DOCUMENT RESUME

ED 304 871 EC 220 543

AUTHOR Tucker, James A.
TITLE Guiding Instruction Effectively by Using Curriculum-Based Assessment. Every Student Needs Something Special in Education.
PUB DATE 3 Apr 89
NOTE 42p.; Paper presented at the Preconvention Training Program "Exploring the Theory/Practice Link in Special Education" at the Annual Convention of the Council for Exceptional Children (67th, San Francisco, CA, April 2-3, 1989).
PUB TYPE Speeches/Conference Papers (150) -- Guides - Non-Classroom Use (055)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Data Collection; Diagnostic Teaching; *Disabilities; Elementary Secondary Education; *Instructional Effectiveness; Referral; Special Education; *Student Evaluation; Student Placement; *Teaching Methods; Theory Practice Relationship
IDENTIFIERS *Curriculum Based Assessment

ABSTRACT

Curriculum-based assessment (CBA) represents a shift from use of standardized tests as quantifiers of student achievement toward traditional data-based instructional management. The role of assessment in educational programs is explored through presentation of three contrasting perspectives: assessment for placement versus assessment for instruction, education for the handicapped versus special education, and bureaucratic form versus educational reform. The CBA approach requires mechanisms for the collection of data and higher expectations of students. Instructional assistance involves motivating the student, teaching to mastery, and practicing until the skill becomes automatic. CBA can eliminate a large proportion of referrals to special education and expensive pull-out programs through use of more effective instructional strategies. The CBA concept rests on the finding that students learn better when taught at the "instructional" level, where a student already knows 93% to 97% of the material to be read or 70% to 85% of the material to be practiced in drill. An example of applying CBA to reading instruction presents techniques for word recognition, fluency, and comprehension. The appendix contains descriptions of schools that have implemented CBA. (JDD)

GUIDING INSTRUCTION EFFECTIVELY BY USING CURRICULUM-BASED ASSESSMENT
Every Student Needs Something Special in Education

By James A. Tucker, Ph.D.
Director, Bureau of Special Education
Pennsylvania Department of Education

Pre-Convention Training Session
67th Annual Convention
Council for Exceptional Children
San Francisco, California

April 3, 1989

Harrisburg, Pennsylvania 17126
Pennsylvania Department of Education

Instructional Excellence

"Excellence occurs when the instructional system is able to provide the individual learner with an appropriate level of challenge and a realistic opportunity to succeed on a frequent and continual basis for each instructional goal in the program."

Spady (1984)

Consequently, today CBA means at least three different things based on its treatment in the current literature (Marston, in press): Curriculum-based Assessment as used to provide a basis for specific instructional planning (Gickling & Thompson 1985; Hargis 1987); Curriculum-Based Measurement (Deno 1985); and instructional consultation based on data drawn from student performance in the curriculum (Blankenship 1985). All three of these perspectives are valuable, and all three points of view provide strong support for improved instructional services.

If accompanying these three areas of concentration there were a strong movement to forge ahead and demonstrate the effectiveness of proven instructional strategies based on the data achieved from curriculum-based assessment, I would be cheering. But when terms like CBA become popular, there is a tendency toward reduced quality and increased quantity of their use. For example, just knowing the term CBA and having a smattering of facts about its history and development does not mean that you know why it is important; it does not mean that you know how to use it either. So what good is it to have everybody talking animatedly about something that they know only a little bit about. As the saying goes, a little knowledge is a dangerous thing. Without an adequate understanding of what is involved, the naive listener or reader can pick up on the excitement, learn the words, and use them to impress his/her associates. You can be in without knowing what you are into.

And before you know it, well-meaning but relatively uninformed professionals who recognize the tremendous power inherent in a catchy new term have incorporated the new term to describe an old program that was never effective--old wine in new bottles, if you please. The unsuspecting public sees the new term applied to a particular idea and takes it up eagerly. Of course the old idea still doesn't work. It never did! But now the idea that doesn't work is called CBA. Presto! The logical leap is inevitable--"CBA doesn't work". And then a generalized judgment is quick to follow--"CBA is just another one of the many fads which have come and gone."

While it is true that the assessment and instructional concepts included under the term "curriculum-based assessment" are not new, and while it is just as true that they are simple and effective, that does not mean that they can be implemented with ease. There are a number of issues that must be addressed, not the least of which is training (Coulter, 1985). But even before training takes place, there must be a clear understanding of what Curriculum-based Assessment is--and what it is not.

So, before proceeding any further, let me clearly define just what CBA is to me, as well as stating what we intended it to be in the beginning.

"Curriculum-based Assessment is a procedure for determining the instructional needs of a student based upon the student's ongoing performance within existing course content." (Gickling & Havertape 1981)

Consequently, today CBA means at least three different things based on its treatment in the current literature (Marston, in press): Curriculum-based Assessment as used to provide a basis for specific instructional planning (Gickling & Thompson 1985; Hargis 1987); Curriculum-Based Measurement (Deno 1985); and instructional consultation based on data drawn from student performance in the curriculum (Blankenship 1985). All three of these perspectives are valuable, and all three points of view provide strong support for improved instructional services.

