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In Search of a New
Model: Three Essays
on Staff Development

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In Search of a New Model: Three Essays on Staff Development

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INTRODUCTION

An ironic contradiction currently exists in our educational programs. While sound empirical support exists for many of our instructional practices, their orchestration at the systems level is much less supported. For example, we have no shortage of studies identifying powerful strategies for teaching basic skills and content knowledge. Systematic programs utilizing direct instruction, well-designed curricula, and planful student involvement are embedded in both published curricula and teacher-developed materials. These components are the results of several decades of research and development in classrooms. Yet, such implementation often is sporadic and inconsistent. Programs developed and implemented by one teacher are rarely continued by others, as students move through the grades. And procedures used in one classroom are seldom practiced by others in the school. Variation exists even in implementation of programs within individual teachers over time (e.g., from the fall to spring).

In attempting to explain and control such variance in our educational practices, we focus on three strategies that have one common characteristic: They all are based on teachers working with each other to develop, communicate, examine, and modify instructional practices. This perspective assumes that instruction can no longer be considered within the isolation of the classroom. Such individualism ignores the complexity of problems currently facing schools: the diversity in students' backgrounds and skills, the demands for teaching a variety of curricular areas, the social and interpersonal environments within which programs must occur, and the overall community contexts. All these variables have an impact on programs to which teachers must respond.

However, we argue that when teachers work together, interactions should be structured and focused. A clear guiding approach and practical operating procedures must be present to achieve maximum change. The three strategies we present in these essays include school-wide alternative programs, teacher assistance teams, and collaborative consultation. We have summarized the major components of each option and the research literature supporting them. The essays are self-contained, however, and can be read independently.

In the first essay, we focus on the major components we think reflect the current complexity of schools and wide range of student needs. Our model of staff development is adopted from Sparks (1983*) and considers three major components: training context, process, and content; however, we have added a major emphasis on embedded evaluation, in which teachers take part in collecting and analyzing formative outcomes. To accomplish such an evaluation, we have identified six broad areas that have to be operationalized. They are (a) developing *School-Wide Assistance Teams* (SWAPs), (b) building discipline and instructional policies, (c) establishing effective classroom management and social behavior programming, (d) modifying instructional content, (e) modifying reading curriculum, and (f) developing language arts learning portfolios. In combination, these six elements would traverse all staff-development contexts, processes, and contents.

A more specific form of staff development is described in the next essay. To the concept of *Teacher Assistance Teams* (TATs) we have added a number of specific features heretofore not considered. Rather than approaching staff development and change at the broadest level, as implied in the first essay, we focus more on solving specific day-to-day problems. We have included several features that we believe are absolutely critical for establishing an empirical basis for change. For example, in viewing the change process from a model proposed by Smylie (1988*), we have identified four major variables: teachers, systems, instruction, and student outcomes. However, rather than simply considering all variables as equally important, we agree that teacher assistance teams need to identify a theoretical/philosophical approach that is consistent with its

*Reference lists may be found at the end of each essay.

staff. In one model, we use the research on reflective teaching to highlight such features as teacher thought processes, teacher knowledge of learning, students, lesson structure, and subject matter. We have labeled this model *Process of Decision-Making in Consultation* (PODIC). In contrast, we have identified another model, which focuses on *Student Performance Information Feedback* (SPIF). In this model, the following features are highlighted: student deportment and learning outcomes, which include a series of nine characteristics necessary to make performance outcomes useful (i.e., using classroom-based assessment). In the end, we believe future implementation of TATs will flounder unless they are cogently organized around a central philosophy.

In our final essay, we present a model of change that traditionally has been the least systems-oriented. However, as we consider it, we find that its general tenets and specific operating procedures place it on a par with the staff development models presented in the first two essays. We have taken a traditional model of consultation and identified four forces that drive the process and five outcomes that need to be present. The consultation process is generally a function of certain features about interpersonal interactions, time constraints and demands of many required activities, a variety of skills from these many different activities, and outcomes that are attainable. While these four forces have an impact on the process, we believe that, unless specific consultation competencies are in place, the change process will stagnate. We have identified them as (a) pre-referral interventions, (b) curriculum-based assessments, (c) effective instruction, (d) behavior management, and (e) evaluating program effects. With these outcomes from consultation, the process can be an effective change strategy for staff development.

While each of the three essays on staff development varies in the literature it draws upon and the model it employs, all are oriented toward expanding the arena of the change process from the classroom, across staff, and into the wider arena of school and district. We believe the essays present viable models predicated upon a sound theoretical foundation.

Essay 1

School-Wide Alternative Program (SWAP) Teams

Victor Nolet
Gerald Tindal
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Although staff development often is viewed as an effective mechanism for improving special education service delivery, three major problems currently confront schools attempting its implementation. First, while most models of staff development appear effective in *initiating* change, they are probably ineffective in *maintaining* it. Second, staff development efforts may not be able to keep pace with the changing school environments, thereby precluding outside "experts" or consultants from consistent alignment with the very staff being developed. Schools increasingly are being viewed as integrated settings for teaching and learning, in which traditional demarcations of content areas and isolated job responsibilities are being replaced with more integrated perspectives. For example, the core curriculum areas are seldom seen as reflecting isolated content; rather, reading and writing are incorporated into content area instruction, which is taught and evaluated together as an integrated construct. Similarly, general and special education are now considered in relation to each other rather than as separate units. Furthermore, the roles of principals and teachers in the teaching and learning process are conceived as collegial and collaborative, rather than superordinate and subordinate. The third problem faced by schools initiating staff development is that the change process must incorporate both *training* and *evaluation* components. Too often our evaluation instruments have lagged behind and/or have been distant from our training efforts.

The need for a new approach to staff development can be seen in the professional literature that summarizes the current state of affairs: Staff development studies provide bleak outcomes, while special education programs continue to expand unchecked. An innovative, replicable model of staff development is needed that (a) results in long-term maintenance of training effects, (b) is sensitive to the complex, integrated nature of schools, and (c) includes a meaningful evaluation component. Without these features, staff development efforts will continue to fall short of the promise they hold for bringing about meaningful change in schools.

THE NAPA COUNTY STUDY: FAILURE TO EFFECT LASTING CHANGE IN OUR SCHOOLS

A considerable amount of research has been conducted on the impact of staff development, with a surprising paucity of evidence supporting problem-solving practices in schools (Guskey, 1985; Hawley & Rosenholtz, 1984). A consistently reported finding has been that changes in teacher behavior resulting from staff development fail to be maintained following training.

A dramatic example of the lack of maintenance of staff development effects was reported by Stallings and Krasavage (1986). In a 4-year follow-through project in Napa County, California, relationships were explored among teacher behavior reflecting Madeline Hunter's (1989) *Instructional Theory Into Practice (ITIP)* model and student rates of academic engagement and achievement. An extensive program of staff development was implemented that was exemplary for its inclusion of the following aspects: (a) The goals of the program were clear; (b) the entire school was the unit for intervention; (c) principles and practices of effective teaching were highlighted and emphasized; and (d) training did not take the form of a "one-shot" inservice workshop (Porter, 1986). During the first 3 years of the project, teachers demonstrated small and inconsistent increases in teaching behaviors associated with the Hunter model; student rates of engagement increased somewhat, but achievement decreased. Remarkably, during the final year, when no training was provided, observations in classrooms of teachers who were included in the staff development program showed decreases in target teaching behaviors and student achievement. Meanwhile, students in a matched control group whose teachers did not participate in the training made greater gains in reading and math during the final year than did students whose teachers were included in the staff development. How can such a diluted and temporary effect come from such systematic and thoughtful training?

The study by Stallings and Krasavage (1986) exemplifies the complexity of the problems confronting our schools today. This project was federally funded, utilized national experts in staff development, and was conducted over a long time period, but still failed to bring about lasting changes in teacher behavior or student outcomes. Unfortunately, the failure to achieve lasting effects in this study is not unlike that experienced by many schools engaged in extensive staff development efforts. Little, if any, change occurs in educational practice.

One explanation for the Napa County results was that the content of the training program was too narrowly defined and did not provide teachers with a range of approaches that could be applied differentially, as situations demanded (Hunter, 1986). In other words, the staff development effort did not provide teachers with skills functional for operation in the complex environments that schools present. Another very viable explanation for the lack of achievement improvement is that insensitive measures (published, norm-referenced tests) were used. Finally, and most importantly, no evaluative data were embedded within the project that would allow teachers to formatively adjust their efforts.

Complexity of Schools

Schools continue to grow more complex, yet most staff development efforts do not present consistent, effective strategies for responding to the problems brought about by this increasing complexity. Two variables that have contributed to the complexity of schools are the range of skills among students and the range of expertise among general and special education teachers and school administrators.

A wide range of student skills

Students come to school with skills that may place them in a range of service delivery configurations, including special education, Chapter 1, general education classrooms, programs for students with limited English proficiency, or talented-and-gifted programs. As schools are currently structured, the range of services available to students does not always match the range of student needs. An example of the effects of this mismatch can be seen in the case of students designated "at-risk," i.e., students in danger of failing to complete their education with an adequate level of skill (Slavin and Madden, 1989). Despite the opportunities that schools could provide, the educational benefits available are limited to a disturbingly large proportion of at-risk students. About 50% of special education students do not graduate from high school with a diploma or certificate of completion, and an average of 312

handicapped students drop out of high school each day (United States Department of Education, 1991).

Although increased educational opportunities for all children, including those with handicaps, may be one of the highlights of the past two decades, a rapid and inappropriate growth of special education programs has also occurred. The U.S. Department of Education reported that special education is being provided to more than 4.6 million handicapped people (*Thirteenth Annual Report to Congress on the Implementation of the Education of the Handicapped Act*, 1991). Most are children labeled as learning disabled (LD), educable mentally retarded (EMR), and seriously emotionally disturbed (SED).

Ironically, the procedures used most often by schools to deal with learning disabled students (i.e., pull-out programs) and at-risk students (flunking and diagnostic-prescriptive pull-out programs) are the least effective in bringing about changes in student performance or reducing drop-outs (Yssledyke, et al., 1982; Slavin & Madden, 1989). One explanation for this ironic result is that teachers seek to reduce the complexity of the teaching task by decreasing the range of skills among students in their classrooms (Gerber & Semmel, 1983; Gersten, Walker & Darch, 1988). Referral to special programs of those students who deviate most from the modal performance of the class accomplishes this reduction in performance range. For example, the most important determinant in placement in special education is the referral itself. Once a student is referred, the probability of assessment is 92%; once assessed, the probability of placement is 73% (Yssledyke & Thurlow, 1983). If substantial changes are to be accomplished in educational practice, a more appropriate way must be found to address the range of student skills.

Demands for increased skills among classroom and special education teachers

As the number of LD students approaches and exceeds 2 million, special educators are becoming more vocal about appropriate services. Many students now identified as handicapped simply are doing poorly in school and/or are products of inflexible or limited regular education services (Keogh, 1983; Mann, Davis, Boyer, Metz, & Wolford, 1983; Shinn, Tindal, Spira, & Marston, 1988). Reynolds and Wang (1983) have described the current special education service delivery environment as one of "disjointed incrementalism," where numerous specialized programs exist, each with their own eligibility criteria and none effectively interacting with others. As a result of this lack of integration and coordination, service delivery is inefficient and

reliant on procedural activities that frequently are unrelated to actual student needs. Lilly (1987) has suggested that, although students who have learning or behavior problems in school may need special help, few if any of these students should be served in special education programs. Stainback and Stainback (1985) have argued that the dual service delivery system for special and regular education students no longer is necessary. Instead, they advocate a complete merger of special and regular education, based on the premises that (a) there are not two distinct kinds of students ("special" and "normal") who require differentiated services and, (b) the operation of a dual system is inefficient.

No great leap of logic is needed to see that, as general education systems are required to take more responsibility for programming for the full range of student skills, increased demands will be made on the resources of classroom teachers. Not only will increases in technical skills and expertise be required, but also new approaches to deployment of personnel and resources within schools will be needed (Kauffman, Gerber & Semmel, 1988). General education teachers who have little training in instruction of handicapped students will be faced with increased management and instructional demands when handicapped students are placed in their rooms (Riesberg & Wolf, 1986).

The issue of teacher skills is not insignificant. The various special education and general education teacher training programs around the country do not teach the same skills or content and they may not have the same philosophical orientation (Harris & Lalik, 1987). As a result of these training program differences, a school faculty may be comprised of teachers who have a wide range of skills, experience, and orientation. School-based staff development may be the only way to develop faculties that can function as integrated teams to promote consistent educational environments.

Collaborative consultation between special education and general education teachers has been proposed as one way to increase expertise among classroom teachers (Meyers, 1985). However, there continues to be a shortage of special education teachers with sufficient training to function as consultants.

Clearly, if successful alternatives to current service delivery models are to be found, extensive efforts must be made to increase the skills and knowledge of educators. Educational practitioners must make better use of existing knowledge pertaining to such issues as school-wide discipline, classroom management, assessment of learning, design of instruction for low-achieving students, and

use and adaptation of curriculum materials. Furthermore, personnel must learn how to critically evaluate the success of the interventions they choose and change those procedures that don't work.

Unfortunately, there seems to be an information gap. The rate of new technology development and empirically based educational practices has far exceeded the rate at which schools have integrated these new procedures into current practice. A new model for training school practitioners is needed if this information gap is to be bridged. The most obvious approach is to provide effective staff development programs for educational practitioners currently working in schools.

NEED FOR INTEGRATED STAFF DEVELOPMENT: TRAINING CONTEXT, PROCESS, AND CONTENT

Effective staff development builds from the issues noted above and rests on three foundations: context, process, and content (Sparks, 1983). *Context* involves the setting in which staff development is located and focused, with several levels available: individual teachers, grade levels, buildings, or districts. *Process* addresses the manner in which staff development proceeds. While many different strategies are available, the typical formats include initial training with minimal (if any) follow-up. *Content* describes the type of information upon which training is focused, such as behavior management, classroom organization, use of specific instructional strategies, development of referral and assessment systems, etc. All three variables should be carefully considered and manipulated to bring about a lasting change in teaching practices.

Training Context

The context of effective staff development is analogous to viewing an object under a microscope. At no time are all of the features of an object visible simultaneously, but the various levels of magnification on the microscope allow specific features of the object to be brought into sharp focus for closer inspection. Meanwhile, aspects that are not visible continue to exist and affect the overall nature of the object. At one setting, the surface features of a cell may be visible, but internal structures are out of focus. At the next setting, the internal features of the cell are visible, but the external structures are no longer in focus. Regardless of which part of the cell is visible at any given time, it is the interaction of all of its component parts that determines its function and effectiveness. Similarly, the context of staff development must employ varying levels of magnification so that all of the interacting components of the

school can be addressed as an integrated entity.

