rule, not the exception, in mainstreaming (Guerin & Szatlocky, 1974; Jones, 1976a). Major differences were reported in terms of who was integrated, the amount of time they spent in the regular class, teaching strategies used, and support services made available (Guerin & Szatlocky, 1974).

In addition to differences in program characteristics, one must take into consideration the various types of children affected by any mainstreaming program (MacMillan et al., 1976). This suggests that different models be

adopted by different schools; however, PL 94-142 goes beyond that and provides for individualized educational plans (IEPs) for each child within a given model, thereby creating even greater diversity in program specifics.

In response to court mandates and the like, an obvious group of handicapped learners consists of those children who have been enrolled in educational programs for handicapped children who the courts have ruled must be returned to regular classes. These children had been in most cases segregated in special programs and as a result of the courts' decisions required to return to a regular class. The mainstreaming "program" will have to facilitate their return in terms of:

1. Remediating achievement lags, since the EMR curriculum delayed instruction in reading and math, thereby compounding the achievement gap that initially led to classification as EMR or LD.
2. Modifying behavior problems in some cases that were manageable in a class with a low teacher/pupil ratio and/or assisting the regular class teacher so that he or she can manage the behavior.
3. Enabling regular class teachers to accommodate a wider range of individual differences in their classes by providing them with needed instructional strategies and curricular goals appropriate for the formerly handicapped children.

Another population of children who are a focal point of mainstreaming programs consists for the most part of a younger group of children who were not identified as handicapped learners prior to the wave of court actions and legislation, but had they been in school during the earlier time frame would have been segregated (MacMillan et al., 1976). This population can probably be subdivided into two distinct subgroups:

1. Children who are identified as handicapped learners but, in keeping with provision for these needs in the least restrictive environment, will stay in the regular class. Presumably these children will avoid the stigmatization associated with the special class; however, the academic and/or behavior problems are no less a problem and must be provided for.
2. Children who before the changes in state guidelines and definitions (e.g., Grossman, 1973) would have been classified as handicapped learners but no longer qualify to receive special education services. These children are "normal" but exhibit learning and/or behavior problems in both nature and to the extent that in the past were considered beyond what could be tolerated in a regular classroom.

These more recent cohorts will not pose the same problems as those of the first group described. They have not been exposed to a "special" curriculum that delayed instruction on basic tool subjects. Instead, whatever achievement lags exist occurred despite exposure to the regular curriculum. Consideration probably should be given to the appropriateness of educational goals commonly available via the regular education curriculum.

Another group of children affected by mainstreaming are the regular class students into whose classes the handicapped learner is enrolled via one of the avenues discussed above. It is reasonable to assume that some impact will be felt — some benefits may accrue to these children, and some adverse consequences may result. Additional resources in the class, improved quality of instruction, and greater individualization of instruction might result in improvement in the quality of education for all children, and certainly exposure to handicapped learners provides an opportunity for learning about differences and toleration. On the other hand, the introduction of handicapped learners could result in undue teacher time being devoted to these few students at some cost to classmates whose instructional program could suffer.

In short, all children in the schools are going to be affected by mainstreaming. To be comprehensive, evaluation will have to consider these distinct populations separately. Also, mainstreaming is bound to affect school personnel as their roles are expanded with the introduction of handicapped learners into the regular programs. Teachers are the most directly affected since they will be held accountable for the child's progress. However, school psychologists will also feel the impact of PL 94-142 in terms of procedural guidelines for identification, and to the degree that they become involved in designing the IEPs called for by this legislation.

Both formative and summative evaluations should include the various groups affected by mainstreaming *separately* and not focus exclusively on one of the populations.

TYPES OF EVALUATION IN THE CONTEXT OF MAINSTREAMING

In light of the variations in programs of mainstreaming and the variations in the groups of children that are affected by any mainstreaming, between-groups designs appear of questionable validity for evaluating mainstreaming programs. Moreover, it is apparent that far

more sophisticated approaches to evaluation must be employed if we are to truly understand those elements of programs that work as opposed to those of little or no value. Given the newness of mainstreaming programs, it is advisable to study the process of mainstreaming in the early stages and direct evaluation efforts at understanding those components that are working well — in other words, emphasizing *formative* evaluation as opposed to *summative* evaluation.

Efforts to evaluate special classes and, more currently, mainstreaming programs have focused on summative evaluation; that is, the purpose of the evaluation is to determine the overall effectiveness of one program (e.g., special EMR classes; a specific mainstreaming program). Certainly, there is a need for summative evaluation, but given the lack of preliminary work on various models of mainstreaming, it seems equally important in the early stages to evaluate the relationships among educational processes. Formative evaluation attends to evaluation of specific components.