If accompanying these three areas of concentration there were a strong movement to forge ahead and demonstrate the effectiveness of proven instructional strategies based on the data achieved from curriculum-based assessment, I would be cheering. But when terms like CBA become popular, there is a tendency toward reduced quality and increased quantity of their use. For example, just knowing the term CBA and having a smattering of facts about its history and development does not mean that you know why it is important; it does not mean that you know how to use it either. So what good is it to have everybody talking animatedly about something that they know only a little bit about. As the saying goes, a little knowledge is a dangerous thing. Without an adequate understanding of what is involved, the naive listener or reader can pick up on the excitement, learn the words, and use them to impress his/her associates. You can be in without knowing what you are into.

And before you know it, well-meaning but relatively uninformed professionals who recognize the tremendous power inherent in a catchy new term have incorporated the new term to describe an old program that was never effective--old wine in new bottles, if you please. The unsuspecting public sees the new term applied to a particular idea and takes it up eagerly. Of course the old idea still doesn't work. It never did! But now the idea that doesn't work is called CBA. Presto! The logical leap is inevitable--"CBA doesn't work". And then a generalized judgment is quick to follow--"CBA is just another one of the many fads which have come and gone."

While it is true that the assessment and instructional concepts included under the term "curriculum-based assessment" are not new, and while it is just as true that they are simple and effective, that does not mean that they can be implemented with ease. There are a number of issues that must be addressed, not the least of which is training (Coulter, 1985). But even before training takes place, there must be a clear understanding of what Curriculum-based Assessment is--and what it is not.

So, before proceeding any further, let me clearly define just what CBA is to me, as well as stating what we intended it to be in the beginning.

"Curriculum-based Assessment is a procedure for determining the instructional needs of a student based upon the student's ongoing performance within existing course content." (Gickling & Havertape 1981)

There are three vital points in that definition: First CBA is a procedure for determining the instructional needs of a student. Assessment data, even if it is drawn from the student's performance in his curriculum, that does not translate directly into instructional strategies to improve that student's performance is not CBA according to this definition. It may be curriculum-based measurement and very useful in making decisions about the student's program or placement, but unless the data provides a direct link to instructional strategies, it is not Curriculum-based Assessment.

Second, this definition is drawn from the student's ongoing performance. Assessment of ongoing performance implies a frequent measurement of student behavior--certainly not a quarterly or annual review. "Frequent" means daily or at least several times per week. Effective instruction provides for constant assessment.

Finally, all CBA data is drawn from the student's performance within existing course content--that means from within the curriculum of the educational program of the school which the student attends. Obtaining performance data from an alternate curriculum or from some standardized item-pool of controlled instructional objectives is not Curriculum-based Assessment.

The consultant uses Curriculum-based Assessment, as thus described, to help the teacher determine how the student is performing in the required coursework of the school, whether or not that performance is at the "instructional" level, what the instructional level is, and whether or not performance improves with appropriate instructional intervention.

It doesn't matter whether you call the process CBA, CBM, consultation, old-fashioned teaching, high-tech instructionetics, or direct instruction and feedback. What matters is that you frequently obtain data from the student's performance in his required course of study and use that data to guide his instruction in order to improve his performance.

Curriculum-Based Assessment and Special Education

Formal special-education programs have provided many excellent approaches to meeting the individual needs of the students who need an extra boost to succeed in school. This is especially true with respect to programs for students who have self-evident, primarily physical, handicaps, (i.e., for the blind, deaf, and orthopedically impaired), as well as for the severely and profoundly handicapped persons who look to the schools for services which until recently were not available to them. But such students account for less than 2% of the total student enrollment (U.S. Office of Education, 1988). For most of the remaining 98% of the students, however, pull-out programs. including special education, have not demonstrated any unique services which can be defined unequivocally by imposed eligibility requirements (Peterson, 1989; Wang, Reynolds, & Walberg, 1986 & 1988).

The assessment of student characteristics plays a central role in the determination of which students receive special assistance and which students do not. To understand the roll of assessment in educational programs, this paper will begin by presenting three contrasting perspectives: assessment for placement vs. assessment for instruction, education for the handicapped vs. special education, and bureaucratic form vs. educational reform.

Assessment for Placement vs. Assessment for Instruction

It is a mistake to assume that student assessment and the special-education placement process can be viewed separately from the classroom instruction that is being conducted both in regular and special education within the school system. There has been a proliferation of literature relating to the referal-to-placement process in special education. To understand the issues being presented in this paper, however, it is important to differentiate between two functions of assessment within the referral-to-placement process: (1) the collection of data essential for planning an effective instructional program for the individual being assessed, and (2) diagnosis for the purpose of placement eligibility (Tucker, 1982).

The diagnosis-for-placement functions of assessment have been heavily criticized; so much of the available resources are taken up in the diagnosis of handicaps that little effort can be expended in collecting data for programing (Mercer & Ysseldyke, 1977; Gickling & Thompson, 1985; Galagan, 1985; Will, 1986; and Squire, 1987).

Most of the literature relating to the referral-to-placement process in special education has dealt with the diagnosis-for-placement function. More specifically, the topics emphasized have been "non-biased assessment" (Duffey, Salvia, Tucker, & Ysseldyke, 1981), the assessment of adaptive behavior (Coulter & Morrow, 1978), and the determination of learning disabilities (Ysseldyke, 1983). Much less attention has been given to the programing function; notable exceptions are beginning to appear with increasing frequency; examples include Deno, 1985; Germann & Tindal, 1985; Peterson, Heistad, Peterson, and Reynolds, 1985.