The context for staff development must accommodate change at several levels. In past research and training projects, a number of different contexts have been considered, including the instructional group (Rosenshine & Stevens, 1986), the classroom and grade level (Joyce & Showers, 1981), and the building (Stallings & Krasavage, 1986). While most staff development experts argue for training staff at the building level (Good & Brophy, 1986), we assert that all levels are important (instructional groups, classrooms, grades, and buildings). Furthermore, the school district is an important context in which to envelope staff development programs. Districts are important in setting policies for program eligibility (like Chapter I and special education); yet, buildings often function as autonomous units closely tied to the leadership of the principal (Hawley, Rosenholtz, Goodstein, & Hasselbring, 1984).

Training Process

Staff development has been described by Fenstermacher and Berliner (1985) as the "provision of activities designed to advance the knowledge, skills and understanding of teachers in ways that lead to changes in their thinking and classroom behavior" (p. 283). They refer specifically to teachers, but note that the definition can be expanded to include other school personnel. It (a) involves groups of teachers working in concert with specialists, administrators, or consultants and (b) requires extensive time and resource commitments from schools. Typically, goals of staff development are to change teacher beliefs, attitudes, and instructional practice and to influence student learning outcomes (Guskey, 1985). The benefits include development and maintenance of new skills and their generalization to daily problem-solving in the classroom (Schlecty & Whitford, 1983).

Within this context, however, staff development must be relevant to the immediate experiences of practitioners. In a national survey, Smylie (1989) asked teachers to evaluate various information sources to which they had been exposed while learning to teach. The teachers reported that they most valued direct experience as a source of information about teaching. The second most valued source of information was consultation with other teachers, and the third was independent study. Teachers *least* valued inservice training provided by school districts. Smylie suggests that the teachers polled valued most highly those sources of information that had immediacy and relevance to their specific classroom contexts and experiences.

Although classrooms may have many situations in common, considerable differences are probably

more the rule than the exception, which may explain teachers' reactions in Smylie's study. And, while we agree that training and skill improvement should be focused on immediate classroom issues and applications, this perspective begs the question of change. If we limit alternative approaches to current practices, a limited degree of change is likely to occur. Basically, teachers need to foster change in relation to the unique features of their classroom practices *and* have some basis for attempting alternatives that are founded upon, but not limited to, current practice. While most models of staff development espouse the need for teachers to adapt procedures to fit their environments and generate a sense of self-efficacy (Hawley, Rosenholtz, Goodstein, & Hasselbring, 1984), no systems have been developed for accomplishing this goal. The manner in which staff development proceeds (i.e., the training process) must incorporate evaluation procedures in addition to many of the principles of effective instruction. It is not enough to focus only on initial training even though it may be delivered using explicit procedures and followed with guided practice (Griffin, 1983; Sparks, 1983). Therefore, a new model of staff development is needed in which teachers are trained in both a specific content area (described below) *and* in the process of evaluation so that adjustments can be made to the ways in which programs are operated. More specifically, we would argue that an effective maintenance strategy for initiating and fostering staff development has five stages: initial training, follow up-training, supervised observation, supervised evaluation, and independent evaluation.

Initial Training

Stallings, Needels, and Stayrook (1978) propose that training occur in two to five 3-hour workshops spaced over a period of at least 2 weeks. Such a system allows time for participants not only to understand the content better, but also to address concerns from initial implementation. Clear demonstrations of recommended practices facilitate acquisition of new skills. As outlined by Sparks (1983), several types of activities should be utilized in initial training, including diagnosis and prescription, presentation and demonstration of information, and discussion and application. Sanford (1966) suggests that, by creating the need to change within a diagnostic framework, later training (prescription) may be completed more directly and efficiently. In the actual presentation and demonstration phase, models, videotapes, or detailed narrative descriptions should all be employed (Sparks 1983; Guskey, 1985). Finally, each training session should end with an opportunity to discuss applications and allow teachers to personalize the content to their immediate situations.

In summary, the dilemma involves focusing the source of learning on the classroom and maintaining a structure that is pedagogically flexible. By incorporating follow-up after initial training and including supervised observation, supervised evaluation, and independent evaluation, this focus can be maintained.

Follow up-Training

Change in schools is a gradual process. Single-session, "one-shot" staff development efforts are ineffective. Rather, successful efforts are characterized by sessions spaced over time, allowing for a gradual change to occur (Sparks 1983; Guskey, 1985). Furthermore, to facilitate maintenance of new skills, some form of coaching (Joyce & Showers, 1981; Stallings, 1982) can be effectively utilized to further ensure committed implementation. Extended training, which follows initial training by over a month, can serve as an effective booster for promoting consistent implementation and can focus the coaching efforts. As stated by the Rand Corporation (Berman & McLaughlin, 1978), if training is spaced over time, teachers can adapt and modify procedures to make them fit their situations. Such "mutual adaptation" is likely to ensure more continued use. The coaching programs introduced by Joyce and Showers (1981) are simply collegial observations providing both participants the opportunity to refine skills and learn from each other.

The only problem with initial and follow-up training services is that, while they are probably necessary, they are not sufficient to effect change in teaching and teacher practices. As noted earlier, inservice training provided through school districts was ranked 13th out of 14 sources in importance. "Overall, sources that were perceived to be most effective for the development of teachers' professional knowledge and skills are characterized by an organizational immediacy to the experiential contexts of teachers' classrooms" (Smylie, 1989, p. 552). Therefore, staff training must move beyond the district level inservice sessions and into the proximity of the classroom itself, requiring that individualized and intensive training occur, possibly using the coaching systems developed by Joyce and Showers (1981, 1982).

Supervised Observation

However, as Smylie further notes, teachers' observations of their colleagues, while holding great potential for new learning, may be limited by many of the same structural and normative constraints (such as lack of academically focused discussions [Lortie, 1975], physical isolation of the classroom and teaching [Lanier & Little, 1986], and prevailing norms of autonomy [Gidewell, Tucker, Todt, & Cox,

1983]). Therefore, an important component in implementing any new program is creating the opportunity for practicing and giving feedback. As Sparks (1983) describes effective staff development, this component is critically important and results in significant improvement beyond that obtained from workshops alone (presentations and demonstrations only). This phase of training can also be viewed as an opportunity for developing observation instruments that help focus the information and feedback. Ideally, however, as teachers or coaches observe each other engaged in various instructional practices, data collection is systematic to provide comparability over occasions and individuals. Two important activities in developing any measurement instrument include defining a target behavior and determining how to measure it (Medley, Coker, & Soar, 1984). Under supervised observation, different formats may be manipulated to develop a procedure that is both focused and sensitive to the needs of the teachers. Supervised observation involves working with both the observer and the observee to develop appropriate instrumentation.

Supervised Evaluation

No literature can be identified that extends the coaching model (Joyce & Showers, 1981) beyond observation and feedback and toward development of evaluative instruments for individuals coaching each other. Supervised evaluation involves working with both the observee and observer, training them on use of the instrument and refinement of its development and application.

Independent Evaluation

Independent evaluation involves working with both the observer and the observee to determine the effects of observation and the feedback it provides. As in supervised evaluation, no literature exists on applying evaluation procedures independently (i.e., without coaching their development or use).

A complete model of staff development exists when teachers are initially trained with follow-up and participate in supervision and evaluation. Teachers then become trainers of other teachers, and a collegial/coaching relationship is fostered, contributing to acquisition, use, and maintenance of new skills (Sparks 1983; Showers, 1985; Guskey, 1985). This alternative model of staff development is illustrated in Figure 1.

Training Content

As had been previously noted, staff development must provide information that is (a) directly relevant to the experiences of the participants, (b) integrated into current practice and, (c) empirically validated. The content of staff development should be on teacher behaviors that increase student achievement,

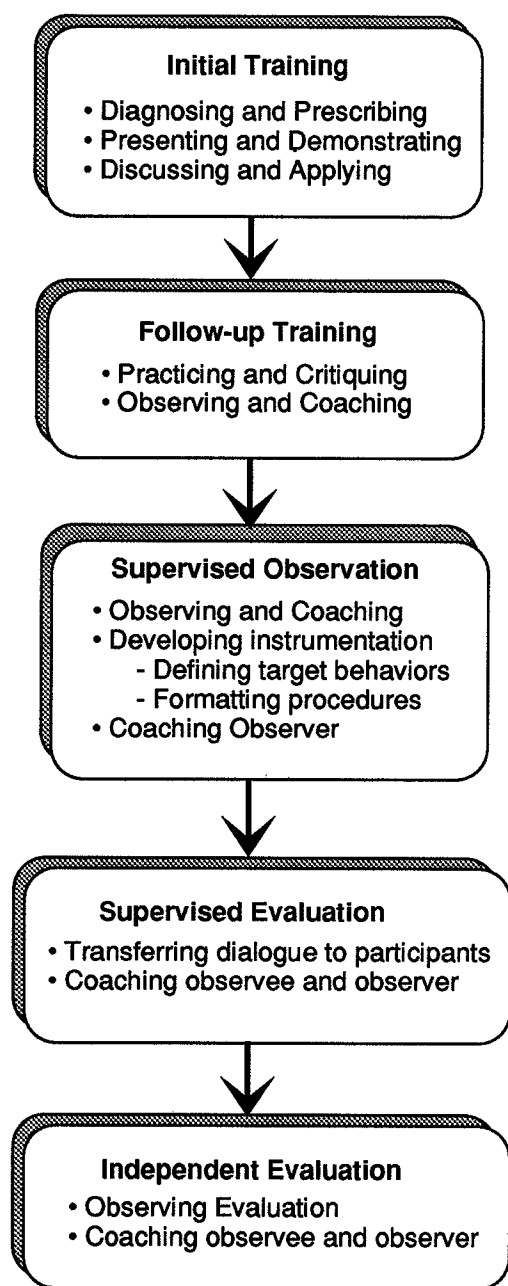


Figure 1. Process of Staff Development

particularly those behaviors that have been identified as contributing to effective teaching (Sprick, 1981; Brophy, 1983; Brophy & Good, 1986). The content of staff development should center on specific strategies for improving academic performance of low achieving or at-risk students. Additional content can later focus on school-based systematic problem-solving. We believe that training content should be broadly conceived to reflect the complex environments within which teachers function, and we have organized it into six broad areas.

DEVELOPING SCHOOL-WIDE ASSISTANCE PROGRAM TEAMS (SWAP TEAMS)

Development of collegial support groups has often been recognized as a necessary ingredient to the change process (Rodriguez & Johnson, 1984), in which teachers help teachers (Apelman, 1986) through advisory (Little, 1987) or peer supervision systems (Bang-Jensen, 1986). Attempts to resolve perceived problems with the current special education delivery system have centered on increasing the responsibility of general educators for dealing with at-risk and handicapped students. Rather than simply training more special education teachers to accommodate the growing number of students identified for special education, general educators can be trained to use strategies for accommodating students with special needs in mainstream classrooms. The gist of this training would be in problem identification and program development *prior to referral* for special education. This alternative perspective has been implemented through a wide range of options, including intervention Assistance Program (Zins, Curtis, Graden, & Ponti, 1988), Teacher Assistance Teams (Chalfant, VanDusen, & Moultrie, 1979; Hayek, 1987), pre-referral interventions (Curtis, Zins, & Graden, 1987), Mainstream Assistance Program (Fuchs & Fuchs, 1988) and consultation programs (Idol & West, 1987; West & Idol, 1987).

To date, the effectiveness of teacher assistance team models has not been supported by student performance data. Similarly, no data have been reported to support the assumption that general educators are willing or able to effectively develop programs for handicapped and at-risk students without substantial school-based support in the form of consultation services or special administrative arrangements, such as reductions in class size or extra-curricular duties. In fact, the most effective teachers may be the least willing to serve low-achieving students (Gersten, Walker & Darch, 1988).

While pre-referral or teacher assistance teams may be too narrowly focused on classroom or individual student concerns, the model does show promise when implemented on a school-wide basis. A school-wide assistance team could maintain a building-level perspective when addressing problems at any level in the organizational unit. Yet, it also could provide the kind of collegial, collaborative support that is critical to staff development and effective problem-solving.

Building Discipline and Instructional Policy Analysis

A critical issue to be considered in developing effective policies is the interface between special and general education. Often schools maintain two separate programs, with little concern for their interaction. Decision-making can be characterized as student centered, disjointed, and focussed on placement rather than programming (Ysseldyke & Thurlow, 1983). A school-wide discipline plan and policy analysis must accommodate both the school culture for all staff and the specialized programs within it, particularly as they interact with extant programs in general education.

Development of effective discipline and instructional policies requires a coordinated effort among all units of the school so that consistency is maintained across school environments. Clearly, an individual teacher or administrator cannot make independent decisions about such issues as grade-level curriculum implementation strategies or extra-classroom behavior policies. School-wide learning environments are increasingly the focus of change (Hawley, Rosenholtz, Goodstein, & Hasselbring, 1984). Furthermore, administrative support and collegial relations among participants is a major factor affecting the success of staff development programs (Sparks 1983; Guskey, 1985; Showers, 1985; Porter, 1986). Purkey and Smith (1983) describe effective schools as having nine organizational-structure variables: (a) school-site management, (b) instructional leadership, (c) staff stability, (d) curriculum articulation and organization, (e) school-wide staff development, (f) parent involvement and support, (g) school-wide recognition of academic success, (h) maximized learning time, and (i) district support. Additionally, they identified four process variables that characterize effective schools: (a) collaborative planning and collegial relationships, (b) a sense of community, (c) clear goals and high expectations, and (d) order and discipline. Most of these variables imply, explicitly or implicitly, a systems-level focus.

Effective Classroom Management and Social Behavior Programming

To facilitate teacher development of intelligent and consistent plans for classroom and behavior management, schools need to engage in staff development efforts that (a) establish school-wide norms for procedures to be used in classrooms and (b) provide teachers with sufficient technical skills and practice in use of strategies. A considerable body of knowledge has been generated in the last 20 years on the strategies employed by effective teachers in

managing their classrooms. Their abilities to minimize social behavior problems and maximize student achievement make it clear that effective behavior management is inseparable from effective classroom management (Behnke, et al., 1982; Doyle, 1986; Doyle & Carter, 1987; Emmer, 1987; Emmer, Evertson, & Anderson, 1982; Paine, 1983; Brophy, 1983; Brophy & Good, 1986; Sprick, 1985; Sprick & Nolet, 1991). Classroom teachers frequently identify as important behaviors such things as following rules, displaying good study habits, showing respect for others and their property, and being compliant (Walker & Rankin, 1983; Kerr & Zigmond, 1986; Salend & Salend, 1986). Students who exhibit inappropriate social behaviors are more likely to be perceived by teachers as difficult to teach and may be more frequently referred to teacher assistance program teams or special education (Gerber & Semmel, 1984; Gersten, Walker & Darch 1988).

As Brophy (1983) has noted, a hallmark of successful classroom management is problem prevention, accomplished through thoughtful planning and integration of management tasks with instruction. Some of the variables that teachers need to consider are classroom rules (Emmer & Evertson, 1988), effective grading policies (Sprick, 1985), and establishment of specific classroom routines (Sprick, 1985; Sprick & Nolet, 1991). Strategies for dealing with problems should be consistent and involve principles of applied behavior analysis (Alberto & Troutman, 1986).