One approach to formative evaluation, as outlined by Stufflebeam, Foley, Gephart, Guba, Hammond, Merriam, and Provus (1971), will be used as a basis for the following discussion. These authors differentiated several types of evaluation: context evaluation, input evaluation, process evaluation, and product evaluation.

Context Evaluation

The purpose of context evaluation is to provide a rationale for determination of objectives. The intent is to generate objectives that, when met, will result in improvement of the program. In the context of mainstreaming, some of these determinations have been made for the school system by the courts and legislatures; nevertheless, the diagnosis of problems that must be overcome to achieve the objectives is clearly a need when mainstreaming is to be implemented.

Objectives. One of the first steps in evaluation is the specification of significant outcomes that will be measured to see if they have been achieved. In other words, what does one anticipate to be affected by the mainstreaming program? At this point in time, the outcomes hypothesized to be affected can only be inferred as they have not been stated explicitly.

For example, is it thought that the academic achievement of mainstreamed EMRs will be positively affected by enrollment in the regular classroom and being exposed to the stimulation of more capable classmates? Or

will the mainstreamed EMR be intimidated rather than stimulated by their more able classmates and, as a consequence, achievement affected adversely? Moreover, how does academic achievement rank in terms of importance among alternative outcomes such as self-concept, acceptance by peers, attitudes towards school, or post-school adjustment? Unless the specific outcomes of importance are specified, one cannot proceed to select instruments and procedures with which to measure those outcomes in any reasonable fashion.

In the broad sense, the overarching goal of all treatment programs for the retarded is to assist them in a fashion that enables them to function in settings in a way that their behavior is acceptable and avoids evaluation as inappropriate or maladaptive. In the classroom context, mildly handicapped learners (e.g., ED, EMR, LD) initially came to the attention of teachers because they failed to adapt to the academic and/or department standards. That is, these students were exhibiting maladaptive behavior in the classroom; moreover, they deviated to the extent that it was felt they could not be maintained in the regular classroom. The goal then seems to be to achieve adaptation. Three ways of achieving adaptation have been specified by Nihira and Shellhaas (1970):

1. Some effort is made to alter existing behaviors of the individual to develop new behaviors, in order that the individual can satisfy existing environmental demands.
2. Place the individual into an environment which tolerates the existing behaviors of the individual.
3. Some effort is made to alter the environment in which the individual resides in order that its requirements are more congenial to the individual as he is.

In the past, the second option was primarily used — the handicapped learner was removed from general education and placed into a special class where demands and expectations were adapted to accommodate the behavioral limitations of the children. Note that the demands in the regular class remained unchanged, and children who failed to meet them were removed. In addition, the mildly handicapped learner was immediately adaptive in the special class because this environment tolerated the behavior that led to his removal from the regular class.

Mainstreaming seems to fit best the third option of Nihira and Shellhaas (1970), in which the regular class is asked to either: (a) tolerate a wider range of behaviors as adaptive, or (b) provide services that alter the maladaptive behaviors in the regular class so that the individual is adaptive to the regular class. To date, dis-

cussions of mainstreaming have failed to consider directly whether regular education is willing or able to accommodate the wider range of individual differences that will result from mainstreaming in terms of instructional objectives or instructional strategies.

For example, in the EMR curriculum an objective of rather high priority was the development of vocational skills and social skills that would enhance the individual's ability to get along in an occupational setting. Are we now going to include that as an objective available under the rubric of general education? Or do we implicitly decide that the goals of general education are appropriate for mildly handicapped learners, and that all that will be tolerated is lower level performance in pursuit of these goals without labeling it as deviant or substandard?

In other words, to the extent that mainstreaming requires tolerance on the part of general education it is essential that we explicate what will be tolerated (more varied educational goals or the degree of mastery of existing educational goals). MacMillan et al. (1976) considered this problem by distinguishing between a *program* and *services* as they wrote:

When children were placed in a special EMR class they were placed into a program that had goals and objectives quite different from general education. The activities were geared towards vocational competence and social adjustment to a far greater extent than was true for regular education. This raises several issues in the context of mainstreaming.

First, when a given EMR child is mainstreamed, those making the recommendation should know that this move represents a shift in some important educational goals for the child. Are the goals of general education more appropriate for that child than those of the EMR program?

Second, providing a resource teacher to support the regular class teacher does not necessarily alter the state of affairs. Resource teachers do not have educational goals and they do not represent a program; rather they deliver services — assessment, prescription, remedial instruction, etc. Hence, they supplement the regular class teacher but the programmatic goals are those of the regular education program.

The third issue goes back to the readiness of regular education and pertains to the willingness and ability of general educators to provide programs with vocational and social adjustment objectives more closely resembling the EMR program. This would entail major accommodative changes on the part of general education, something unlikely to take place (pp. 7-8).

Until the objectives of mainstreaming are explicit, it is impossible to specify the outcomes to be considered and select instruments and procedures with which to assess those outcomes.