There is little evidence that assessment which is intended to diagnose the handicap of a student provides data relevant to the educational intervention needed by the student (Jenkins & Pany, 1978; Galagan, 1985; Gickling & Thompson, 1985; Webster, McInnis, & Craver, 1986). For example, the simple determination of whether or not a student is mentally retarded or emotionally disturbed cannot, by itself, give relevant program recommendations for the individual. Such recommendations come from direct observation, from clinical experience, or from some type of criterion-referenced assessment within the context of the student's curriculum (Latham, 1984; Tucker, 1985). And, typically, assessment performed for programing purposes is not sufficient to determine if a

student is handicapped in terms of state and federal eligibility requirements.

Special Education vs. Education for the Handicapped

It is also necessary to distinguish between "special education" and "education for the handicapped", since these terms often represent the context for assessment for the student who is experiencing difficulty. There is a tacit assumption that "handicapped" students need something special in education. The flip-side of that assumption is often expressed by the absurd conclusion that a student who needs something special in education must therefore be handicapped.

The two terms special education and education for the handicapped are so often used interchangeably that the fact that the conditions which they describe are quite different is not always apparent. Every child needs something special from time to time in order to get over or around some obstacle in his educational development. So education that is special is a universal need of all children. Confusion arose when the term special education became restricted to referring to those services provided to students identified as handicapped. These questions need to be asked: What is special about the educational needs of handicapped students? Are there identifiable differences between the teaching that goes on in a regular classroom and that which takes place in a special-education class?

It is clear that in most instances there is a difference in class-size between regular- and special-education classes, a fact which raises another point. Based on a massive amount of data analyzed by Glass and Smith (1978), Cahen and Filby (1979) presented convincing evidence that class size alone may account for a significant advantage to those in classes of fewer than fifteen. Has anyone put forth the hypothesis that special education provides little more than an acceptable rationale for providing smaller class-size (and the resultant smaller student/teacher ratio)?

But it is said that handicapped children need a lower student/teacher ratio (smaller class-size). It is obvious that some types of special assistance to students require that the service provider work with very few students at a time. But is that condition not also true with a student on the swimming team who needs special coaching to correct a particular fault, or when special tutoring is required by the trumpet player in the marching band who can't seem to play and keep step at the same time, or when private coaching is needed by the student chosen to represent the school on the debating team? The list is endless. There are many types of students that need special help on a very low student/teacher-ratio basis. Why should a student with this need in academic areas be singled out as suspected of being handicapped?

True, the blind child needs braille as well as orientation and mobility training, the deaf child needs special services related to his hearing loss, the speech-handicapped child needs speech therapy, and the emotionally disturbed child needs emotional support and counseling. And the provision of these services often necessitates a low student/teacher ratio. But has anyone ever looked at how many "non-handicapped" students also need emotional support or speech therapy?

Is it possible to think in terms of services as needed by all children rather than as they are needed by a special group? Consider transportation, for example. It is often an issue for the handicapped. The simple fact is that a non-ambulatory person requires special transportation—President Roosevelt did, and so does Governor Wallace of Alabama.

Equal treatment for all citizens, including the non-ambulatory, would require that each individual have an opportunity to attend school and to be provided with public transportation, regardless of any other factor. There is no need to invoke one of the standard handicapping conditions in order to provide needed transportation. The need is self-evident, and that should be enough. Yet here is where an abuse of proper assessment comes into play.

In order for a student to receive such special transportation, he or she often has to fit the eligibility requirements of one of the handicapping conditions. This means going through a time-consuming and expensive appraisal process, yielding data irrelevant to the need for the service to be provided--in this case, transportation.

To be meaningful, assessment should be performed in terms of the student's need and in terms of the intervention that is needed to overcome the barrier to success in education being experienced by that student (Grayson, Arnold, Hocevar, & Starr, 1980; Gickling& Havertape, 1981; Salvia & Ysseldyke, 1985).

It is also said that handicapped students require special medical attention, such as physical therapy, medication, and dietary supplements. How does that differ from the special treatment and dietary assistance provided to athletes as part of the school's physical education and health programs? Health-related services are an ongoing part of normal school routines, as any school nurse can report. They are not limited to the handicapped. How can we continue to justify the extensive amount of time spent in irrelevant assessment done only for the purpose of determining the eligibility for the service that a student needs.

The term special education, then, has come to mean a restriction of these special services to only those students who meet certain irrelevant eligibility requirements. Unless your child is handicapped, gifted, or in some way exceptional as defined by the eligibility criteria, he may not receive the special assistance that he needs (Mercer, 1973; Hobbs, 1975; Wetherly & Lipsky, 1977; Tucker, 1980a, Gartner & Lipsky, 1987).

The possibility should not be overlooked that this limitation of special services is a means of restricting the expenditure of what is, in fact, a limited amount of money. There is face validity in such a limitation of funds for the special needs of the "handicapped". Originally, the term handicapped was defined to include those who were obviously and physically handicapped (i.e., the blind, the deaf, the crippled) and needed specialized equipment and facilities in order to receive the benefits of a formal education.