Instructional Content Modification

Even though a broad range of empirically validated instructional procedures is available to teachers and the teacher behavior variables that increase student learning are well documented (Brophy & Good, 1986), teachers tend to employ a narrow range of classroom strategies that emphasize management of student behavior rather than student learning (Goodlad, 1983). As Goodlad (1984) has noted, "Schools seem to have shielded themselves from the technological revolution that has been underway during the last two decades" (p. 227).

This observation seems to be nowhere more evident than in the area of curriculum materials, upon which most teachers base their instruction. By some estimates, as much as 90% of instructional time in classrooms is structured by curriculum materials, particularly textbooks (Muther, 1985; Woodward, Elliot, & Nagel, 1986). Nevertheless, published content-area textbooks tend to (a) provide only superficial coverage of important information, (b) be uninteresting to students, (c) require only low-level cognitive processes and, (d) make limited demands

on students for production of thoughtful responses in tests of learning (Goodlad, 1984; White, 1988; Farris, Kissenger & Thompson, 1988). Furthermore, the "inconsiderate" writing and structuring of many textbooks make them difficult for students to read and comprehend (Armbruster & Anderson 1988).

Yet, teachers rely heavily on such curriculum materials when planning instruction. For example, McCutcheon (1980) examined the planning processes employed by elementary school teachers and reported that few teachers engaged in long-range planning because they believed the textbook would provide direction for future lessons. Similarly, Brown (1988) found that the instructional planning of middle school teachers was influenced by such non-pedagogical factors as availability of materials, previous experiences, and school schedules.

The educational benefits of such heavy teacher dependence on published curriculum materials is questionable at best. For example, Turner (1989) observed that the most common textbook assignments in social studies classes is "read the chapter and answer the questions at the end," but found little empirical evidence to support the effectiveness of this kind of assignment. For mildly handicapped students, teacher reliance on inconsiderate curriculum materials is a particularly significant problem. Most low-achieving students are unable to read with enough proficiency to comprehend and obtain information from textbooks that have not been modified or supplemented. Teachers rarely have sufficient skills at modifying curriculum materials to meet the needs of low-achieving students. Among the strategies that need to be addressed are those described in the effective schools literature (Brophy & Good, 1986) and various procedures for adapting instruction to meet the needs of low performing students. Furthermore, explicit interactive teaching in a variety of content areas is necessary in teaching low-achieving students (Brophy & Good, 1986; Good, Grouws, & Ebmeier, 1983; Hawley, Rosenholtz, Goodstein, & Hasselbring, 1984; Rosenshine & Stevens, 1986).

Reading Curriculum Modification

The core curriculum includes a number of vital aspects including instructional goals, adopted textbooks, teacher selected supplemental materials, and teacher instruction. Instructional programs incorporating these reading curricula often have to be modified to accommodate difficult-to-teach children (Beck, McCaslin, & McKeown, 1982; Calfee & Drum, 1986; Raphael, 1987). Rather than simply rearranging the content and providing a range of prosthetic strategies, the curriculum itself must be

realigned in both its scope and sequence. For example, many programs introduce beginning reading material in a manner that is both confusing and inefficient for naive learners (Carnine & Silbert, 1979). Reading curricula have many problems with comprehension instruction (Durkin, 1979; Beck, McCaslin, & McKeown, 1982), necessitating major structural adjustments. Raphael (1987) provides a number of strategies for redesigning the scope and sequence of reading curricula that include the following:

- General principles for vocabulary instruction.
- Techniques for extended vocabulary development.
- Story previewing and activation of a schema for understanding.
- Use of guided reading.
- Incorporation of independent reading activities.

The major goal in all reading curricular adjustments is the development of an active and successful learner.

Language Arts Learning Portfolios

An increasing number of educators and teacher trainers are calling into question the role of published achievement tests in determining student, teacher, and school accountability (Shepard, 1989). Rather than using such tests, which are riddled with problems of questionable content and limited formats, learning measures can be developed that are highly related to instruction and reflective of competence in a domain of knowledge. Such measures can include automatized skills (application of rote tasks), coherence of knowledge (understanding the inter-relatedness of information), and principled problem-solving or manipulation of knowledge (construction and application of information to create solutions) (Glaser, 1988). Student performance data can be formatted to accommodate a number of different assessment procedures and to help in making decisions about programs, including curriculum-based measurement (Shinn, 1989) to make screening and eligibility decisions (Shinn, Tindal, & Stein, 1988), instructional planning and formative evaluations (Tindal, 1988), and program review and summarization (Tindal, 1989). A number of new systems also have been developed in which the assessment is configured from the context of instruction (Pikulski, 1989; Valencia & Pearson, 1987, 1988; Wiggins, 1989a) and used to evaluate the effects of instruction (Berliner, 1987). A number of descriptions of alternative learning assessment systems have appeared in the past few years, including the following:

- Authentic tests (Wiggins, 1989b)—exhibitions to be used in displaying performance that are highly related to content area, have criteria for interpretation, include self-assessment, and are publicly presented or defended.
- Portfolios assessment (Wolf, 1989)—a biography of work that includes developmental drafts in various stages of progress as well as finished products.
- Active learning assessments of literacy (Brown, 1989; Hiebert & Calfee, 1989)—presenting students with complex situations requiring them to analyze, synthesize, interpret, and evaluate facts, concepts and principles.
- Students, classes, and schools-at-a-glance (Sirotnik & Burstein (1987)—visual displays of information that can be readily accessed by teachers and principals to understand the range of performance outcomes in a group.

All of these systems have two important traits in common: They are classroom- and teaching-focused, and they assume that the student is an active participant in the evaluation process. Furthermore, production responses are used to construct a range of performance outcomes, across students and within students, over time.

Although many leading assessment experts are calling for reform, the psychometric principles of

standardized testing should not be thrown out entirely (Brandt, 1989; Haney & Madaus, 1989). Indeed, many of the new alternatives can be used in large-scale assessments, an area for which published tests have been exclusively used (Valencia & Person, 1987, 1988). However, the formats of these alternatives reflect the complexities of both the classroom and student cognitive functioning.

SUMMARY

Findings from research lead to a number of conclusions about the state of the art of staff development. First, training should be distributed over a number of sessions that involve manageable chunks of information. Second, participants need sufficient time to assimilate and practice new behaviors to integrate them into existing routines. Third, formative feedback facilitates acquisition and maintenance of new skills incorporating supervised observation and evaluation as well as an independent evaluation in the end. The model of staff development proposed in this paper employs each of these components through utilization of building-based School-Wide Assistance Program Teams (SWAP Teams).

These teams provide ongoing training and consultation to all school personnel in each of the content-focus areas listed above. The SWAP Team functions as a problem-solving entity within the

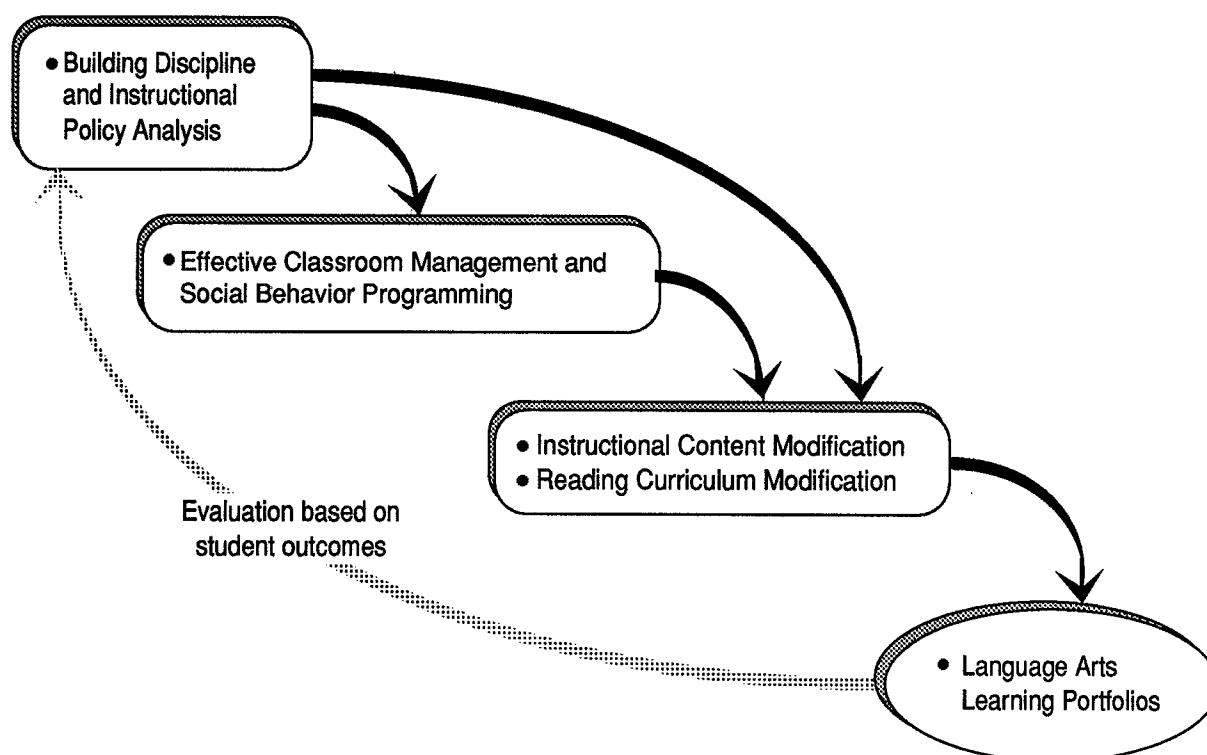


Figure 2. Functions of School-Wide Program Assistant Teams (SWAP Teams)

school that can have impact at all levels of the school organization. Following initial training, members of the SWAP Team can provide school personnel with individual consultation and coaching (Showers, 1985) and assist in integrating new content into existing practice. Because they are building-based, SWAP Teams can provide immediate and relevant assistance that is not available from outside trainers or even district personnel who may visit a school building irregularly. A key feature of the SWAP Team is the use of student outcome data to evaluate the effectiveness of staff development interventions.

The manner in which SWAP Teams function is illustrated in Figure 2. The process begins with establishing building policies regarding discipline and instruction, which should have direct bearing on classroom management and curriculum implementation decisions made by teachers. These decisions in turn directly affect student achievement. SWAP Teams provide specific content training and consultation in the contexts of building level policies, classroom management, and instructional decision-making. Student performance outcomes, as measured and documented by learning portfolios, provide data with which the effects of the SWAP Teams may be evaluated. Ultimately, however, SWAP Teams function in a collegial and consultative manner, rather than in a supervisory role, to train school personnel in the process variables related to evaluation of the effects of staff development.

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Essay 2

Teacher Assistance Team (TAT) Models

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In the late 1970s and throughout the 1980s, special education programs and services increased at a phenomenal pace. The net effect is that, in 1990, we have special education delivered to more students who are diverse in age and disabilities than ever before in the history of public education. For example, the following statistics appear in the *Thirteenth Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act* (United States Department of Education, 1991) and its subsequent amendments. The two programs for which data are presented include: Part B of EHA and Chapter 1 of the Elementary and Secondary Education Act, State Operated Programs (ESEA[SOP]).

- A total of 4.7 million students are served under IDEA, Part B, and chapter 1 programs, representing a 2.2% change in the total member served from the previous year.

- The vast majority of children served under both programs (87%) were between the ages of 6 and 17.

- Four types of handicaps account for the vast majority (94%) of children served under these programs in 1988-1989: learning disabled (49%), speech-impaired (23%), mentally retarded (13%), and serious emotional disturbance (9%).

- In 1989-90, 6.7% of the resident population ages 3 to 21 was served in these two programs, representing a 2.2% annual increase and a 23.7% increase since inception of the program.

- Most children served were between the ages of 6 and 17, with nearly 3.8 million, representing an increase of 14% since 1978.

- The largest category of students (by handicapping condition) was learning disabilities, with more than 2 million students served, a full 50% of the total population served.

- Educational placements vary substantially depending upon the age of the student, with approximately 41% of children 6 to 11 years old being served in the regular classroom compared to only 19% of students ages 12 to 17 being served in regular classes. Resource rooms serve between 34-45% of the students ages 6 to 17.

- Of course, placement setting also is a function of handicapping condition. Nationally, 20% of students with learning disabilities are served in *regular classes*, while 58% are served in *resource rooms*

and 21% get their educational programs in *separate classes*. In Oregon, 62% of all students receiving special education services are served in *regular classes*, with 29% served in *resource rooms* (fewer than 8% receive such services in *separate classes*). These percentages are nearly the same when looking at students with learning disabilities alone (57%, 38%, and 4% respectively).

- In Oregon, about 49,000 students are served in programs supported by EHA-B (41,700) and ESEA(SOP) (7,300). The largest handicapping condition is learning disabilities, with about 25,000; this number represents fully 5% of the total student enrollment.

- The total number of special education teachers increased in the past year (1987-88 to 1988-89) by 2,230, representing a .8% increase. Yet, during this same time, the increase in numbers of students served was 1.6% (over 72,000).

- For students with learning disabilities, about 88,000 teachers are employed nationally, representing 31% of the special education teaching force. Although this figure represents a 3.5% decrease from previous year, over 7,800 more teachers are needed (representing an increase of 29%). In Oregon, 3,300 teachers work within these two programs; the state of Oregon has reported a need for 323 more teachers.

In the late 1970s, Congress funded five research centers throughout the country to investigate the practices and procedures in use with learning-disabled students. One of these centers, the Institute for Research on Learning Disabilities (IRLD) at the University of Minnesota, initiated a 6-year investigation to document traditional assessment practices, many of which are currently in place. Ysseldyke and Thurlow (1983) summarize the results from the university's research program, as follows:

1. Generally, students are placed in special education programs because of a discrepancy between ability and achievement.

2. Yet, considerable variability exists in the assessment practices and classification criteria used by schools.

3. The instruments used in the assessment process are, for the most part, technically inadequate.

4. Current criteria for identifying learning-disabled students are inadequate and inaccurate.

5. Classification decisions often are unrelated to

the data generated during the assessment process.

6. Decision-makers do not use assessment data reliably to identify students as learning disabled.

7. The focus of most multi-disciplinary teams is on reporting data, with little time spent on integrating the data or attending to instructional interventions.

8. Professional opinions about the definition and prevalence of learning disabilities are quite discordant.

9. The most important determinant for placement in special education is the referral itself. Once a student is referred, the probability of assessment is 92%; once assessed, the probability of placement is 73%.

10. Placement in special education often does not result in substantive changes in educational programs that are different from those programs implemented in regular education.