In the majority of cases of mildly handicapped learners who are mainstreamed, some direct services will have to be provided in order for them to function adequately. Throne (1975) made this observation, albeit in a context different from mainstreaming:

... the normalization principle ignores the fact that by definition the retarded do not develop normally in response to normative procedures. For individuals to be correctly designated retarded means retarded only after normative procedures have been tried and found wanting. Referring to someone as retarded except in response to failure of normative procedures is *non sequitur*. While specialized procedures may or may not succeed in helping the retarded to become more normal, they always are the prescription of choice over normative procedures if more normal lives for the retarded are indeed the ends sought (p. 23).

In educational terms, mildly handicapped learners already have been approached with normative (or regular education) instructional procedures and were not benefiting. That is what first brought attention to them prior to certification as EMR, ED, or LD (see Mercer, 1973; Meyers, Sundstrom, & Yoshida, 1974). Now as these children are mainstreamed, extreme caution is called for lest it be assumed that ordinary instructional strategies are adequate — which would seem to be the case only if some experience intervening since certification has remedied the problem that initially led to the child being designated as a mildly handicapped learner. Specialized techniques are called for and will hopefully serve to assist the handicapped learner to his fullest educational attainment and as a result be able to perform in the mainstream of education and life.

Various Reasons for Mainstreaming. If the question is asked, "What are you trying to accomplish with mainstreaming?" we believe the answer would vary considerably among those asked. This takes us back to the impetus for mainstreaming. Some (e.g., Dunn, 1968) appear to advocate mainstreaming in the belief that certain benefits will accrue to mildly handicapped learners that have not been forthcoming in previous educational alternatives (i.e., self-contained classes).

In earlier papers, MacMillan (1976; MacMillan et al., 1976) noted the concerns of administrators — the civil rights court cases directed against special classes and the overrepresentation of ethnic minority children in those classes; the cost of running programs for handicapped learners. As a result, when an administrator of a program is asked whether a program is "good," he will assess:

1. How cost effective the program is;
2. How many children are served in the program;
3. Does the program, at least, avoid adverse publicity?

In California, after a massive decertification of EMR children in response to court cases, reports issued by the State included data on the reduction in minority percentages in EMR programs (Simmons & Brinegar, 1973) and the number of children removed from EMR programs. The assumptions here are that if a lot of children are

served, fewer dollars are spent, the percent of minority children is reduced, and the program avoids court cases, then mainstreaming is good.

In order to complete the picture of mainstreaming, it is necessary to assess the effects on children. This second perspective (i.e., the *child-oriented perspective*) tends to be that taken by the researcher; however, it is important that different perspectives for evaluating mainstreaming may lead to quite different conclusions. A program may be inexpensive, serve a great number of children, and avoid obvious problems; yet, the children enrolled in the program may fail to make progress academically or socially.

MacMillan et al. (1976) noted that when one asks persons occupying different roles how to evaluate mainstreaming, the answers received will differ systemically. For example, a district administrator may consider a mainstreaming program "good" if it is cost effective and results in very few lawsuits, but a classroom teacher may judge the same program as "poor" because inclusion of handicapped learners both increases the behavior problems in his class and makes instruction more difficult. Neither has touched upon the changes in child behavior. Keogh and Levitt (1976) noted a similar phenomenon:

It is of some interest to note that, from our ongoing contacts with public school personnel, it is apparent that the closer one is to the actual operation of programs, the less certainty there is about mainstreaming. Legislators and state or district administrators are enthusiastic advocates, building principals are for the most part positive, and classroom teachers are frequently ambivalent (p. 8).

In order to accommodate these perspectives, MacMillan et al. (1976) distinguished between the *administrative perspective* and the *child-oriented perspective*. One can easily add to the list, possibly the most obvious addition being a *legal perspective*.

Administrators speak about cost, the number of children served, favorable or unfavorable publicity, and the trouble caused by programs (e.g., lawsuits, opposition from minorities) when discussing programs. For example, in California when thousands of EMR children were decertified, one index published by the California State Department of Education pertained to the change in the proportion of children from various ethnic groups that resulted from this action (Simmons & Brinegar, 1973). A drop in the proportion of minority children is "good," a program increasing excess costs per pupil is "bad," and so on.

Data bearing on the administrative perspective often fail to provide insight into whether a particular program is beneficial or detrimental to children. In order to

evaluate the effects on children, it is necessary to go into the collection of child data which, while desirable, is not without a series of problems (discussed later). Nevertheless, it is important to consider the varied perspectives, as mainstreaming is of interest to many persons and groups — administrators, teachers, parents, school boards, legislators, child advocate groups, researchers, and others — each of whom may be interested in different kinds of information.