But in time other types of conditions were listed under the definition of "handicapped" and the resulting complications have been extensive. First the "mentally retarded' were included, then the "emotionally disturbed' and the "brain-injured" were added to the list, and, finally, the door was opened wide with the inclusion of the "learning-disabled". There is no attempt here to indicate that students currently defined as learning disabled do not have very real needs—because they do! But is there anything about the assessed characteristics that enable the schools to provide better instruction to overcome the disabilities identified?

It is interestin that "learning-disabled" was not even proposed as a handicapping condition to begin with (Wiederholt, 1974). However, unless included in the definition of handicapped, there would be no special assistance (special education) for the children who had become known by this designation. So, with the urging of national advocacy groups, the learning disability category was added to the list of handicaps for which federal assistance would be provided. As a result, the mass of students who were referred for classification as learning-disabled was so great that there were not enough funds to provide what was perceived as the needed services. Governing bodies either placed a funding cap on the special services, thereby limiting the number of students classified as learning-disabled, or they encouraged regulations which set a statistical limitation within the eligibility criteria. The latter, which was the most common form of limitation, significantly increased the workload of the assessment personnel, but still did not provide the data needed to plan for the actual instructional needs of the students thus classified (Tucker, 1982).

The federal government imposed an additional, and often overlooked, restriction on the eligibility of students for services as handicapped students. Prominent in the regulations for Public Law 94-142 is the requirement that any handicapping condition which a student has must be "adversly affecting his educational performance" before he or she can be eligible for special services. Thus a child must fail in school before he is legally eligible for "special" education, and then he has to be declared handicapped in order to get service (Reynolds & Wang, 1983). It is no wonder that we have so many questions about our assessment practices. The child may be failing and need help badly, but before can determine the nature of his needs, we have often exhausted most of the available assessment resources in just determining whether or not he is eligible for help.

And with all of the assessment activity that goes into the making of these eligibility decisions, there are still virtually no data being collected on the conditions within which students are supposed to be learning. The data that has been collected often reveal situations where actual instruction occupies only a limited portion of the school hour (Latham, 1984) and where the student is being asked to perform at inhibiting levels of frustration when the actual ability of the student is quite normal (Gickling, 1985).

Bureaucratic Form vs. Educational Reform

School systems are by nature bureaucracies. A discussion of school systems must take into account the bureacratic point-of-view, a view which tends to emphasize issues which often do not address the quality of instruction as a way of obtaining the desired product of education. For example, when a problem in education is raised for discussion, its definition and its proposed solutions will be quite different for the pure educator as opposed to those of the dedicated bureaucrat. Admittedly, there is a little of the bureaucrat in every successful educator, and there is at least some educational idealism in the sensitive bureaucrat. But for the purposes of this discussion it will be helpful to contrast the two perspectives as though they are pure.

To demonstrate this point clearly, Table 1 presents several often-stated "educational" problems that need to be addressed by local, regional, and national policy. The bureaucrat tends to define educational problems like this:

- The program is too expensive;
- There are too many referrals to special education;
- The Learning-disability definition is not definitive;
- A decline in mean standardized scores of the district makes it difficult to defend current educational programs.

The educator tends to define the same presenting problems in instructional terms rather than in terms of policy and funding patterns.

As a result of these two differing points-of-view, the proposed solutions are also quite different. For example in the case of the first problem (the program is too expensive), the bureacratic solution is simple—cut the funding. On the other hand, the educational solution is quite complicated but is probably more effective in the long run in terms of accountability because it relates directly to outcome-based measures and to the goals and objectives of an educational system. Student assessment is one of the pervasive issues in educational systems where the resolution would be better served by seeking an educational solution rather than continuing to search for a better bureaucratic alternative.

One of the ways to consider the differences between the educational and bureaucratic points-of-view is to examine the differences between the stated objectives (rhetoric) of an educational system and the actual

Table 1: Educational problems and their proposed solutions as contrasted by bureaucratic and educational points-of-view

Educational problem Statement	Bureaucratic Point-of-View	Educational Point-of-View
Education is too expensive.	Ways should be found to reduce spending or to cut staff and/or services.	Ways should be found to improve the quality of instruction while maintaining or reducing cost.
Student achievement is declining as measured by scores on achievement tests.	The funds allocated for education need to be studied to see if there are ways to increase services.	Classroom instruction needs to be studied to see if there are ways to increase output.
There are too many referrals to special education.	The special education policies need to be revised to tighten special education entrance criteria.	The specific instructional needs of the students being referred need to be addressed in a more effective manner.

practice of that system. Several years ago a remarkable statement was made by three of the leading special-education policy analysts in America:

"One of the major tasks of human services policy analysis is to find out how a system actually works, compare the results with what the formal rhetoric says about how the system should work, determine why it works differently, and then recommend the changes that should be made to allow the system to work more in accord with the formal rhetoric.

"Fifteen years of research in this area has turned up a number of factors that influence how a large service system actually works and why it produces 'unintended results'. A few of these 'results' are suggested as follows:

- Pre-eminently, service is performed where the money is, regardless of whether the rhetoric says the service should be performed somewhere else.
- Professionals provide the services they know how to provide regardless of what the recipient of service may need.
- As a corollary service systems serve those who come to the door, regardless of what they require.
- Historically, established service systems (and the interests that represent them) act as if their first duty is to survive, whether the rhetoric says they should survive or not.
- When service personnel are faced with the choice of documenting compliance (as a condition of funding) or providing the services defined by the rhetoric of the system, they will document compliance first.
- When faced with a choice of recipients who are 'easy' or 'hard' to serve, and formal rewards for dealing with each are equal, the service person will choose to deal with recipients who are easy to serve.
- If portions--or all--of the service system are seen as a 'free lunch', they will attract extra use, whether the services are needed or not." (Reynolds, Brandl, and Copeland, 1983, p. 13)

The implicit assumption of current papers such as the one from which the above quotation is taken is that special-education practice has over-extended itself. This condition would not necessarily be a problem if the results were in accordance with the stated (or unstated) goals and objectives (rhetoric) of the system. There is growing support, if not definite evidence for the belief that all is not well in that department.