NEED FOR ALTERNATIVE SERVICE DELIVERY SYSTEMS

Rather than simply train more special education teachers to accommodate the growing number of students identified for special education, we could train general educators in strategies for accommodating students with special needs in mainstream classrooms. The gist of this training would be in problem identification and program development prior to referral for special education. This alternative perspective has been implemented through a wide range of options, including intervention assistance teams (NASP, 1986), teacher assistance teams (Chalfant, Van Dusen, & Moultrie, 1979; Hayek, 1987), pre-referral interventions (Curtis, Zins, & Graden, 1987), mainstream assistance teams (Fuchs & Fuchs, 1988), and consultation programs (Idol & West, 1987; West & Idol, 1987a, 1987b). All models are focused on staff development as a cost-effective solution.

These findings from the IRLD also have resulted in renewed efforts to determine more precisely the procedures for assessing and placing students in special education. Problems with current assessment and placement practices have greatly affected provision of equal opportunity to all students. The most dramatic effect has been in the over-identification of minority children and males. The Office for Civil Rights (OCR) of the U.S. Department of Education has revealed that these two groups of students have been over-represented in special education.

To address this problem, the Panel on Selection and Placement of Students in Programs for the Mentally Retarded was established in 1979. The panel had the following two purposes: (a) provide

an analysis of factors responsible for such disproportionate placement and (b) identify procedures that would overcome such factors. However, the panel wanted to consider *why* such disproportionate placement was a problem and focused on the validity of the assessment procedures and the quality of instruction. Based on an extensive review of current law as well as educational theory and practice, the panel proposed the following six major components for inclusion in any assessment system (Heller, Holtzman, & Messick, 1982):

1. Multiple educational interventions should be attempted in the regular classroom prior to referral for placement in specialized classrooms, including the use of effective instructional procedures.

2. Measurement systems should validly assess the functional needs of the individual and be related to factors in the educational environment that can be manipulated.

3. If students are to be labeled, it is imperative that, as a consequence of the labels, distinctive educational practices be prescribed resulting in improvements not attainable in the regular classroom.

4. Data must be collected that demonstrate systematic implementation of high quality and effective special instruction, which produce results not attainable in the regular classroom.

5. A student's placement in special education should be reviewed annually, with retention based on failure to meet specified educational objectives, after all efforts have been made to achieve those objectives.

6. Systematic and regular monitoring of placement practices should be conducted at the local, state, and national levels to ensure equitable and effective program development for various groups of children.

Teacher Assistance Teams (TATs) represent the latest reaction by schools to accommodate these difficult-to-teach students in general education classrooms and implement the panel's recommendations. Their implementation is widespread, often serving as a pre-referral support system. Frequently they are an attempt to reduce special education populations, implement accountable programs, and improve general teaching strategies. Carter and Sugai (1989) found that 35 states require or recommend pre-referral interventions, with many of these efforts delivered through teams. Chalfant (1984) reports that 19 states have guidelines for establishing problem-solving teams to support classroom teachers. However, not one published study has appeared in the refereed professional literature that documents the impact of Teacher Assistance Teams on either

teachers' functioning in the classroom or students' social and academic performance. We have no theoretical rationale for the manner in which TATs operate nor a data base supporting their implementation. How have we come to such an impasse? In great part, the pressures of the identification-placement system may be responsible, generating a need that cannot wait for empirical validation or evaluation.

THE ROLE OF STAFF DEVELOPMENT IN THE CHANGE PROCESS

The panel's recommendations also have clear implications for teacher assistance team structure and function. Ferstenmacher and Berliner (1983) describe staff development as "the provision of activities designed to advance the knowledge, skills, and understanding of teachers in ways that lead to changes in their thinking and classroom behavior" (p. 4). Its benefits include the development and maintenance of new skills and their generalization to daily problem-solving in the classroom (Schlecty & Whitford, 1983). A considerable amount of research has been conducted on the impact of staff development, with a surprising paucity of positive findings for changing problem-solving practices with individual teachers in their classrooms (Gusky, 1986; Hawley & Rosenholtz, 1984).

The lack of research support is due, in part, to methodological problems or lack of a theoretical rationale for research design and treatment: Most models of staff development fail to consider *psychological antecedents* and *systems-organizational* variables as they influence individual teachers (Smylie, 1988). In response to this shortcoming, Smylie has conceptualized a model that includes these two major variables as determinants of instructional practice and change in practice by individual teachers. His model is based on March and Simon's (1958) and Bandura's (1977) theory that individual behavior change can and will occur when valued outcomes are anticipated and requisite behaviors are within one's behavioral repertoire. Smylie's investigation of staff development and teacher change has led him to conclude that:

teachers' perceptions and beliefs about their own practice are the most significant predictors of individual change . . . The direct relationship between personal teaching efficacy and change suggests that teachers are more likely to change their behavior in directions that may improve their classroom effectiveness if they believe that they themselves are instrumental to the learning of their students . . . *Personal teaching efficacy is a function of both teachers' outcome expectancies and the application of practices that they believe*

to be effective in the particular classroom setting [italics added] (p. 23).

This model implies that students are a major variable to consider in staff development aimed at enhancing classroom effectiveness. Students influence teacher behavior in two ways: in a teacher's initial expectations prior to instruction and following instruction, through their academic performance. As a result, a major contributor to teachers' referral decisions is their prognosis for student success (Algozzine, Christenson, & Ysseldyke, 1982). Since student outcomes were not part of Smylie's original model, they have been added in Figure 1 to present a more complete depiction of staff development antecedents, concomitants, and results. In this figure, student performance now plays a commanding role in affecting teachers' cognitions, classroom instruction, and system structure.

In our adaptation of Smylie's model, three groups of variables mediate classroom instruction: *teachers*, *systems-organization*, and *student outcomes*, the last one of which has both a cause and effect role in the model. This dual role signifies the importance of this variable in the instructional process. As teachers deliver instruction, their effect on student performance sets the occasion for subsequent adjustments in instruction.

Changing Systems-Organization Using Teacher Assistance Teams

In the model depicted in Figure 1, the systems-organizational component is an important medium for school-wide change. The Teacher Assistance Team reflects this component as a building-level system for supporting classroom teachers on a day-to-day basis. The team approach is premised on the belief that teachers can gain the skills and knowledge to effectively teach most students with learning and behavior problems through group problem-solving (Chalfant et al. 1979). TATs are designed to provide prompt, accessible support to teachers. Teachers refer students with problems to a team of elected colleagues within the building. Then, the referring teacher and TAT jointly engage in a structured process of conceptualizing the problem, brainstorming solutions, and planning interventions. Parents, students, and other specialists participate in some cases. Finally, a series of follow-up meetings are held to evaluate the student's progress and to plan further intervention. When appropriate, students are referred to special education. A hallmark of the Teacher Assistance Team approach is that the major responsibility for initiating change rests with the regular classroom teacher.

Major components of TATs include establishing (a) explicit referral procedures, (b) roles and respon-

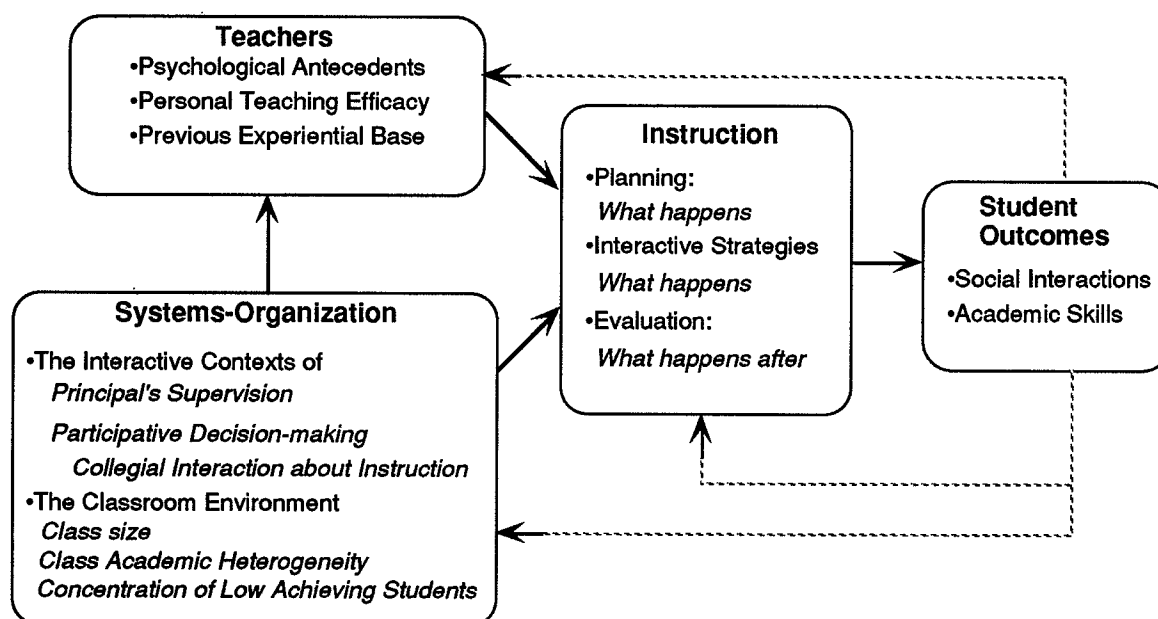


Figure 1. Variables in Mediating Classroom Instruction

sibilities of team members, (c) referral review and case selection procedures, and (d) instructional and assessment plans. The outcomes from a team meeting may include the following: (a) Generate procedures for teaching children in the classroom; (b) plan how to obtain more information about children through observation or assessment; (c) establish reinforcement schedules and procedures; (d) develop methods for evaluating children's progress; (e) refer children to special education services; (f) recommend retention; (g) generate contracts between teachers, parents, and children; (h) assign responsibility for follow-up action; and, (i) schedule follow-up meetings. Chalfant et al. (1979) outline the process as follows:

- I. Teacher encounters a problem
 - A. Attempts to handle it in class routinely
 - B. Makes a special effort
 1. Develops asset-deficit list
 2. Identifies problem areas (may seek assistance from other people)
 3. Selects instructional objectives and procedures
 4. Implements the plan
- II. Team coordinator reviews referrals
 - A. Schedules a team meeting
 - B. Arranges for someone to meet with the teacher or observe the child in the classroom
 - C. Returns referral to teacher for more information

- III. Holds problem-solving meeting
 - A. Clarifies objectives of meeting
 - B. Presents problem
 - C. Clarifies problem
 - D. Recommends alternatives
 1. Identifies instructional objectives
 2. Provides teacher with instructional alternatives
 3. Assigns a case coordinator
 4. Schedules diagnostic teaching and observations
 5. Administers standardized tests
 6. Refers elsewhere for assessment
 7. Recommends consideration for placement in special services
- IV. Insures parental due process rights are fulfilled
- V. Schedules follow-up meetings
 - A. Establishes teacher consultation and support
 - B. Recommends and implements new objectives and methods
 - C. Refers to special education
- VI. Evaluates effectiveness of intervention

Lack of Empirical Support for TATs

Claims of the positive impact of TATs are widespread. For example, Chalfant & Pysh (1989) state that the Teacher Assistance Team model has been field tested and evaluated in urban, suburban, and rural areas. Also, it is cited as an inexpensive system for helping teachers work with children who

have unique learning and behavior patterns, including the gifted, those who do not qualify for special education, and children who are being mainstreamed. At the teacher level, the model is considered capable of continuously improving teachers' skills in analyzing and solving classroom problems. And, at the systems level, the TAT approach is said to have resulted in decreasing the number of inappropriate referrals to special education, thus reducing special education costs (Hayek, 1986).

Graden, Casey, & Bonstrom (1985) implemented a pre-referral intervention system and reported data on consultation, referral, testing, and placement rates at three times: before, during, and after implementation. They found the program resulted in more referrals for consultation and lower rates of testing and placement. Harrington and Gibson (1986) used a questionnaire to investigate pre-assessment activities for learning-disabled children and found nearly two out of three referrals were handled without further assessment or special class placement. They also found, however, that teachers often disagreed with the recommendations of the team and felt many of the ideas to be lacking in substance and/or novelty. Hayek (1986) reported overwhelming agreement by teachers that TATs met the critical needs of problem learners, while Gilmer (1985) reported that most students (62%) were positively influenced by the TAT process. Carter's (1989) observation and survey of 14 TATs in 3 schools revealed the following process outcomes: They (a) took minimal time and ran smoothly, (b) significantly decreased the time between the point of referral and initiation of intervention, (c) reduced placements in special education, though referral rates were unaffected, and (d) resulted in positive teacher attitudes on several process dimensions. An important finding among the changes in teacher attitudes and practices was that they *did not* change their instructional tactics as a function of TAT assistance. Finally, Hayek (1987) reports that TATs improve screening procedures for special education referrals and lead to financial savings for school systems, though no data are reported.

In summary, procedures for implementing Teacher Assistance Teams are well explicated. However, they lack both a theoretical rationale and supporting empirical data. Not one study in the professional literature provides data on the effectiveness of Teacher Assistance Teams using either changes in teacher practices or student learning as an outcome criterion. All studies report changes in rates of referral or placement, or perceptions of process. We do not know how they operate or with what effects, which raises several questions:

- Are teachers appropriately prepared to present problems to teams?
- Are team members properly trained to analyze problems?
- What is the content of a typical team meeting?
- What problems and interventions are considered in team meetings?
- Do teachers implement team suggestions with fidelity?
- Do students improve as a function of team assistance?
- What is the recidivism rate for referrals to TATs? How many students end up in special education?
- How can TAT effectiveness (or lack thereof) be explained?

These represent only a few of the important questions that presently lack answers. To understand TAT outcomes, the *process-product* paradigm from the teacher effectiveness literature may be considered (Brophy & Good, 1986). The model depicted in Figure 1 can be used to develop a data base that describes how TATs and teachers operate and their effects on students. The *process* addresses teacher and TAT functioning, while the *product* includes all student outcomes, both social-interpersonal and learning skills oriented.

TWO ALTERNATIVE TAT INTERVENTION MODELS

These two orientations present legitimate venues for conceptualizing TATs, one of which is focused on how TATs are operationalized and the other of which addresses the effects TATs have on students. These approaches represent quite different paradigms, and potentially different *modus operandi*. Both TAT models hypothesize cost-effective improvements in instructional practices. We have labelled them *Process of Decision-Making in Consultation* (PODIC) and *Student Performance for Information Feedback* (SPIF).

Process of Decision-Making in Consultation (PODIC)

Much of the interest in TATs and other pre-referral interventions is based on the belief that groups of teachers working collaboratively can solve problems more effectively than individuals (Lloyd, Crowley, Kohler, & Strain, 1988; Pugach & Johnson, 1988; West & Idol, 1987a, 1987b). The hope is that these groups, selected and/or trained to solve classroom problems, can think of ideas missed by individual teachers. Also, it is hoped that the TAT can effectively communicate their thoughts, the target teacher understands these thoughts, and the target teacher carries them into classroom practice.

While there is substantial information about teacher thought processes themselves, little information exists on whether the above hopes are actually met by TATs (Lloyd et al., 1988). For Teacher Assistance Teams to affect how teachers teach, they must influence instructional decisions and work within domains of teacher thought that have some functional relationship to classroom practice.