In context evaluation school personnel must be aware of precisely what is hoped to be achieved for their handicapped children by mainstreaming. Once this is achieved, one must consider the distinction between perspectives that suggest differing evaluative data to be collected: Administrators, parents, teachers, and children may define "good" programs in terms of quite different outcomes. Once these objectives are specified, they should be prioritized to facilitate policy decisions in light of evaluative data that will be forthcoming, as the evidence is likely to be mixed with regard to outcomes evaluated.

Input Evaluation

The object of input evaluation is to determine how resources can be most efficiently deployed to achieve the goals of the educational program. First, we must determine the capabilities of the school district to provide the resources necessary to accomplish the program goals. Next, decisions must be made regarding the strategies that will be used to achieve the goals of the program. Third, we must assess designs for implementing a particular strategy. Through these steps, we are able to establish specific designs to achieve program goals. Moreover, district personnel can evaluate whether they possess the needed services to implement the program and, if not, can identify what resources will be necessary to obtain from sources outside the district. Efficiency of various designs can be compared in terms of costs, procedural barriers and staff deployment. In one sense, input evaluation predates actual program implementation and calls for logical evaluation; where data exist, they can be empirical.

Mainstreaming Models. Any number of "models" have been proposed for mainstreaming. Some involve the use of paraprofessionals; others use resource teachers; others the use of consulting teachers. In addition, there are considerations regarding the deployment of psychologists, curriculum specialists, and other school per-

sonnel who serve handicapped children in the schools (e.g., speech therapists). Various alternatives may be most appropriate for a given school district given the characteristics of that system and the characteristics of the handicapped children being mainstreamed. Therefore, one of the first aspects of input evaluation is considering and weighing the advantages and disadvantages of the various models that could be used in mainstreaming children.

Cost. In considering which model to use, cost can be roughly estimated for the alternatives. How many resource teachers will you employ? What qualifications will be required (which may dictate the salaries the individuals might command)? Or is it less expensive to hire paraprofessionals for each class into which children would be integrated? Other factors might suggest which of these alternatives is viable.

For example, do your regular class teachers possess the skills necessary to promote the academic and adjustment growth desired, or will the school have to hire teachers (resource or consulting) to assist regular class teachers? If it is necessary to hire resource teachers, a district then may not be able to afford to hire paraprofessionals. Some districts seem enthused about mainstreaming in the belief that this will be less costly than running self-contained classes. One could question this belief, since resource teachers spend a lot of time waiting for children to come out of their regular class and, after working with these children, must wait for a convenient time to return the children to their regular class so as not to interrupt instruction.

What special materials, self-contained instructional packages, expertise in behavior controlling approaches, or specific instructional strategies must be made available to the regular class teacher, the resource teacher, or must be possessed by the regular class teacher in order that the program objectives can be achieved? Anticipation of these needs should be clarified during input evaluation, and provisions made to obtain these materials and skills prior to implementation of the program.

Another dimension to be considered is the barriers that might be encountered and alternative approaches to minimize their impact on the program. One obvious impediment is the opposition that can come from the regular class teachers (see MacMillan, et al., 1976). In fact, some preliminary results of a mainstreaming program (Shotel, Iano, & McGettigan, 1972) revealed the negative attitudes of regular class teachers toward EMR children, which were not modified as a result of exposure to these children in a mainstreaming context. Another

potential problem pertains to acceptance of handicapped children by their nonhandicapped classmates; the literature does not warrant optimism regarding the social plight of the handicapped when they are integrated (see Gottlieb, 1975).

Nevertheless, as barriers to the successful achievement of program objectives are noted, specific designs will be planned to break down the barriers. Certainly, involvement of regular class teachers prior to implementation is essential given the ambivalence expressed by teachers toward mainstreaming (Keogh & Levitt, 1976; MacMillan et al., 1976; Meyers et al., 1974).

Process Evaluation

Following the input evaluation, a course of action is initiated which is judged the most efficient and beneficial means by which program goals can be achieved. Process evaluation can be initiated once the design is implemented, providing periodic feedback to those who must implement the program. Stufflebeam et al. (1971) specify three major objectives of process evaluation: (a) to identify defects in the implementation, (b) to provide needed information to decision-makers, and (c) to provide an ongoing record of the procedure as it occurs. Process evaluation enables modifications in procedures when existing approaches fail to yield anticipated results. In addition, at a later point in time it enables us to determine retrospectively why certain objectives were not achieved.

Defects in implementation. Monitoring of the project in terms of overall objectives enables us to specify anticipated costs of the project at some point in time, degree of progress made by students in achievement areas, the extent of interaction anticipated between handicapped and nonhandicapped learners, and the like. By collecting progress data, trouble areas can be identified. If the students are failing to make the progress anticipated in reading, for example, the project staff is directed to examine the program elements intended to promote reading achievement. Modifications in the program can be made in light of data and input from project personnel in terms of what alternate approaches (possibly rejected during the input evaluation stage) seem warranted.