Madeleine C. Will, former Assistant Secretary for the Office of Special Education and Rehabilitative Services, U.S. Department of Education, spoke of the "mixed results" of special-education programs rather than of the "unintended results". Referring to the rhetoric as "the goal", she made the following statement:

"Yet the complete fullfillment of the goal eludes us. In reality, the reviews of these separate special systems

> submitted by parents, teachers, and administrators say clearly: Programs have achieved mixed results for some children." (Will, 1986).

Gerber (1984) in his analysis of the U.S. Department of Education's Sixth Annual Report to Congress on P.L. 94-142 details a number of general problems in looking at special education programs from th bureacratic point of view:

> "Relatively slow progress in developing new knowledge about special education practice, as distinct from knowledge about specific individual differences, instructional techniques, or local programs, has created a conceptual vacuum in the field which tends to be filled by bureaucratic form rather than educational substance." (p.210)
>
> "Despite major attention in this report to compliance-focused evaluation studies, it is dubious whether any substantial empirical basis yet exists to support our current national special education policy." (p. 223)
>
> "Failure to build a stronger research base will ultimately trivialize both special education research and practice." (p. 223).

Scriven (1983) sums it up this way: "I cannot say what I think the pessimist could say about research and practice in special education at this point, but I think the optimist could say that we have a wonderful opportunity to start all over!" (p.84).

Curriculum-Based Assessment

That there is a problem, no one now seems to deny; what the nature of the problem is, however, still stirs the strong fires of controversy at the conference table and at the professional meeting. It is the assertion of this paper that simply adding curriculum-based assessment to the way things have been done can go far toward providing an effective solution to the dilemma that is so hotly debated.

In the absence of data, subjective argument reigns. Since it is readily admitted by all of the players that data is lacking, let us consider the possibility of at least adding mechanisms for the collection of data which will answer most of the questions about whether or not our educational programs are working in accordance with our stated goals and objectives.

It should be noted here, however, that the simple addition of data collection procedures will not change the educational goals and objectives. There has to be, in some cases, dramatic changes in the expectations of students before their potential can be realized.

In one school system where I was serving as a consultant, the special education program was very well in place with an adequate and highly trained staff. This particular school served the more seriously handicapped (frequently classified as trainably mentally retarded). Also serving the same students, although not part of the formal instructional program, was a group of "Foster Grandparents". It was a revelation to me that in several instances, Foster Grandparents were able to teach their assigned students to read! In checking into the nature of the current school program for these students, I discovered that they had been in reading readiness programs for years but that they had not been deemed successful to a point where actual reading instruction could begin.

There is something missing in the fundamental philosophy as well as in the assessment procedures of a system which allows a student that is capable of learning to read to be maintained for long periods of time at a level significantly below his or her ability to perform.

Some time ago, S. Jay Samuels was asked by the National Institute of Education to interview the staff members of the Congressional education committee to determine what they meant by the term "basic skills" after funds were allocated by Congress to implement the Basic Skills Act. It was not at all surprising that there was wide divergence in what were viewed as "basic skills", but Samuels (1984) reports that generally the skills fell out in the five traditional categories of reading, writing, mathematics, speaking, and listening. Relating to the first three of these as "human inventions which are found only in literate societies", Samuels makes the following remarkable statement:

> "...even modest IQ levels, within the 50-70 range of educable retardation, seem to be sufficient for mastering the basic skills which originate through human invention."
>
> "Why then, one wonders, if the basic skills can be acquired with IQs in the 50-70 range, are there so many children who fail to master them despite having levels of intelligence substantially higher?" (p. 18)

Samuels goes on to answer his own question by asserting that the problem is one of instruction. It is not safe to make categorical statements of simple solutions to complex problems; but, generally speaking, Samuels offers, three things that teachers can do to help students master the basic skills:

> "(1) motivate the student, (2) bring the student to the level of accuracy in the skill, and (3) provide the practice necessary for the skill to become automatic." (p. 27).

These three points will be expanded very briefly in terms of an approach to instructional assistance that has proven very effective where it has been used. Under the general term "Curriculum Based Assessment" a number of improved instructional skills and ideas have been proffered.

Curriculum-based Assessment does not represent any one particular model of testing or instruction; rather it prefers an approach to instruction where the material to be learned is used as its own measure of the degree to which it has been learned--teaching to the test, if you will. The concept is not a new one, but some of the techniques that are used are of recent vintage. The reader is referred to the November, 1985, issue of Exceptional Children for an extensive coverage of the various forms of curriculum-based assessment (Tucker, 1985). For the purposes of the following discussion, however, only a limited view of the subject will be addressed.