Therefore, the major components of the Process of Decision-Making in Consultation (PODIC) model include the examination of individual teachers' thought processes within TAT decision processes and development of procedures for translating them into classroom practice.

Teacher Thought Processes

Research identifying sets of teacher actions that are positively correlated to student learning (Rosenshine & Stevens, 1986) has been followed by investigations into what teachers think. Three critical assumptions lie behind this research: Teacher thought processes determine teacher actions; the thought processes of more and less effective teachers differ; and teachers' thinking can be changed in ways that will improve their classroom effectiveness (Berliner, 1989; Clark & Peterson, 1986; Shavelson & Stern, 1981).

These three assumptions can be seen readily in the research findings from several different studies on teacher thought processes and instructional practices that identify incongruencies. Teacher misperceptions emphasize the managerial aspects of a task and neglect the curricular reason the task was assigned; often, teachers are not thinking about the curriculum. For example, Anderson (1982, 1984), Doyle (1986), and Mergendoller, Marchman, Mitman, and Packer (1988) note that the objectives of a lesson are often obscured during teacher presentations. Teacher explanations of assignments seldom include content statements. Teachers' comments during seatwork focus on whether students appear to be busy. Teachers rarely discuss cognitive strategies when they introduce seatwork, even when the task requires the use of explicit procedural or strategic knowledge. Rather, the procedures teachers emphasize are completion procedures (e.g., "Read the sentence and circle the word that goes in the blank," [Anderson, 1984, p. 99]). Teachers seldom address what the student needs to solve a problem or find an answer. When queried about how students are doing, Anderson, Brubaker, Alleman-Brooks, and Duffy (1985) report that teachers "emphasized persistence, effort, and independence more than students' comprehension of assignments" (p. 138).

Unfortunately, low-achieving students (those most apt to be brought to a TAT) appear to be

especially influenced by teachers' mis-perceptions about teaching and learning. Teachers want them to complete work (Anderson, 1984; Doyle, 1983), exhibiting strategies for finishing a task, but not for understanding it. Low-achieving students sense when they are confused, but don't see a need to change what they are doing (Anderson et al., 1985; Englert, 1987).

These are the kinds of thought processes and problem-solving strategies that need to be changed to increase effective teaching applications in the classroom. However, previous efforts to change the actions of novice teachers have not always succeeded. For example, Bennett and Desforges (1988) taught teachers how to diagnose student skill levels. Although the teachers acquired this new knowledge, change was not observed in classroom practice. Studies such as this one illustrate the need to examine carefully the processes by which TAT suggestions are expected to find their way into the classroom. It is clear that simply supplying teachers with information is not enough.

Sources of Influence for Classroom Planning and Interaction Decisions

The extensive literature on teacher thought processes identifies both teacher variables (e.g., knowledge of subject matter [Peterson, Fennema, Carpenter, & Loef, 1989]) and student variables (e.g., student class behavior and achievement [Hemingway, Hemingway, Hutchinson, & Kuhns, 1987]) that influence what teachers think. Teacher decisions are based on lesson objectives and content roughly 50% of the time when *planning* instruction, but only 10% of the time when *delivering* it (Clark & Peterson, 1986). This finding is of obvious importance to TATs designed to aid students who are behind in the academic or social curriculum.

As currently implemented, TAT functioning can be characterized as a planning activity, not an interactive activity, because TAT sessions take place outside of the instructional setting. Often team members have never even observed the student and teacher during instruction. Yet, the purpose of the TAT is to have an impact on classroom practice. Therefore, both teacher planning for instruction and interactions in classrooms need to be addressed. Four major sources of influence appear to be knowledge of (a) learning, (b) students, (c) lesson structure, and (d) subject matter.

Teacher knowledge of learning. It has been observed that teacher's beliefs about the way students learn affect how they teach (Shulman, 1986). Often, the lack of congruence between a teacher's view of learning and that of a consultant can reduce an intervention's effectiveness (Pugach & Johnson,

1988). Given the major changes that have occurred in the field of learning theory, particularly with respect to problem learners (Wang & Peverly, 1987), it can be expected that members of TATs and referring teachers will not always have a common view of the learning process.

Teacher knowledge of students. What teachers think about their individual students can profoundly influence how they interact with those students in class. This finding is supported by literature on teacher expectations (Brophy & Good, 1986) and by a narrower research base on student evaluation (Cadwell & Jenkins, 1986). The way teachers think about students is influential beyond the lesson and classroom levels, to the school level. High teacher expectations, and an unwillingness to "write off" students who have trouble are listed as primary determinants of school effectiveness (Good & Brophy, 1986).

Of particular interest to TATs is the research on teacher attributions about student achievement, which has shown that teacher problem-solving is subject to information-processing limitations produced by participants' own stereotyping and value judgments (Shavelson & Stern, 1981). It appears that teacher judgments about students are based as much on their own theories of behavior and perceptions of the student as they are on the student's behavior (Cadwell & Jenkins, 1986; Clark & Peterson, 1986).

Teacher knowledge of lesson structure. Leinhardt and Greeno (1986) state that teaching skill resides within two systems of knowledge: (a) the lesson structure and (b) the subject matter being taught. They believe that a skilled teacher's knowledge of lesson structure is composed in large part of "routines" that allow the teacher to carry out relatively low-level classroom tasks efficiently while allocating most of their attention and energy to important goals. This idea is consistent with Berliner's (1986) work. Knowledge of lesson structure includes certain teacher actions, or functions, that are necessary for effective instruction (Rosenshine & Stevens, 1986) and include lesson preview, explanation, guided practice, correction, and independent practice. Part of effective teaching includes having access to routines for accomplishing each of these actions, while another part involves deciding which action to implement. Certainly a teacher who does not have a readily implemented routine for using guided practice won't use it. This is true even if he or she knows that guided practice is needed. Therefore, assistance in the development of such routines could be an important TAT function.

Teacher knowledge of subject matter. Peterson, Fennema, Carpenter, & Loef (1989) have described

teacher thoughts about subject matter, citing Shulman's (1986) observation that the failure to consider a teacher's knowledge of the content is a major "blind spot" in the teacher thought process research. These authors contend that teacher beliefs about the content they teach have not received the same attention given to beliefs about student variables, or beliefs about the teaching process itself.

The Clark and Peterson (1986) finding with the clearest relevance to TATs is that (a) teachers vary widely in their beliefs about content, and (b) teachers' beliefs about the content interact with their beliefs about teaching it. It is likely that a given instructional recommendation will not be implemented uniformly across teachers unless those teachers share a common understanding of the content they are teaching. Therefore, the TAT may need to offer information about content, as well as instruction, and may also need to evaluate teachers' understanding of the content before making recommendations. Teachers' pedagogical content knowledge can be assessed by ascertaining what they know about (a) the relative difficulty of problems (items) being taught, (b) the general strategies used by students to solve problems, and (c) the particular strategies their own students use.

In summary, the Process of Decision-Making in Consultation (PODIC) model for Teacher Assistance Teams focuses on translating teacher thought processes into effective problem-solving and instructional applications in the classroom. First, teacher thought processes are examined both to describe them and to provide a basis for training TATs to interact with them. The influences of teacher knowledge of learning, students, lesson structure, and subject matter are considered. TATs function to change classroom practices in a manner congruent with teachers' thought processes. An important part of this component is the establishment of classroom practices that work with low-achieving students. This model is very process-focused and emphasizes the active role that teachers play in problem-solving. PODIC intervention focuses on providing TATs with direct training in consultation and decision-making processes so they may influence teachers' instructional decisions. This focus is portrayed in Figure 2 through the use of bold lines.

Student Performance Information Feedback (SPIF)

The second TAT model is Student Performance Information Feedback (SPIF). Like PODIC, this model represents an approach to improving teacher and student performance through systems-level

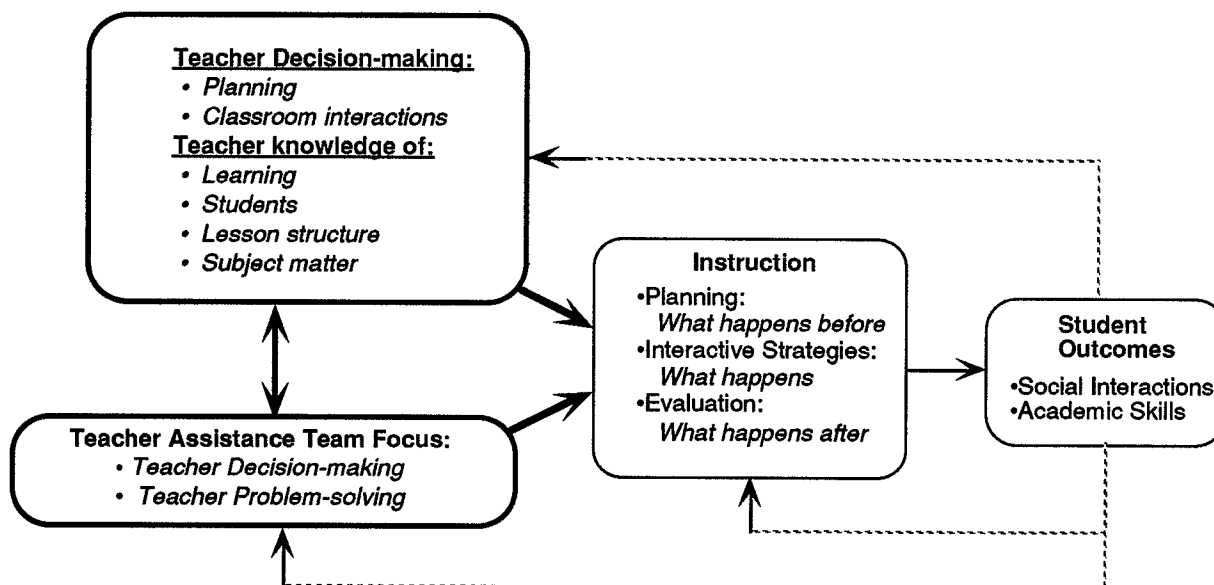


Figure 2. Process of Decision-Making in Consultation (PODIC)

change, i.e., by implementing variations of a school-based TAT referral and consultative service.

The primary emphasis of the SPIF perspective is learning outcomes, reflecting the belief that the primary mission of schooling is the provision of basic skills and content knowledge. However, deportment, compliant and orderly conduct within the classroom, are a first-order consideration for effective learning to occur. Although special education referrals focus on academic difficulties, the presence of behavior problems is nevertheless a major consideration in teachers identifying students for specialized help (Nicholson, 1967). Thurlow, Christenson, and Ysseldyke (1983) and Ysseldyke and Thurlow (1983) have noted that learning problems alone are frequently insufficient to warrant referral and eventual placement into special education programs. The SPIF perspective is based on the numerous research findings demonstrating that teacher use of student performance data can lead to increased student achievement (Crooks, 1988).

The Role of Deportment in Performance Evaluation

Many classroom expectations or requirements for success are quite universal, representing the minimal essentials for participation. Generally, special and regular education high school teachers have similar expectations of the skills deemed critical for the students to succeed and the behaviors that are intolerable if exhibited in the classroom. Interestingly, regular educators are more rigorous in their expectations and standards for classroom behavior,

"especially in the case of deportment ... A straightforward emphasis on self-control, good study habits, and teacher compliance comes through very clearly from the data on high-ranked items" (Kerr & Zigmond, 1986, p. 247). Teachers from both regular and special education emphasize following rules, listening to the teacher, and complying with teacher requests and demands. Teachers believe students must exhibit appropriate work habits, respect others and their property, and follow school rules in order to perform successfully in secondary-level mainstream settings. These data corroborate the findings of Walker and Rankin's (1983) survey of elementary school teachers and Salend and Salend (1986).

Utility of Learning Outcomes in Teacher Decision-Making

Importantly, teacher expectations are not limited to behavioral and interactional issues, but also include academic concerns. In the list of teacher expectations developed by Wilkes, Bireley, and Schultz (1979), many of the top 21 items deal with academic performance. For example, teachers expect students to have the following skills, listed with their ranking in parentheses: recognition of similar phonic sounds (#6) and a method for word attack (#12), adequate sight vocabulary (#8), capacity to follow written instructions (#9), comprehension and use of speech (#10), adequate reading level (#18), and math skills (#21).

In line with these expectations, a considerable portion of school resources is allocated for testing student performance (Burry, Catrall, Choppin, &

Dorr-Bremme, 1982). Administrative and policy demands for testing are integral components of referral procedures for most specialized school programs, including some TATs. Also, most school district budgets include funding to support several test procedures such as annual school-wide achievement testing programs. Teachers themselves often spend a great deal of time constructing, administering, and scoring a wide variety of measurements and evaluations. Summarizing research on the impact of assessment on student performance, Crooks (1988) notes that teachers judge evaluation to be important and engage in a wide variety of activities.

Given the amount of testing that occurs in schools, one might assume that considerable student performance data are available for use by teachers in instructional decision-making. Ironically, most teachers have little or no formal training in testing, measurement, or evaluation. As a result, much school testing results in data that are of little use for instructional decision-making. Most of the achievement data are not proximal to the classroom and are therefore viewed as irrelevant. Even relevant data are not utilized because teachers don't know how to use them (Yeh, Herman, & Rudner, 1981). Worse, important instructional decisions frequently are made on the basis of unreliable data or no data at all. For example, in a survey of special education teachers, Fuchs and Fuchs (1984) found that teachers most often relied on informal observations to evaluate student progress. While the teachers had considerable confidence in their assessment procedures, they are actually were poor estimators of student performance.

With academic and achievement concerns, the biggest problem is in developing assessment systems that are sensitive to student growth and relevant for teacher use in the classroom. In the end, despite the time and energy devoted to testing, instructional decision-making seems to be conducted, for the most part, without benefit of data. Schools generate and teachers attend to the wrong kind of data, and they lack the knowledge to design a data base for addressing specific decision needs. Like the ancient mariner, dying of thirst while lost at sea, educators are adrift in a sea of data that is of little use to them, and they lack the expertise necessary to generate the kind of information they really need.

Yet, classroom evaluation procedures can have a powerful impact on student achievement (Crooks, 1988). This conclusion is supported frequently in studies examining the effects of systematic measurement of student progress. For example, when teachers are taught to collect and analyze student performance data on a repeated basis, they make

more changes in instruction, with consequently positive outcomes in student performance (Fuchs & Fuchs, 1986b). When teachers measure student performance frequently and graph data, student achievement is about a quarter of a standard deviation above that of students whose progress is not measured frequently (Fuchs & Fuchs, 1986c).

The best example of a systematic evaluation procedure leading to data-based problem-solving has been provided by Fuchs, Deno, & Mirkin (1984). They trained an experimental group of teachers to write curriculum-based instructional goals, conduct frequent measurement of students' progress, graph the results, and employ decision rules to make instructional decisions when student progress fell below an expected rate of growth. A contrast group set instructional goals, monitored progress, and made instructional decisions as they wished. Students instructed by teachers who systematically used data made better progress than the students of the contrast group teachers. By responding to data, teachers in the experimental group employed effective instructional strategies that increased the structure of lessons, while teachers in the contrast group decreased lesson structure. Also, the data-based teachers made more realistic estimates of the amount of student progress that could be expected with an intervention, while contrast group teachers made unrealistic and overly optimistic projections of student growth.