Information for decision-makers. A major problem with summative evaluation is that once it is completed it is too late to do anything about areas of failure; when you find at the end of the project that reading achievement suffered, it is too late to modify the project to promote reading achievement for that cohort of children for that

year. However, process evaluation entails collection of ongoing data pertaining to the outcomes of importance. Program evaluators will monitor the progress of the program and the children enrolled in the program, and can obtain the kinds of information needed by decision-makers in order to make the necessary policy decisions.

In many instances where summative evaluation alone is employed, decisions are made during the implementation stage on an intuitive basis and often in the absence of any evidence. However, if evaluators work closely with those responsible for decision making, the decision-makers are able to request data that can assist in making the necessary decisions.

Description of activities. A third function of process evaluation is the ongoing description of activities as they occur, in descriptive terms. These kinds of information are particularly useful in a retrospective sense. When the program results in the achievement of objectives or the failure to achieve these objectives, one can go back to the process evaluation data to find reasons for the success or failure in the achievement of these objectives.

In one sense, these data provide a description of what actually took place as contrasted to what was planned to take place in the design of the program. On the other hand, if the implementation resulted in significant variations from what was planned, the evaluator can avoid attributing changes in child behavior to program elements that were never really implemented in the classroom.

Product Evaluation

The fourth type of evaluation concerns the assessment and interpretation of outcomes both *during* and at the end of the project cycle. In the context of formative evaluation, the concern is primarily with the measurement of objectives during the program, and is frequently done by means of establishing criteria and determining whether the program is achieving these objectives as it proceeds. In other words, if objectives of a mainstreaming program include some anticipated degree of peer acceptance and some degree of improvement in reading comprehension, one can devise operational objectives that are reasonable to expect halfway through the academic year and then measure the criteria associated with these objectives. One is able to determine whether reasonable progress is being made toward the achievement of objectives by comparing these measurements to the standards established.

SUMMATIVE EVALUATION

Programs for the education of handicapped learners traditionally have been evaluated in terms of outcomes which can be categorized under one of two major rubrics: (a) achievement and (b) adjustment. Each of these can be broken down further in terms of achievement in specific content areas (e.g., reading, math) and perspectives on adjustment (e.g., self-perceptions, peer perceptions, etc.). A cursory examination of the efficacy studies reveals that the outcomes against which the regular and special class students were evaluated were some aspect of achievement and adjustment. Similarly, critics of the special class point to the failure of special classes to promote significantly superior achievement or adjustment. Therefore, an implicit case has been made for these facets as legitimate outcomes for evaluating mainstream programs.

As indicated earlier, the summative evaluation of mainstream programs should consider not only the handicapped learner who is mainstreamed but also the nonhandicapped learner into whose class the handicapped learner is integrated. Moreover, those charged with policy decisions are likely to be confronted with a contradictory set of results, making decisions even more difficult (MacMillan, 1976). For example, assume that the data reveal that handicapped learners benefit from a mainstreaming program in terms of adjustment but are adversely affected in terms of achievement. Or, consider the possibility that the handicapped learners are benefitted by the mainstreaming program while the regular class peers into whose class they are integrated are adversely affected. Anticipation of possible conflicting results suggests that during the context evaluation stage, not only should objectives be established but in addition they should be prioritized. Having done this, policy decisions can be made more readily despite results that are contradictory.

In terms of perspectives, one must consider the child perspective in evaluating any mainstreaming program. While cost, number of children served, proportion of ethnic minority children enrolled, and similar kinds of information are interesting, they provide no insight whatsoever regarding effectiveness of the program on children. Mainstreaming is aimed at being beneficial for children, and the only way that outcome can be evaluated is by securing information about the children. When mainstreamed children exhibit problems in language functioning, the use of instruments which require that the child understand instructions, follow directions, understand vocabulary, and respond to written alternatives

present obvious problems in obtaining reliable and valid data.

INSTRUMENTATION AND INTERPRETATION

One impetus that led to mainstreaming was the concern that segregation of handicapped learners in special classes had either an adverse effect, or at least no beneficial effect, on: (a) peer acceptance, (b) self-acceptance, (c) student attitudes, and (d) academic achievement. The efficacy studies on which these concerns were based have been criticized in terms of the procedures and instruments used to measure these outcomes. Yet, these same kinds of children (e.g., with language problems) will serve as a source of data in mainstreaming evaluations, and little progress has been made in the development of procedures and instruments for tapping the outcomes mentioned above. These problems have been discussed by Jones (1976). Space limitations preclude an extended discussion here, but some of the concerns, in brief, involve:

Peer Acceptance

Traditionally, when attempting to ascertain the degree to which one child is "accepted" by another, one relies on sociometric methods. Jones (1976b) questioned the validity and stability of results derived from sociometric methods used with atypical populations. Possibly a more serious challenge to this approach evolves from answers to the following questions:

1. How vulnerable are sociometric ratings to events that immediately precede administration of the scale? (For example, a teacher praises one child and reprimands another just before the scale is administered.)
2. What is the relationship between sociometric ratings and actual behavioral interactions among class members? This refers to the attitude-behavior relationship discussed in the sociological and social-psychological literature (e.g., Schuman & Johnson, 1976).
3. How class-specific are the results of sociometric results, or under what conditions is a child accepted or rejected? In other words, to what degree can one compare a child's sociometric status in one class to another child's status in a different class or from reading groups to the playground?