1. Motivate the Student

Concern for student motivation often stresses environmental and emotional factors, leaving the least amount of emphasis on the effects of the difficulty of the content itself. Years ago, Betts (1952), introduced three levels of instruction which are quite well known but seldom used in the context of instructional motivation. First applied to the study of how students learn to read, Betts gave us "instructional, independent, and frustrational" levels of instruction. When first introduced the terms were used to designate the percentage of known words in a passage and the amount of comprehension: instructional level was represented by 95% known words with at least 75% comprehension; independent level raised the known words to 98% and the comprehension to at least 90%. In Betts' opinion, fewer than 90% known words . less that 50% comprehension represented the frustrational level--the level at which learning is inhibited due simply to a lack of sufficient information to perform.

Edward Gickling has taken the concept presented originally by Betts and applied it to classroom instruction in general, making it one of the most powerful tools for effective instruction to be presented in many years (Gickling & Thompson, 1985). Basically, however, the ideas developed by Gickling begin with the concept of frustration as a function of motivation. If a student is being presented material to learn at a level of "stimulus overload", frustration sets in and is an immediate inhibiter to further attempts at learning the material. Whereas when the amount of "unknown" material in a given assignment or unit of instruction is reduced to be within the bounds of the "instructional level", the student's natural drive to learn emerges in a "born-again" fashion which is remarkable to observe. A number of striking examples are provided in two of Gickling's publications: Gickling & Havertape, 1981; and Gickling & Thompson, 1985.

Consequently, in addition to all of the social, emotional, and environmental conditions that affect motivation, it can be shown that the instructional qualities of the content to be mastered has a dramatic effect on the initial motivation necessary to yield its mastery.

2. Teach to Mastery

"Mastery teaching" is now so well understood that it hardly deserves mention here except to make one point. The term mastery can be defined (or defiled) by bureaucratic interpretation to mean something that it is not! For example, it is becoming more common to hear statements like "70% mastery" as a criterion for success. That is like saying someone is 70% dead! Such misuse of a very effective term eliminates its usefulness and effectively returns its users to the days when "mastery teaching" was not generally regarded. "Mastery" means precisely that--mastery! Nothing short of 100% is mastery. A bridge reaching 70% of the way across a chasm is a bridge to nowhere!

"Mastery" is one of the foundation principles of individualized instruction. Goals and objectives are written in terms of facts, concepts, and instructional units to be mastered. Unless the basic content to be learned is completely understood (mastered), it is meaningless to practice it until it becomes automatic.

3. Practice Until the Skill Becomes Automatic

Once a given skill or fact to be learned is completely understood and in place, it can be lost in a relatively short time unless practiced consistently and reinforced over time. That fact is basic to the folk wisdom which gave rise to the statement "practice makes perfect". Or, as I am often told, "practice makes permanent; perfect practice makes perfect".

Unfortunately, in current classroom instruction, while opportunity for practice is provided, there appears to be less and less assurance that the facts and skills to be practiced have been mastered. So, a discussion of practice is inextricably tied to mastery. At this point a short perspective from history may be in order.

Some of you reading these words may have attended school more than 20 or 30 years ago and may remember some of the ways in which instruction was different then from now. Traditionally, students performed their practice on individual slates which they held in their hands. The teacher would review the work of each student before it was erased. An improvement in this procedure was introduced by the chalkboard (called first the "blackboard"). Many of you will remember that every elementary school classroom had at least two walls and often three walls lined with chalkboards. Nearly every subject area was taught in the following manner:

The teacher would go to the board and demonstrate a given skill or fact to be learned, e.g., diagraming sentences, spelling, addition, fractions, and so forth. Once the teacher had presented the content to be learned and felt sure that the students had at least a basic

understanding of what he/she was talking about, the students were all sent to the chalkboard. Then the teacher, with full view of every student at one time, would give out examples of the content to be mastered for the students to work on. Sometimes every student would have the same problem to be solved or word to be spelled, sometimes each student would be given a different bit of the content to be mastered. But always the teacher was looking for one thing: mastery of the concept, fact, or skill. When the teacher was satisfied that the students understood what was being learned, they were then given seat work to practice!

Following initial practice, examples of the various skills, facts, or concepts learned were sprinkled into the subsequent lessons to reinforce what was learned in the past and to maintain the highest level of retention. It was and still is a simple and effective method of following what Samuels asserts are still the steps in effective teaching. Also, the practice described above represents the essence of Curriculum-based Assessment.

It is unusual, if not very rare indeed, to find a classroom today where these effective practices are being carried on. This writer believes that there is one primary reason--DITTO SHEETS. The invention of the ditto master and ditto sheets for seat work appear to have occurred simultaneously with the demise of the chalkboard as a tool with which students can demonstrate their abilities. Unfortunately, over time, the ditto sheets have replaced the more effective method, and the "unintended result" has been for classroom instruction to place more and more emphasis on practice and less and less on teaching to mastery.

Fortunately, there are alternatives which can be used without having to go to the expense of replacing all of the chalkboards--though this author thinks that such might be an alternative worth considering. First of all, ditto sheets can be used effectively if they are used in the manner of the traditional hand-held slate. The teacher should check each student's work as the student is performing it. If mistakes are being made, they can be caught and corrected before the mistake has been practiced to a point close to indelibility. Remember practice makes permanent--even when the skill, fact, or concept is the wrong one. Whatever is practiced will be retained. It is of paramount importance that what is practiced be right to start with.