Nine Characteristics to Make Student Performance Outcomes Useful

Clearly, testing procedures and data utilization are important variables to consider when examining the impact of teacher decision-making on student achievement. Recently, much has been learned about the characteristics of effective assessment and variables that influence data utilization by teachers. Specifically, nine characteristics of assessment are known to influence decision-making in schools, which must be considered in the design of assessment systems. Each of these considerations is discussed briefly below and in application within SPIF.

Characteristic 1: Focus of Behavior within the Assessment Process

All assessment can focus on either (a) skill mastery or (b) content knowledge. Skills are characterized by motoric responding and, at their extreme, skills may be considered tool movements (White & Haring, 1981), physical behaviors necessary for functional application of more advanced behaviors. Skills assessment requires inclusion of both accuracy

and rate as important dimensions, which together comprise automaticity, or fluent responding in the presence of distractors (Howell & Morehead, 1987). In contrast, Sheffler, (1965) notes that "knowledge originates in information which can be received directly from observations or indirectly from reports of observations. These observations may be external (objects or events) or internal (thoughts and feelings)" (p. 137, cited in Ebel, 1982). Measurement systems that assess knowledge address a number of issues such as defining the domain, sampling items from that domain, and determining mastery within the domain. When teachers refer students for TAT based on SPIF, they must clearly focus on the major problem, selecting that which is of the highest priority.

Characteristic 2: Curriculum-Based Item Sampling

Since many assessment models employ the term curriculum-based, it is imperative that a curriculum be defined and item sampling procedures be specified. In a short-term approach, items are sampled from a domain that is representative of the student's current instructional level (i.e., instruction that takes place on a short-term, daily or weekly basis). With a long-range sampling approach, a pool of items representative of everything taught in the curriculum is developed. Items are selected that are taught within the academic year but are not specific to the instructional levels on a daily basis (Deno, 1985). This issue becomes important when TATs follow up on previous referrals and try to ascertain learning outcomes. Ideally, by addressing this issue, measures have been forged that are sensitive to change.

Characteristic 3: Administration and Scoring Procedures

An important characteristic in all measurement is the manner in which assessment instruments are administered. To provide comparability in results, most assessment and measurement systems are based on standardized administration and scoring procedures. For example, the assessment model proposed by Howell and Morehead (1987) is very explicit in the administration and scoring of curriculum-based evaluations. A major premise of their work is that the response itself is a very meaningful unit for diagnosis; careful consideration must be given to definitions of errors and analysis of responses. Without clear understanding of the context for data collection, interpretations of outcomes are limited. Furthermore, with TATs comprised of several individuals, such clarity ensures a common language.

Characteristic 4: Type of Response

An important issue in any measurement system is the type of response that is generated by the person taking the test, with two types possible: production or selection (Hopkins & Antes, 1978). In a production response, the examinee actually constructs or produces the answer, which is then scored for correctness or quality. In a selection response, the examinee is provided the test stimulus and a range of options or answers, only one of which is correct. Curriculum-based assessment models include both production and selection responses (Gickling & Havertape, 1982; Howell & Morehead, 1987; Idol, Nevin, & Paolucci-Whitcomb, 1986; Tindal & Marsten, 1990). Obviously classrooms present many opportunities for both. Therefore, student performance data should be likewise diverse. Certainly, better problem-solving and error diagnostics is likely to occur with both a range and a heavy inclusion of production responses.

Characteristic 5: Technical Adequacy

Any measurement system must be reliable and valid to be used in making decisions about students (APA, AERA, NCME, 1985). All measures of achievement whether developed by curricular publishers or individual teachers, must have established technical adequacy. Many different studies have been completed on the technical adequacy of curriculum-based measurement, with most of the data very supportive. This research has been conducted in several parts of the country, with students from many different grade levels and ability groups, using a variety of methodologies and many different criterion measures (i.e., a variety of achievement tests, both criterion and norm-referenced; teacher judgment; classification differences; age differences; and growth over time) (Deno, Mirkin, & Chiang, 1982; Deno, Mirkin, Lowry, & Kuehnle, 1980; Deno, Mirkin, & Marston, 1980). Some highlights of findings from these studies are presented by the original researchers in a book edited by Shinn (1989). While we have emphasized CBA for use in helping TATs function, we argue that such data be very professionally planned, formatted, and collected. Furthermore, data should be integrated to identify important relationships so that TATs can better interpret outcomes.

Characteristic 6: Frequency of measurement

Most norm- and criterion-referenced tests are designed for single administrations; most behavioral measures involve repeated measurement, allowing comparisons of current levels and rates of performance changes to previous levels and rates. With a repeated measurement approach, which is an under-

pinning of a behavioral perspective (Tawney & Gast, 1984), the datum for summarizing performance is change over time or *slope of improvement*. Other dimensions that are available with frequent measurement include individual *variation across successive measures* and *overlap*, the percentage of data values within the same range (Scruggs, Mastropieri, & Castro, 1987; White, 1987), which provides a metric for quantifying changes in performance over time. As Parsonson and Baer (1978) note, the combination of these three indices within and across instructional phases generates a very rich and complex database for evaluating student performance. The issue of frequency of measurement with curriculum-based assessment has been investigated in a number of studies (Marston, 1988; Skiba, Marston, Wesson, Sevcik, & Deno, 1983; Tindal, 1983). For TATs to function within a SPIF perspectives data usefulness is a function of timeliness. If teachers come to TATs for help and decisions are to be truly data-based, then they must be capable of frequent collection in a short time period.

Characteristic 7: Display of Data

The manner in which data are displayed has important bearing on how they are used. Generally, graphic display of data has been considered instrumental in data utilization, with primary emphasis on line graphs (Tindal, 1987). In the research on graphic displays of student performance and data utilization, a number of issues have been addressed (Fuchs & Fuchs, 1986c), including frequency of measurement (Mirkin, Deno, Tindal, & Kuehnle, 1982), types of decision rules that accompany graphic displays of data (Mirkin & Deno, 1979), formative evaluation of instructional programs (Tindal, 1988), and graphic factors (like slope and variability) influencing judgments and interpretations (Tindal & Deno, 1983). Analysis of normative displays (Shinn, 1988; Tindal, Germann, & Deno, 1983), the shape of the distribution, and its normality also have been emphasized to facilitate data utilization. Again, the emphasis with TATs must be on easy-to-use systems. By employing visual graphs, outcomes can be more quickly identified and ascertained, both on the side of problem identification and program effectiveness.

Characteristic 8: Reference Guides for Data Interpretation

All numbers must be anchored to some type of reference, or comparison, to provide a meaningful interpretation, with three specific references possible: (a) norms, (b) criteria (absolute standards in a specific domain), and (c) previous performance.

In a norm-referenced interpretation, a student's relative position in a distribution is the most important interpretive index. A number of studies employ

curriculum-based measurement in this manner (Shinn, 1988; Tindal et al., 1983; Tindal, Shinn, & Germann, 1987).

The general definition of criterion-referenced interpretation is that (a) a specific domain of items is identified and (b) a sampling plan for selecting those items is operationalized. In most systems, a criterion for mastery is also defined (Shepard, 1984). Many books have been written that specifically detail procedures for developing criterion-referenced measures (e.g., Carey, 1988; Ebel & Frisbie, 1986; Popham, 1978; Roid & Haladyna, 1982) with the general focus on defining an appropriate universe of instruction from which to sample student learning. Most curriculum-based assessment systems are criterion-referenced, with well defined domains and established levels of mastery.

In an individually-referenced approach, the *progress* of the student is most important; therefore, the standard becomes rates of change over time. Using a single subject methodology (Tawney & Gast, 1984), slope of improvement replaces levels of proficiency, as the basic datum for evaluating programs (Deno, 1989). Research and practice appearing with CBM is replete with data using an individual-referenced approach. Tindal (1988) has summarized the literature on individual-referenced evaluations for two types: treatment and goal-oriented foci (Fuchs & Fuchs, 1986a; Tindal, Fuchs, Christenson, Mirkin, & Deno, 1981). Teacher Assistance Teams must have a menu of options available for understanding student performance to screen cases for appropriateness and monitor changes over time. By matching the appropriate reference to the problem, they can function more efficiently and powerfully.

Characteristic 9: Use in Decision-Making

Eventually, all curriculum-based procedures are used to help educators make decisions; however, the decisions for which they are applicable differ, in great part because of the previous characteristics. Generally, norm-referenced data are used to make screening/eligibility decisions and to evaluate overall program outcomes, while criterion- and individual-referenced data are used to plan and evaluate instruction (Tindal & Marston, 1990). Program decisions (screening/eligibility and program evaluation) tend to use norm-referenced data because of the need to generate comparable measures for many individuals over an extended time period; such data can be considered broad-band with low fidelity. In contrast, instructional decisions need to be specific to individual students over a more limited time period; these data are narrow-band with high fidelity. Shinn, Tindal, & Stein (1988) summarized

the research that has been conducted with the use of CBM to screen students and identify them as eligible for specialized programs. Tindal (1988) summarized the research on instructional decision-making and found that it primarily focuses on formative evaluation rather than the instructional planning, which is covered in the specific level assessments of Howell & Morehead (1987). Program evaluation research also is described by Tindal (1989) in which all three references—norm-, criterion-, and individual-referenced strategies—have been used to evaluate large scale programs. By considering all possible decisions, TATs can become more central in the entire delivery system of instruction. Furthermore, such decisions can be better integrated, increasing the utility of data at each decision phase. For example, with all previous eight characteristics and a broad view of screening, instructional evaluation, and eligibility, TATs can move students across regular and special education settings, as appropriate.

In summary the SPIF perspective hypothesizes that instruction can be most efficiently influenced by providing teachers with reliable and valid student outcome data and with skills in data utilization (Deno & Mirkin, 1977). The focus of the SPIF intervention is portrayed in the figure below through the use of bold arrows.

Summary of Two Perspectives

These two perspectives on staff development capture two prominent lines of inquiry and research appearing in the professional literature. They reflect a systematic effort to establish or enhance the requisite skills of general education teachers in their efforts to accommodate "at-risk" students. However, both are based on research and both provide a

theoretical rationale for the use of TATs in staff development. Process of Decision-Making in Consultation (PODIC) builds from the recent literature on teacher decision-making and effective teaching. It has a problem-solving emphasis and focuses on *process variables* (i.e., how are programs developed?). In contrast, Student Performance Information Feedback (SPIF) builds from the literature on learning assessment and data-based decision making. This perspective is *product oriented* (i.e., what is the effect?) in the development of viable programs. Consequently, SPIF first establishes and then enhances staff development efforts, because it introduces an entirely new conception of problem-solving.

Below is an example of a TAT operating from each perspective. The problem presented to the TAT involves a fourth grader who is struggling through the basal reader, making many reading errors in the group and on independent worksheets, and who is frequently off-task, not completing assignments. His work is almost as poor in math.

In the *PODIC* model, the TAT conceptualizes the problem from the teacher's vantage. As they organize the process, they concentrate on decision-making and problem-solving as a function of the teacher's knowledge of learning, students, lesson structure, and subject matter. For example, the following questions may be pertinent: What are the goals of the lesson and expectations of the student? How is the reading (math) material organized? What lesson structure facilitates delivery of instruction in that curriculum area? What instructional or curricular adaptations are possible with that teacher? Teachers prepare their referrals for the TAT with these issues in mind; the TAT then clarifies the problem and brainstorms solutions; a follow-up

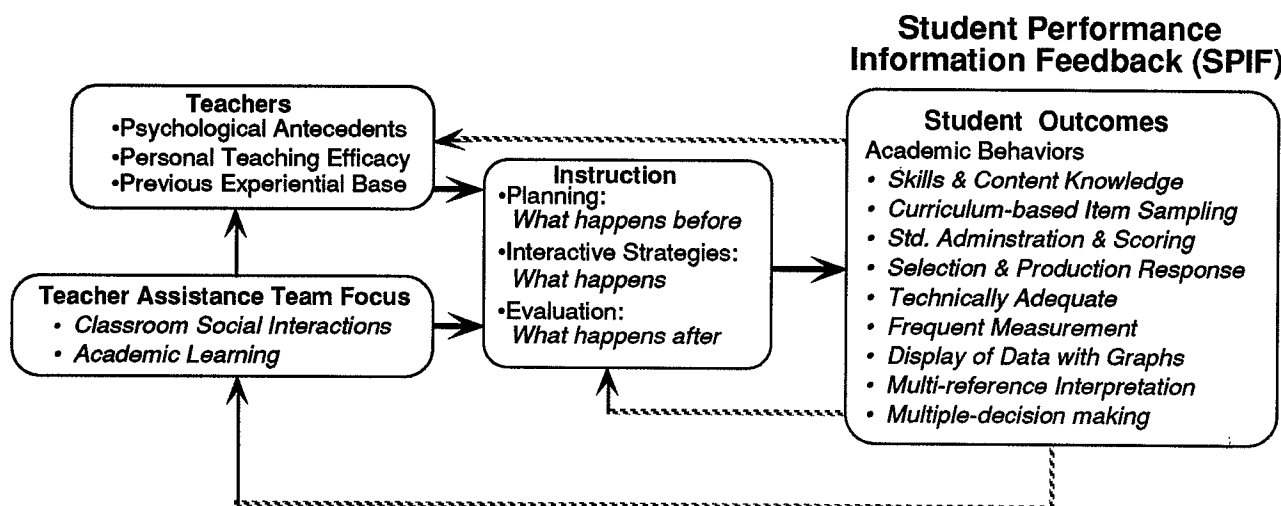


Figure 3. Student Performance Information Feedback Model (SPIF)

meeting is held to assay reactions and clarification of the perceived impact of instructional adjustments.

The SPIF perspective begins with the teachers' expectations of learning and operationalizes an assessment system that is used to give feedback following the nine principles outlined above. For example, teachers would be asked to define their instructional plans to help clarify their learning expectations. This information then is used to develop appropriate skills or knowledge assessments that are: curriculum-based, standardized, production behavior samples, technically adequate, frequently administered, graphically displayed, oriented to a meaningful reference, and useful in making a variety of decisions. The instructional definition, used to operationalize expected learning outcomes, is analyzed in the TAT and adjusted to better accommodate the student. Teachers are trained to prepare referrals using learning outcome data. The goal of this perspective is to see changes in student performance as a consequence of this adjustment. Problem-solving during the TAT clarifies problems in relation to these learning outcomes and helps define both potential instructional adjustments as well as sensitive learning assessments. Follow-up meetings held, 2 to 3 weeks later concentrate on the student's performance in order to make further decisions.

CONCLUSION

In this essay, we have presented two very different models for implementing TATs based on very divergent assumptions of decision-making and behavior change. While both models place the locus of control with teachers, they differ in the type of information upon which decisions are made. The Process of Decision-Making in Consultation model is built upon the reflective-teaching literature, while the Student Performance for Instructional Feedback is based on behavioral assessments.