While sociometric procedures are useful for a teacher to gain some insight into the social patterns in his or her class, we are questioning its usefulness as a dependent measure in an evaluation design.

Another problem arises in the interpretation of sociometric data. When a child is found to be given a low sociometric rating by his peers, the following problems exist in interpretation:

1. Race and mainstreaming are often confounded, since the mainstreamed population is disproportionately drawn from minority groups.
2. Is the child rejected or ignored because of the stigma associated with his status as a mainstreamed student (if classmates know his status), or because he exhibits behaviors to which the classmates object? This can be confused further by race and/or sex of the target child.

In short, sociometrics (and probably any other paper-and-pencil measure) should be supported by other data (e.g., behavior observation) in order to provide convergent data on the same outcome. In addition, we need critical evaluation of sociometric devices with handicapped learners.

Self-Acceptance and Adjustment

If mainstreaming exerts an influence on the child, one might anticipate that the child will feel better about himself ("I'm a normal student") or that he will devalue himself as a result of being confronted constantly by peers who are more able than he is — in either case, the child's feelings of self-worth or the extent to which he is "well-adjusted" personally.

Gardner (1966) discussed the problem of reliance on self-concept scales and tests of personality developed for use with, and standardized on, nonhandicapped populations when these instruments are used with mildly retarded subjects; however, the concerns are equally applicable to the mainstreamed child. For example, on the California Test of Personality, realistic answers to questions (e.g., "Do most of your classmates think you are bright?") will be scored as wrong, or lead to the conclusion that the child is maladjusted.

A recent review of literature on self-concept (Shavelson, Hubner, & Stanton, 1976) contains an analysis of the major scales available for measuring self-concept. Again, these scales are of unknown validity for handicapped populations. The language and vocabulary demands introduce bias or error into the data. Moreover, the

retarded are known to give more socially desirable answers than do children of average intelligence (Crandall, Crandall, & Katkovsy, 1965; Jones, 1976b), which contributes additional error to the data when children (assuming they comprehend what the question asks) give an answer they think they should give instead of the answer that reflects their actual feelings.

Other problems in interpreting self-concept measures arise when, in the case of a handicapped learner, a low self-concept is found. Does one attribute that to an adverse effect of mainstreaming or — to put it bluntly — is this a realistic self-image? The use of pre- and post-test data would enable one to consider changes in self-concept related to a particular educational program instead of employing a post-test only and encountering the interpretive problems mentioned above.

Student Attitudes

Jones (1976b) noted the desirability of obtaining measures of the attitudes of both mainstreamed children and regular class peers. It is crucial, however, to recognize the complexity of attitudes and their measurement, and not to assess superficially how the child feels about school. Jones contended that to get a meaningful picture of child attitudes, one would want to tap the following:

1. General attitudes toward school.
2. Attitudes regarding the teacher-student relationship.
3. Attitudes toward peers.
4. Feelings about attending school.

to which one might add:

5. Attitudes toward specific program elements, such as being taken out of the classroom to be taken to a resource room.

The literature now reflects the importance of the "referent" in any studies of attitudes toward the handicapped (Gottlieb, 1975). The attitudes expressed will vary as a result of referent differences, as they will as a function of the method and/or instrument used to measure attitudes, such as rating scales, semantic differential, or adjective check lists (see Gottlieb & Siperstein, 1976).

Interpretation of data on attitudes must be interpreted with extreme caution (Gottlieb, 1975; Schuman & Johnson, 1976), since an assumption underlying research on this topic is that one's expressed attitudes (usually on a paper-and-pencil test) are an index of one's actual behavior. Moreover, in order to draw any causal inferences between mainstreaming and attitudes, it would be

necessary to obtain attitude measures prior to initiation of the program and again at points later during the implementation phase of the project.