Also, with the advent of classroom computer technology, the same methods of teaching used by my teacher with the chalkboard becomes viable on the screen of the computer. The computer lends itself extremely well to insuring that the student not be allowed to practice until mastery is attained.

Current Trends Relative to Pull-out Programs

Perhaps a good way to summarize what has been discussed so far is to make the point that as a result of a number of evolutionary changes in the way schools do business--everything from the introduction of ditto sheets to the provision of federal aid for certain classes of children, there has arisen a completely new element in education--one that simply did not exist prior to the inception of such elements--the pull-out program.

The more funds that were made available for students who were viewed as having problems that made them eligible for special pull-out programs, the more students were found eligible for those programs. In addition to special education for the handicapped, we have programs for the gifted and talented, programs for those who speak a different language, programs for those who need remedial reading and mathematics, programs for those who are from lower socio-economic stratas of society, ad infinitum. And what has been the effective result? It is not within the purview of this paper to evaluate the results of such programs, but it is worth pointing out that policy evaluators and administrative policy consultants who are having an impact on the future of educational policy in America are making some very strong statements about the pull-out programs.

> "The identification, evaluation, placement, and monitoring of these children often reflected the stereotypes held by teachers and evaluation personnel for race, sex, test scores, social class, ethnic background, and even physical attractiveness. . . . Moreover, negative labeling often produced negative expectations for these children: and once in special placements they tended to remain there, seldom returning to regular classrooms. There educational development was often minimal, and the likelihood was high that they would leave school to become dependent adults." (Lynn, 1983, p. 32).

> "It is rare that IEPs lead to a diploma or other official certification of completion except for the plans themselves. Given the fact that most children in special education programs are diagnosed through tools that are not fully developed, we simply may be providing a rationalization for lower performance by students, teachers, and the school system as a whole." (Macchiarola & Bailey, 1983. p. 141).

> ". . . [W]e can . . . help all children whose level of intellectual functioning is 50-70 IQ points [to] master the basic skills without recourse to pull-out programs or tracking." (Samuels, 1984. p. 18)

Two of the leading proponents of improved classroom instruction as an integral part of special-education reform are Maynard Reynolds and Margaret Wang.

> "The prevalent practice in special education is to make special programs available to exceptional children after they have fallen so far behind that they are full-blown casualties."
>
> "We should shift the emphasis from 'input' to 'outcome,' however; that is, we should justify funding by demonstrating program effectiveness, including decreases in the numbers of children with learning handicapping conditions." (Reynolds & Wang, 1983. pp. 199 & 202; emphasis supplied).

Reynolds and Wang (1983) go on to provide convincing examples of school programs where the payoff is in outcome measures as opposed to the numbers found eligible for pull-out programs. It is worthy to note, in light of their statement above, that in school systems cited where improved classroom instruction is promoted and supported in a school system, there is an accompanying decrease in the the number of students referred for special education.

Caution is advised here, however, lest some school official put on his or her bureaucratic spectacles and view the measure of success as being a reduction in the special-education referrals. While a reduction in the number of students classified as handicapped in order to receive special-education services is a desirable goal, such a reduction should be the result of an improvement in the quality of instruction overall, not a simple reduction in numbers. It is quite possible to effect a reduction in referrals to special education by fiat without achieving any appreciable improvement in the overall quality of instruction for those students who would have been referred.

Curriculum Casualties

The current educational perspective relative to changes in education and, in particular, to pull-out programs can be very practical and very effective. For example, Gickling & Havertape (1981) coined the term "Curriculum Casualties" to describe those students who were not succeeding in school due to the lack of effective instructional strategies. Subsequently, Gickling and others have observed that the majority of referrals to special education may be curriculum casualties rather than "handicapped" students in the more traditional sense. Remember that public policy currently states that a student is not eligible for special education placement under the provisions of P.L. 94-142 unless he or she is not only handicapped according to current criteria, but that he or she also needs special education. Until effective instructional strategies have been attempted with a referred student, there is no way to make such a determination. And we have

consistently found that instructional interventions known to be effective in cases similar to those of referred students have not been used with the referred student.

We have learned to our amazement that when such strategies are used, a large proportion of the referrals are elmininated because the needs that caused the referral in the first place are no longer present. The system that is typically put in place to cause this to happen is called "Pre-referral ntervention". Pre-referral intervention as a way of providing an alternative to special-education referral has now been in force in school districts across America for more than five years. Where pre-referral intervention has been put into place, the number of referrals to special education has always dropped dramatically. In one urban Midwest city, 39% of students referred were taken care of before referral to special education. One state instituted pre-referral intervention by legal mandate and saw the referral rate for the entire state drop by more than 30% over a three-year period.