While the PODIC model is more broad, it is also more indirect; change in actual teaching is assumed to occur when teachers have been allowed an opportunity to think about their practices. In contrast, the SPIF model focuses more narrowly on specific student outcomes and directly targets behavior change by the teacher to faster improvement. In the end, however, both models are radical departures from current practice, which provides no guidance in any kind of cogent decision-making.

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Essay 3

Explicating an Empirical Model of Training in Consultation

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Gerald Tindal

Presented here is an alternative model of special education, based on consultation. We will first explain the need for this model and then present its two major components. Because new programs should be based on what we already know, rather than starting anew, we will summarize the research literature on the consultation process. Key components must be identified, without which success of any alternative is unlikely. Second, we will identify and describe a series of five specific methods competencies. Much like any teaching methods content, these areas represent behavioral strategies for working with curriculum, instruction, learning, and evaluation. In the end, without these competencies, the consultation process is a hollow practice.

PROBLEMS WITH TRADITIONAL DELIVERY OF SPECIAL EDUCATION SERVICES

Traditionally, special education services have been provided to mildly handicapped students in settings other than regular-education classrooms. In the *Thirteenth Annual Report to Congress* (U.S. Department of Education, 1991), it was reported that 58% of our learning-disabled children and youth are served in resource rooms, while another 21% are served in separate classes. In contrast, 30% of the emotionally disturbed children and youth are served in resource rooms, with 36% served in separate classes; over 13% of this population are served in separate facilities. Inherent within this service delivery model is minimal opportunity for interaction between regular and special education systems or personnel (Lilly & Givens-Ogle, 1981). As noted by Gerber and Semmel (1984), special education has evolved as a separate system that "assumes responsibility for difficult-to-teach children" (p. 145). The development of separate programs for handicapped students has proved convenient for regular educators (Reynolds, 1984); special educators have assumed the role of "trouble-shooter" for regular education (Senf, 1981), requiring them "to take the problem off the hands of the classroom teacher" (p. 111). Unfortunately, this transfer of responsibility often results in little or no

collaboration between regular and special educators. This traditional "pull-out" model of special education, where handicapped students are removed from the regular-education setting and are provided services in other settings, recently has received much criticism. Lack of data supporting the efficacy of the "pull-out" model, concern with potential biasing effects from ascribing labels to students, and requirements to educate students in the least restrictive environment (LRE) are the major problems currently facing special education.

Some of this criticism stems from the fact that research has failed to demonstrate that this service delivery model is effective. For example, Carlberg and Kavale (1980) found a slight negative effect size when they analyzed the results of nearly 50 studies conducted over the past 4 decades. This finding didn't change much when the analysis was done for separate subgroups of students (e.g., educable mentally retarded, learning disabled, or behaviorally disordered). This outcome may result from the lack of real differences in instructional programming between general and special education. According to Haynes and Jenkins (1986), special education students seldom receive anything different from that offered in general education, the net effect of which is remarkably similar environments and behavioral responses.

The assumption that handicapped students comprise a unique and distinct subset of children has been used to justify the existence of separate programs for regular and special education students. This assumption also has been the basis for the differential treatment of special and regular education students, and has led to the belief that different forms of educational treatment are "uniquely advantageous for identified subsets of children" (Reynolds, 1984). However, aptitude-by-treatment interaction research has not demonstrated that categorical differences predict the kinds of academic treatment or instruction from which different categories of students will benefit (Lloyd, 1984; Reynolds, 1984).

Another criticism of the "pull-out" programs is that they may not meet the spirit or intent of the

Education for All Handicapped Children Act (PL 94-142, 1975) and its subsequent revision, Individuals with Disabilities Education Act (1991), which mandates that children with disabilities be educated, to the greatest extent possible, in a "least-restrictive" environment with their non-handicapped peers. Undoubtedly, the educational needs of at least some handicapped children could best be met in the regular education classroom.

NEW APPROACHES TO SERVICE DELIVERY USING CONSULTATION

Discussion of mainstreaming handicapped students is intensifying through proposals such as the Regular Education Initiative (cf. Will, 1986; Wang & Reynolds, 1985) or the merger of regular and special education (Stainback & Stainback, 1985). Other alternatives include team teaching, peer tutoring, and/or the provision of support services by special educators to regular education teachers who have handicapped students in their classrooms (West & Idol, 1987).

Regular education teachers who, in the past, received little training in the instruction of handicapped students (Meyers, 1975), now are faced with increased instructional and management demands when handicapped students are placed in their classrooms (Reisberg & Wolf, 1986). The successful education of handicapped students in mainstreamed settings might be facilitated if special educators provide support services to regular educators. Collaborative consultation is one form of educational support that is being used with greater frequency to educate handicapped students in regular education settings (West & Brown, 1986; West & Cannon, 1988).

Advantages of consultation over prevailing service delivery systems include its cost effectiveness, the potential for generalized benefits to greater numbers of students (Bergan, 1977), provision of educational services in the least restrictive environment, minimalization of labeling (Reschly, 1976), increases in the services available to children, and the potential for providing regular educators with training in new skills (Idol-Maestas, 1983).

Most forms of consultation are based on Tharp's (1975) triadic model. This model assumes that there are three participants in any consultative relationship: the *consultant* (special educator), who provides direct services to the *consultee* (regular classroom teacher), who in turn provides direct services to the *client* (problem student). Predicating consultation training on this model, Idol, Paolucci-Whitcomb and Nevin (1986) have summarized the main benefits of this perspective, noting that (a) both the consultant and the consultee share their expertise, (b) increased

communication among professionals results, (c) other contacts within the community are more likely, (d) categories of exceptionality are ignored in favor of a concern for problem solving, and (e) a student-centered approach is utilized to solve problems more creatively.

In spite of these perceived benefits, better research on the process and the outcomes is needed if we are to seriously consider adopting the model. Simply achieving consensus on both a definition and an operating model may be a very important first step. Ideally, such information is a result of well-conducted research providing empirical justification in applied settings. If it is not, problems may ensue that preclude full-scale change and development of alternative service delivery systems.

The two major areas in need of explication include research on the consultation process (demands and skills of the consultant) and the outcomes (for both teachers and students). However, in considering this research, we must not only be attentive to specific findings, but to the methodology, as well. Our alternative delivery model contains two major components: (a) a *process* within which teachers work as consultants, and (b) specific methods competencies that they use in serving students. Figure 1 depicts the major components of a consultation training program. Our model delineates four process areas used within a collaborative framework and five major competency areas within which teachers need training.

The Process of Consultation: Features and Characteristics

An underlying premise of many forms of consultation is that the relationship between consultant and consultee is collaborative. Oftentimes, a great deal of participation is required of the consultee because a secondary objective may be to increase the consultee's ability to deal with similar problems in the future (Bergan, 1977). As noted by Friend (1985), most definitions of consultation mention collaboration between participants; many definitions of consultation also assume that the consultant and consultee possess equal, albeit different, areas of expertise.

According to McClellan and Wheatley (1985), collaborative consultation enables people with diverse expertise to generate solutions to mutually defined problems. Specifically, collaborative consultation promotes "team ownership of the education of handicapped learners in the mainstream" (p.159). Similarly, Idol, Paolucci-Whitcomb and Nevin (1986) define collaborative consultation as "an interactive process that enables people with diverse expertise to

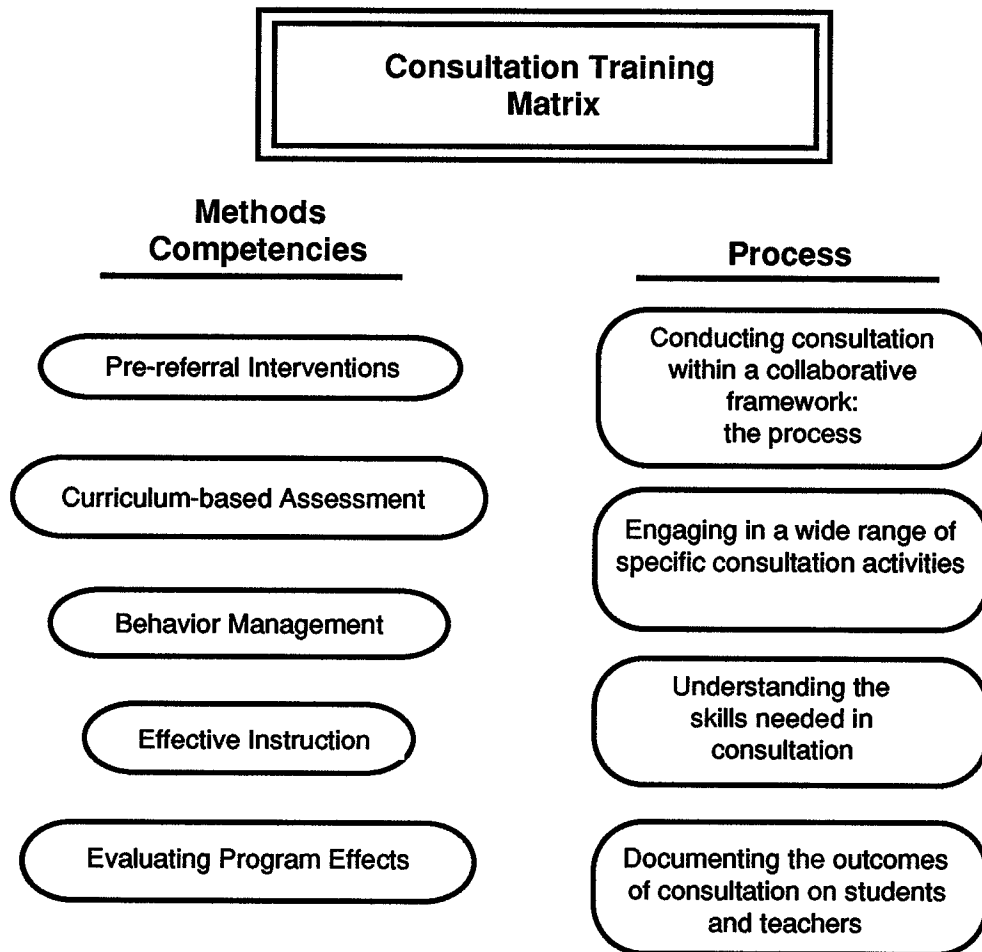


Figure 1. Major Components of a Consultation Training Program

generate creative solutions to mutually defined problems...The major outcome of collaborative consultation is to provide comprehensive and effective programs for students with special needs within the most appropriate context, thereby enabling them to achieve maximum constructive interaction with their non-handicapped peers" (p. 1). Huefner (1988) characterizes collaborative consultation as regular and special educators sharing the planning of and responsibility for instructional outcomes.

An underlying assumption in collaborative consultation is that the regular and special educator are interdependent, and that both will learn and benefit from the mutual problem-solving process (West & Idol, 1987). Attending to collaboration in the consultative relationship may be important, for, as Pryzwansky (1974) noted, teachers prefer a collaborative approach to consultation. Furthermore, he stressed that school consultants who adopt a more "expert" type approach are less likely to succeed in consultative interactions. Gutkin and Bossard (1984)

also reported that teachers express a preference for consultative rather than traditional diagnostic services from school psychologists, as did Babcock and Pryzwansky (1983). They found that both teachers and administrators expressed a preference for collaborative consultation. Results of West's (1985) survey of 701 regular and 65 special educators from 13 school districts in Texas confirmed this preference for a collaborative approach to the delivery of consultative services. It should be noted that these studies examined only the preferences of these educators; they do not necessarily indicate that a collaborative model was being implemented by these parties.

The Demands of Consultation

Four studies have been conducted that investigate the time consultants spend in certain activities. In one of them, five consultants were involved in a training/research project over a 2-year period (Nelson & Stevens, 1981). Consultants worked 1 day per week, and although they assisted each other on cases, only one consultant was in a building on any

given day. An informal process was utilized during referral and consultation, with at least weekly monitoring as follow-up. The purposes of the study were (a) to analyze the outcomes in terms of success in attaining specific objectives, and (b) to document the "allocation of the consultant's time among various activities" (p. 83). All consultants kept track of time engaged in (a) consultation, (b) observation, (c) meetings, (d) preparation and planning, (e) administrative assistance, (f) supplementary services, and (g) direct services in both regular and special class settings. Breakdowns of specific activities were provided within each category that helped elaborate essential meaning. For example, *observation* included informal, baseline data collection, ongoing data, and a reliability check. However, no specific definitions were given for any of these activity breakdowns.

Two summaries were aggregated for (a) indirect services and direct services, and (b) for each category, as well as all breakdowns within the category. In Year 1, they found that consultants were in the regular classroom providing direct services only 10% of their time. The vast majority of time was spent on indirect services. Approximately 25-30% was in *consultation*, 12-13% in *observation*, 19-21% in *meetings*, 10-12% in *preparation and planning*, and 16-17% with *administration*. Almost no time was given to *supplementary services*. Further breakdowns of each category also were provided. For consultation, the greatest percentage of time was devoted to *intervention* (72-75%). In observation, consultants spent most of their time using *informal* procedures (58-71%). Nearly half the time in meetings was spent with the *center staff*. The largest percentage of preparation time was devoted to *writing intervention programs* (25-35%). *Center administration* (92% for Year 1) and *record keeping* (63% for Year 2) consumed the majority of administrative assistance time. All of the time engaged in supplementary services was given to *provision of materials* in Year 1 and *presenting workshops* for Year 2.

A major problem with this study was that no operational definitions were provided for the various categories or activities. The authors provided the terms italicized above, but gave no further descriptions. A related problem was the lack of reliability for measurement of time. The manner in which the consultants measured or recorded their time in these activities was not described (i.e., when the consultants wrote down the time and what mechanism they used to record it).

In another effort to "verify the workings of resource programs," Sargent (1981) collected data on the percentage of time that resource teachers spent on (a) directly instructing, (b) consulting with staff,

(c) consulting with parents, (d) conducting inservice training, (e) preparing and planning for instruction, (f) participating in staff meetings, (g) assessing and evaluating, (h) preparing and maintaining Individual Educational Programs (IEPs), (i) keeping records, and (j) performing general school duties. Using a survey questionnaire, he obtained results from 132 resource teachers in five states on (a) time spent on each activity, and (b) percentage of time needed "to perform each activity adequately" (p. 421). A systematic observation of 30 randomly selected teachers was conducted to verify the reliability of the time estimates made by them.

He found that consultants spent the majority of time in direct instruction (51%). The next highest time expenditure was in preparation for instruction (16%). Approximately 10% was given to three activities: assessment and evaluation, consultation with staff, and general school duties. Only a small percentage of time was spent on all remaining activities. For three variables—direct instruction, preparation for instruction, and evaluation—significant differences were obtained between the time estimated as necessary and that which was actually observed, raising doubt about the reliability of the estimates. The distribution of estimates and recordings of time were not related to the number of pupils served. In reviewing the limitations of the research, Sargent noted that "the most important needed research on time use will identify priorities for the resource teacher time use" (Sargent, 1981, p. 425).