Academic Achievement

Any evaluation of mainstreaming is likely to entail the measurement of achievement, and standardized tests of achievement have a number of significant advantages over tests made by teachers (Gordon, 1975); the uniform procedures for administering and scoring and the established norms add to the validity of the results. However, test makers have not typically included the types of children likely to be mainstreamed (i.e., handicapped learners) in the standardization sample. Jones (1976b) expressed concern over the use of such tests with mainstreamed children:

1. Questions may be phrased in a manner that does not lend itself to comprehension by children with language problems (EMR, some LD).
2. Most tests are sensitive to performances at the middle range, but may not be valid for children at the extremes.
3. Reliability is questionable at the extreme ends of the distribution.

Some of these problems can be accommodated by using an "out-of-level testing procedure" (see Yoshida, MacMillan, & Meyers, 1976; Yoshida, 1976), where the student's teacher selects the level of the test most appropriate for the student; this procedure yielded excellent psychometric properties. In addition, one must be sensitive to changes that may be necessary in administration procedures due to problems in attention, frustration, and disruption that can affect all children being tested in the group. One investigation (Nystrom, Yoshida, Meyers, & MacMillan, 1977) revealed that in cases where educationally handicapped learners were untestable in a *large* class, it was possible to obtain optimal assessment in groups of eight.

Given that many of the children who will be mainstreamed are minority children, Jones (1976b) pointed out that evaluators must be sensitive to "assumptions" made by test constructors:

Those relevant to present concerns include the following: (a) each child understands the question being asked in the same way, (b) a child's cognitive function is observable only through the Anglo language and the Anglo value framework based upon Anglo experiences, (c) a people have the same experiences; therefore, the same questions can be asked of everyone. A

corollary assumption is that a question means the same thing in all environments, and (d) a label or name for a cognitive component is a precise description of the whole component (p. 242).

This concern boils down to one of the degree to which tests of achievement are "culture bound," an issue explored in detail by Cleary, Humphreys, Kendrick, and Wesman (1975).

Therefore, while standardized tests of achievement will be used extensively in efforts to evaluate achievement, these are not problem-free. The interpretation is further confused by the fact that grade equivalents of the various tests may not be comparable among the tests (i.e., they are unknown) at the lower levels. One study (Loret, Seder, Bianchini, & Vale, 1974) has equated reading scores of various achievement tests for grades 4, 5, and 6.

CONCLUSIONS

In this article we traced the forces that ultimately led to the current trend to provide needed special services for handicapped learners in the least restrictive environment. Establishing the basis for court decisions that mandated such provisions is difficult — evidence was presented, yet current values clearly influenced these decisions. Nevertheless, we conclude that regardless of the basis for such decisions, evaluation of mainstream programs is essential so that we can provide the best education possible for handicapped learners — an impossibility without information regarding the effect of program elements on child-related outcomes.

The lack of agreement on a definition of mainstreaming continues to be problematic and represents an impediment to evaluation efforts. Until agreement is reached, it is essential that evaluators describe in detail the elements of the programs they are evaluating so that others can ascertain the similarity between that program and ones in which they are involved.

A major theme is the inadequacy of between-groups designs for evaluation of mainstream programs and the need for procedures that relate program elements to significant outcomes in order to isolate program components that promote or inhibit behavior changes. Toward that end, we have applied a model for evaluation described by Stufflebeam et al. (1971) to mainstream evaluation in an effort to show the various types of evaluation (context evaluation, input evaluation, process evaluation, and product evaluation) needed for a comprehensive evaluation.

Finally, we discussed the problems involved in the use

of existing instruments for measuring the outcomes for handicapped learners; namely, peer acceptance, self-acceptance, attitudes, and academic achievement. The uncritical use and interpretation of existing instruments will yield invalid data which can lead to policy recommendations with deleterious effects on the children involved. We have attempted to delineate complexities involved in the measurement of outcomes that are hypothesized to be affected by mainstreaming.

The use of achievement data as an outcome is of greatest interest in terms of the amount of gain in achievement observed in children undergoing mainstreaming. Yet, a recent paper (Linn & Slinde, 1977) discusses the problems inherent in using gain scores to draw inferences, which are in fact unjustified whether one uses difference scores, residual scores, or estimates of true change. None of the procedures discussed can make up for the lack of random assignment, which is unfeasible in many situations.

While evaluation of mainstreaming is necessary to insure that handicapped learners will be exposed to the best education possible, a comprehensive evaluation will require hard work and cannot be undertaken in a cavalier fashion. Moreover, considerable basic work has yet to be done in developing instruments and procedures appropriate for use with the handicapped learners under consideration. Advocates for these children must not allow evaluations consisting of superficial and invalid measures analyzed inappropriately which fail to consider the complexities of the educational programming or the outcomes being evaluated. Handicapped learners deserve the best education we can provide, and the only way that can be established is via evaluation designed to clarify programmatic components that promote desired changes in student behaviors.

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CLASSROOM FORUM

by Debby Gilbert
Curriculum Coordinator
Learning Disabilities Program
DeKalb County, Georgia

Teachers frequently express concerns about communicating with parents. Often their anxiety has been heightened after a conference with a difficult parent or concerning a difficult child. What is the best approach in dealing with these concerns?