A third study, Evans (1980), focused on the consulting role of resource teachers and the impact of certain variables with successful consultation. The 240 teachers in the survey included three resource teachers and one regular education teacher from each of 34 districts. She found that consulting resource teachers typically possessed a master's degree, special education credentials, and standard certification; and all worked in large districts. The activities in which they were involved included: assessment, clerical, communication, consultation, diagnosis, instruction, planning, and "other." She found that the extent of actual consultation was half the amount respondents thought it should be, accounting for only 5% of resource teachers' time. The majority of time was spent in instruction (57%), while 10% was consumed by clerical tasks and 5%-6% by all remaining activities.

In a fourth study, by Haight and Molitor (1983), 42 special-education teacher consultants were surveyed about their job responsibilities and caseloads. Of the 24% who had consultation job descriptions, the majority said they allocated 50%-75% to diagnosis, planning, and placement commit-

tee meetings. Interestingly, consulting was not a primary job responsibility; 29% of the respondents spent less than 5 hours per week and 40% spent between 5 and 19 hours per week. Almost half of them did not have consultation time scheduled into their daily activities.

While the four studies described provide an operational definition of consultation, a conceptual definition is also needed for the model to be robust. That is, certain features should be consistently present in practice for a replicable model to emerge that is not bound by the specific individuals present. Otherwise, if consultation is wholly explained by or predicated upon the individuals, the potential for training and adoption is either nil or accidental.

THE SKILLS NEEDED IN CONSULTATION

Several researchers have attempted to identify a consultant's essential skills (Friend, 1984; Idol-Maestas & Ritter, 1985; West & Cannon, 1988). Most often, researchers give educators a list of skills or characteristics deemed requisite to effective consultation. The educators are then asked to rate the extent to which each skill should be possessed by the consultant.

Friend (1984) administered a questionnaire comprised of 17 specific consultation skills to principals, regular, and special education teachers. Some of the skills identified as critical for special education consultants reflected collaboration, such as explaining a resource teacher's perception of a problem to a regular educator, including regular educators as equal partners in planning and implementing programs for mainstreamed students, meeting regularly with other classroom teachers to discuss shared pupils, and using specific strategies to facilitate interpersonal communication with regular education teachers.

West and Brown (1986) conducted a survey of the policies on consultation in special education for 36 State Departments of Education. They utilized a questionnaire focusing on the following five special education program and personnel areas:

1. Service delivery models including consultation as an expected role of the special educator.
 2. Consultation roles/responsibilities of special educators.
 3. Consultation competencies of special educators.
 4. Certifications including consultation responsibilities.
 5. Professional special educator titles including consultation responsibilities.
- (West & Brown, 1986, p. 5).

These researchers found that many of the consultation competencies identified by the respondents emphasized skills in collaborative communication and problem-solving.

Idol and West (1987) reviewed eight university-based special education consultant training programs and found that only the University of Pittsburgh training program (San Nicolas, Peabody & Moore, 1986) provided validation by experts of the competencies needed by special educators acting in a consultant role. The most highly rated competencies identified by their panel of 145 experts were "establishing collaborative problem-solving relationships, participating in student placement procedures, collaborating with others in academic program implementation and use of instructional materials, and coordinating programs to effect changes in students' social and behavioral adjustment" (West & Cannon, 1988, p. 57).

While general definitions and operational descriptions (of both the activities and skills of consultants) are important in explicating consultation, verifying the outcomes is absolutely critical for the model to seriously overcome past problems. Otherwise, we'll likely find ourselves in the same problem that currently characterizes traditional pull-out programs: no support. What are the effects on students (clients), teachers (consultees), and systems when consultation is implemented as an alternative service delivery model for students with handicaps?

THE OUTCOMES OF CONSULTATION

Generally, consultation activities can be conducted with minimal time investments and result in a high degree of accomplishment (Dickinson & Adcox, 1984). In an analysis of 29 studies on the effectiveness of school consultation, Medway, (1979) found that 22 of the studies (76%) showed one or more positive results of consultation effectiveness. Findings of other studies on the outcomes of consultation include the following:

- Ritter (1978) found that the provision of consultative services resulted in decreases in the number of referrals teachers made over time. She suggested that the consultation support helped teachers develop their own skills in coping with difficult students without the need for frequent consultation.
- Consultation resulted in significant achievement gains for students at all levels of intellectual functioning. Furthermore, consultation services led to lower referral rates in later years (Cantrell & Cantrell, 1976).
- An evaluation of a prereferral consultation program by Dickinson and Adcox (1984) demonstrated that the average IEP objective for a behavior

problem was achieved to 82% of criterion while the average objective for a learning problem was achieved to 85% of criterion during a 10-week period.

- Significant reductions in observed and rated behavioral problems occurred in classes where behavioral consultation had been provided. Teachers rated behavioral and process consultation, as opposed to ecological consultation, as most beneficial and helpful (Jason, Ferone, & Andereg, 1979).

- Teachers who received consultation services were more confident in their abilities and showed more professional growth than those who did not receive such services (Teitelbaum, 1961).

- Consultation changed the behavior or attitudes of consultees, and/or improved clients' behavior (Mannino & Shore, 1975).

- Behavioral consultation helped in assisting teachers modify their instructional technique to promote children's learning (Bergan, Byrnes, & Kratochwill, 1979).

- Classroom teachers who worked with highly skilled consultants improved in their problem clarification skills following consultation. Working with these consultants increased both the quantity and quality of information provided by consultees (Curtis & Watson, 1980).

- Consultation led to systems-level changes in schools, enhancing their organizational effectiveness; it resulted in greater use of problem-solving groups to address systems-level problems as well as those problems that directly affect the delivery of service to individual students. Following consultation, communication between the staff and the principal as well as among staff members improved noticeably (Curtis & Metz, 1986).

- Meyers (1975) found that consultee-centered consultation with a teacher regarding that teacher's attitudes and feelings produced measurable changes in the behavior of children in the classroom.

SUMMARY OF

CONSULTATION LIMITATIONS

Consultation-based service delivery programs are being considered in response to criticism of current programs for students with learning problems. Consultative support is congruent with the development of alternative team-based approaches, the regular education initiative, and the merging of regular and special education. However, few programs are available for systematic training in several areas: engaging in specific and constructive consultation activities, developing collaboration between the consultant and the referring teacher, understanding the relationships among student behaviors and achievement, and evaluating perceptions of accomplishments. Future training needs to focus on how

consultation influences specific instructional behaviors and why it may affect some behaviors and not others (Bergan, Byrnes, & Kratochwill, 1979). Training on consultation activities is required in the natural environment, and it must be cognizant of the collaborative process. We need outcome measures that are efficient to construct and administer and maximally reflect local classroom materials, lessons, and structure.

It would be a mistake simply to train special education teachers and expect any substantial changes in the ways special education programs are delivered. To make an effective impact on service delivery, a model must be developed that moves beyond traditional "pull-out" systems and effectively implements the concept of the least restrictive environment (LRE). A consultation model is a particularly viable alternative.

METHODS COMPETENCIES

The five method competencies areas include (a) development of pre-referral interventions, (b) use of curriculum-based assessment to formulate instructional plans and eventually formatively evaluate the effects from those plans, (c) development of suitable behavior management plans, (d) implementation of effective instructional programs, and (e) evaluation of program outcomes.

Pre-Referral Interventions

One critical variable in identification and assessment of learning and behavior problems in the regular classroom is when this identification/assessment occurs. In recent years, pre-referral intervention (PRI) often has been suggested as a remedy to many of the deficiencies of current special education identification practices (Graden, Casey, & Bonstrum, 1985; Graden, Casey, & Christenson, 1985; Heller, Holtzman, & Messick, 1982; National School Psychology Inservice Training Network, 1985; Ysseldyke & Regan, 1980). Such interventions are developed and implemented prior to any formal referrals. It is hypothesized that changes in regular education classroom interventions will result in more appropriate (and fewer) special education referrals by distinguishing those students who are casualties of inflexible or inadequate classroom instruction from those who are truly disabled children. Furthermore, it is hypothesized that through improvement of regular education instructional skills, there will be increased ability to educate both regular and special education children in the least restrictive environment.

All PRI models share the following procedural features:

1. At the point of referral, alternative services are prescribed by resource consultants and provided to

the student in the regular education setting.

2. After a short period of intervention, instructional effects are evaluated.

3. The decision to subsequently place a student in a special education program is contingent upon the success of the prereferral intervention. Those students for whom accommodations in the regular education environment are successful are not certified as disabled. Those for whom accommodations in instruction are not successful are certified as disabled (if consistent with other eligibility data). Once a child is certified as disabled, a continuing commitment is made by the special and regular class teachers to establish an educational program within the regular class, but with direct or consultative (indirect) support by the special education teacher. The implication in PRI models is that short-term interventions in regular education instruction are possible, resulting in increased achievement for students.

Curriculum-Based Assessment

With recent advances in assessment technology, procedures now are available to ensure that learning can be measured reliably and validly and that student progress decisions can be objective, rather than reliant upon subjective opinions. Furthermore, documentation of outcomes can then be used in conjunction with other data by the multi-disciplinary team to influence the potential certification of a student as disabled. Finally, these outcomes may be sufficient to allay teacher concerns about a student's possible disability (changes in attitudes regarding teachability, for example).

Until recently, the field of special education has lacked dependent measures that were reliable, valid, and sensitive to student improvement in the regular education classroom during short-term instructional interventions, and that could be used to assess the effects of consultation and instructional programs in the regular classroom setting. Classroom and curriculum-based assessment (CBA) procedures, which were developed and researched through extensive investigations begun at the University of Minnesota, can serve as dependent measures to evaluate pre-referral interventions with potentially disabled students. Researchers have investigated these dependent measures for evaluating short-term instructional treatments in time-series designs for individuals. On the basis of this research, we know following:

1. CBA is time-efficient and cost-effective in reading, spelling, written expression, and math (Deno, Mirkin & Chiang, 1982; Deno, Mirkin, Lowry, & Kuehnle, 1980; Deno, Marston, & Mirkin, 1982).
2. The measures are highly reliable and demon-

strate content, criterion, and construct validity (Tindal, Marston, & Deno, 1983; Tindal et al., 1985; Deno, Marston, Shinn, & Tindal, 1983; Marston, Tindal, & Deno, 1984).

3. The measures are more sensitive to improvement in student achievement than other available technologies, such as published achievement tests (Marston & Deno, 1982; Marston, Deno, & Tindal, 1983).

4. The measures are highly sensitive to growth under short-term treatments that allow validation of successful changes made in instructional programs within the least restrictive environment (Marston, Lowry, Deno, & Mirkin, 1981; Deno, Marston, Mirkin, Lowry, Sindelar, & Jenkins, 1982; Tindal, Germann, & Deno, 1983).

5. Use of these measures in a formative manner can lead to significant and positive achievement gains for special education students and can increase the degree of instructional structure and effective teacher practices (Fuchs, Wesson, Tindal, Mirkin & Deno, 1982; Fuchs, Deno, & Mirkin, 1984).

In summary, these findings show that CBA procedures are a viable dependent measure for evaluation and validation of PRI strategies.

Effective Instruction

Special education personnel have lacked sufficient training in powerful, replicable, implementable, and unobtrusive *teaching strategies* that impact student achievement in the regular classroom setting. With respect to current instructional practices, both regular and special education teachers are limited in the number and types of interventions they implement with students (Thurlow & Ysseldyke, 1983). When faced with ineffective instructional programs, teachers often report few or no alternative instructional methods. They also may be unaware of the importance of behavior management skills and the relationship of classroom environment and discipline to student achievement.

Yet, recent research activity has resulted in a high degree of congruence in the relationship between instructional/learning behaviors and achievement (Brophy & Good, 1986). These behaviors include:

1. High instructional engagement time by students, especially in regard to academic learning time, or the amount of time the student spends working successfully on appropriate material (Fisher & Berliner, 1985).
2. Structured presentation using a model-lead-test format, in which students are supplied a variety of tightly controlled examples.
3. Regular and systematic feedback and corrections to students.

4. Logically sequenced learning tasks that are appropriate to the learner's achievement level and broken into incremental steps.

5. High expectations and clearly specified performance requirements.

6. Reduction of transition and management time, and activities indirectly related to academic performance.

7. Employment of procedures for monitoring students within and across lessons.

The variables identified as critical in affecting achievement for regular education students also are important for students with handicaps. As educators investigate the learning process, myths regarding mystical and complex instructional strategies that must be employed with handicapped students have been dispelled. Consequently, special educators are expressing more interest in addressing learning needs that may be met in regular education.

Behavior Management

Although a causal relationship between academic and social behavior problems cannot be delineated, it is clear that teachers must have the skills to manage both types of problems. Teachers frequently indicate that training in behavior management skills is one of their highest pre-service and in-service training needs. In addition to basic classroom management skills, they are concerned about effective strategies for (a) teaching students to spontaneously interact, (b) engaging students in appropriate social interactions, and (c) dealing with extreme, persistent, and dangerous behaviors (Siewert, 1986). The technology for accommodating students with these types of behavioral problems in public school settings is well-developed, but not widely adopted.

Applied behavior analysis (ABA) strategies have been widely adopted to help teachers ameliorate behavior problems in the classroom (Alberto & Troutman, 1986; Wolery, Bailey, & Sugai, 1988). The ABA approach stresses (a) student behavior targets that are socially important, (b) direct observation and manipulation of student performance, (c) empirically validated laws and principles of behavior, and (d) an analytic approach to identifying cause/effect relationships.

Evaluating Program Effects

Orderly procedures for evaluating the effectiveness of short-term interventions are necessary for objective and valid interpretations of student progress in alternative regular education programs. In conjunction with curriculum-based assessments that are capable of efficient and timely repeated measurement of student achievement, objective decisions can be made regarding student progress and success with mainstream curricular modifica-

tions. The use of student progress data collected over time is invaluable in determining the success of changes in the regular education classroom. A student's performance can be contrasted from a baseline condition (no PRI—regular education instruction only) to a treatment condition (PRI—modifications in regular education instruction) and/or the rate of achievement can be compared to an expected rate of progress. Using the subject as his/her own control avoids many of the serious threats to internal validity that preclude the determination of effective changes in educational programming (c.f., Tindal, 1988, 1989, 1990).

In summary, consultation-based programs may be an adequate alternative to traditional special education pull-out programs if these content areas are addressed. It is certainly efficacious in serving students quickly and conveniently without testing and labeling students. It is not, however, without its own requirements. Generally, consultation has not been systematically implemented on a large enough scale to fully appreciate the effects. Very few models of consultation have been explicated in either training programs or practice. Nevertheless, even with minimum implementation and ill-defined models, many significant outcomes have been achieved. Such outcomes could become even more significant if training and practice highlighted five content areas: pre-referral intervention, curriculum-based assessment, behavior management, effective instruction, and evaluating program effects.

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