Sometimes teachers simply need to be shown a strategy for organizing themselves for parent communication, and by thus structuring themselves, they can become more comfortable in communicating with parents effectively. It also helps to employ some "tricks" of communication which I have observed teachers use successfully.

If good educational programs are to be developed for exceptional students, the home and school must work together. For many teachers this has been frustrating due to poor handling of teacher/parent communication. Thus, any educational program they might develop is doomed to failure. Important to successful communication with parents is the parent conference — how the parent is notified of the conference and how the conference itself is handled. Also important is ongoing communication throughout the year.

Often, the first contact the teacher has with the parents is when he or she notifies them that a conference is to be held. How this is done can make the difference between a negative, anxious parent and a positive, relaxed one.

— The best results are achieved if a written notification is given. This avoids a telephone or curbside informal conference where neither participant is prepared.

— State the time the conference will begin and the time at which it will end to avoid rambling on the part of either participant.

— State the purpose of the conference. Many parents worry needlessly when asked to attend a conference.

— Make the notification brief but attractive enough to catch their eye. Ask the parent to call the school secretary if the time is not convenient or to verify that the stated time is acceptable.

— Try to have at least one conference each quarter or semester, the first to review testing and to plan their child's program; the second for reporting progress; and the third to report gains and plan for further educational goals.

— Encourage parents to come prepared with their own questions, to relay observations of their child which they feel would help the teacher (peer relationships, play habits, likes and dislikes, health factors, etc.).

When the parent has accepted the conference time, the teacher's real preparation begins. The steps in getting ready may make all the difference in his or her own anxieties about the conference.

— Secure examples of the student's work from the folder you will want to keep adding to and updating all year.

— Have current samples of the student's work displayed in the classroom.

— Prepare the child's desk as much as possible as it would look on any day (task sheet, materials, etc.).

— Give consideration to the appearance of your room. A clean, organized environment will reflect the kind of teaching you do.

— Prepare a set of questions or points you will want to discuss. Keep in mind that most parents want the same general sorts of information about their children:

strengths and weaknesses

special aptitudes

learning potential

comparison of level of achievement with ability

any particular problems faced by the child in school
what can be done by the parents at home to help

— Graph the student's testing results so the parent has a clear picture of the child's ability and achievement level.

— If the child is integrated into regular classrooms, check with regular classroom teachers for current feedback on progress and performance in their classes.

— Encourage the parents to talk, and listen to what they have to say.

The conference is certainly not the beginning or the end of teacher/parent communication. There will be and should be a system of ongoing communication throughout the year.

— Send home a folder of work weekly. Have the parent acknowledge receiving the folder by returning it signed.

— Attach a cover letter to the weekly work, preferably written, or dictated, by the student. Talk about achievements that week, special problems surmounted, something new learned, things that will need continued help at school and home. (This may need to be done daily for some students.)

— When work is sent home to be done, be sure adequate directions are included. (It's fun to send home a learning game the student himself has made.)

— For older students or those integrated into regular classrooms, provide a homework assignment notebook,

task sheet, or calendar to be kept daily and/or weekly.

— Above all, report the daily successes to the parent. Then the problems you must inevitably discuss will seem less threatening. (Many clever forms of written communication, awards, and notes are already commercially available.)

These steps have been found by many teachers to serve as a base from which good teacher/parent communication can be launched. Perhaps the most important preparation which both parent and teacher can make is the development of an accepting attitude toward one another as partners in the task of helping exceptional students enjoy a positive environment in which they may work to their full potential.

(The writer would like to thank the many "special" teachers in DeKalb County, Georgia, for their contributions to this article.)

ALERT

September 24, 1977

Connecticut State Department of Education
Special Education Resource Center
Instructional Materials Exhibit
Hartford Civic Center
Hartford, Connecticut 06120

October 7-8, 1977

Pennsylvania Council for Exceptional Children
Seven Springs Mountain Resort
Champion, Pennsylvania 15622

October 12-15, 1977

American Association for the Education of the Severely/Profoundly Handicapped
Annual Conference
Jack Tar Hotel
San Francisco, California

November 2-5, 1977

American Speech and Hearing Association
Conrad Hilton Hotel
Chicago, Illinois

November 10-12, 1977

California Council for Exceptional Children
Marriott Hotel
Los Angeles, California

November 10-12, 1977

Illinois Council for Exceptional Children
Regency O'Hare Hotel
Rosemont, Illinois

November 10-12, 1977

The Orton Society, Inc.
World Conference on Dyslexia
Fairmont Hotel
Dallas, Texas

November 17-19, 1977

Ohio Council for Exceptional Children
Commodore Perry Motor Inn
Toledo, Ohio