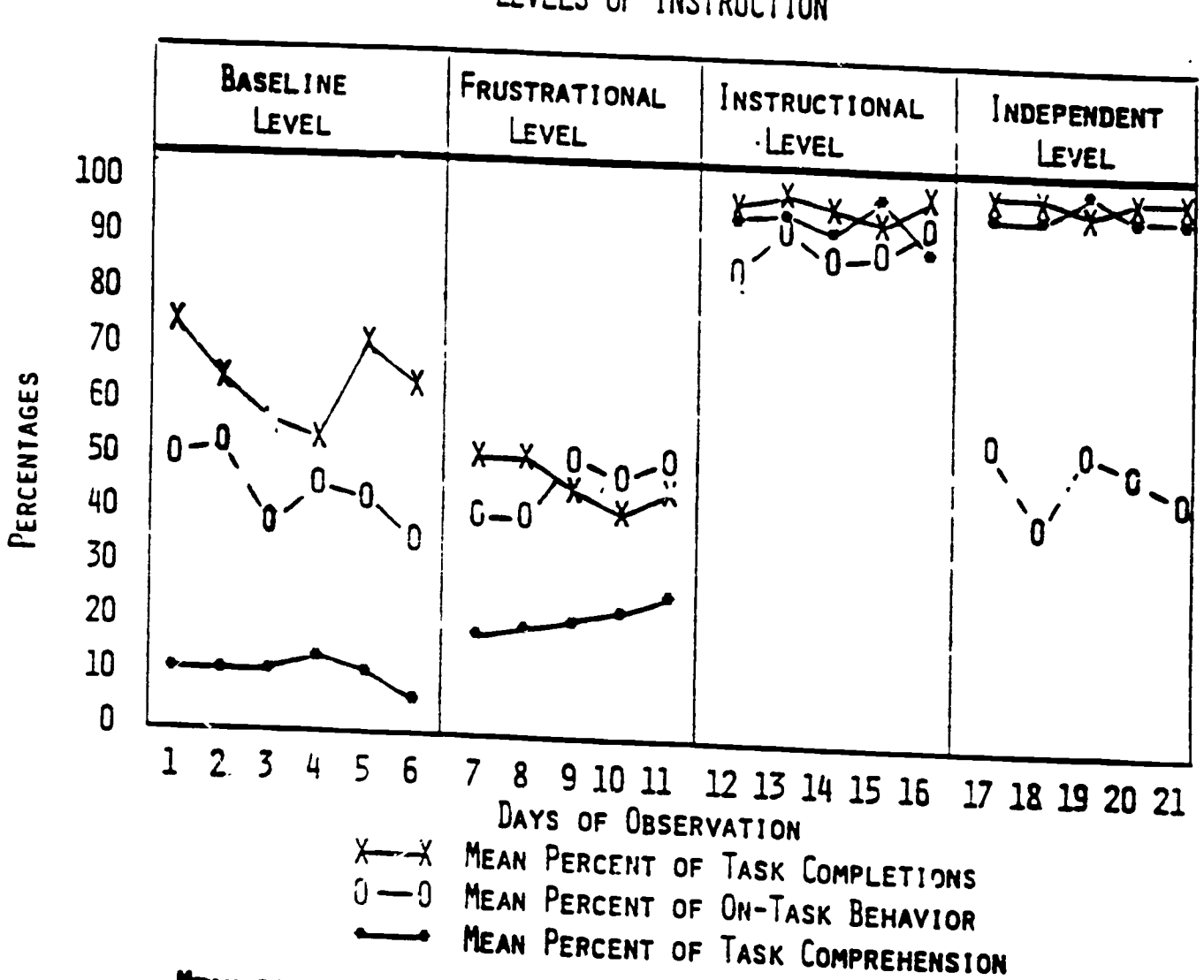
Curriculum casualties can be salvaged by changes in the way in which the curriculum is addressed in a given school system. Thus curriculum casualties become curriculum cures and provide evidence that quality instruction may be the answer to what appears to be a deteriorating product of education in America. But remember that achieving this goal is not as simple as it sounds. There are rarely simple solutions to complex problems. It took education years to get to where it is, and it cannot get to a new and better place overnight.

Instructional Level

Basically, the whole concept of instruction that is enhanced by CBA rests on the finding that students appear to learn better when taught at the "instructional" level (Betts, 1952; Gickling & Havertape, 1981; Hargis, 1987). Specific methods of determining the instructional level can be found in Gickling & Havertape, 1981; but, in essence, the instructional level is, on the average, that level at which a given student already "knows" 93% to 97% of the material to be read or 70% to 85% of the material to be practiced in drill. The classic study reported by Gickling and Havertape (1985) and shown as Fig. 1 on the following page, shows the remarkable results which can be achieved by providing students with a learning environment set at the instructional level. These results have been achieved on numerous additional occasions by Gickling (pers. comm.) and this author.

Magic Window of Learning

The results portrayed in Figure 1 provide a graphic demonstration of what like to call a "magic window of learning". The window appears between rustration and boredom. The challenge is just right—like Goldilocks's



MEAN PERCENTAGES OF TASK COMPLETION, TASK COMPREHENSION, AND ON-TASK BEHAVIORS FOR EIGHT 1ST AND 2ND GRADERS ACROSS BASELINE, FRUSTRATIONAL, INSTRUCTIONAL, AND INDEPENDENT LEVELS OF INSTRUCTION.

need for a comfort level, it isn't too hard and it isn't too soft: it's just right.

Another way to describe this "window" is that it represents an objective definition of motivation as applied to instruction. By this definition motivation is intrinsic. It is there all the time. It waits for the condition that is not so frustrating that the student quits because the task is too hard, and it is not so easy that the student quits because it is boring.

Curriculum-based Assessment is a very useful tool for helping the teacher to keep individual students, especially those that are at-risk, within the magic window. This technique isn't really majic, of course. All of its elements are based on sound research. It is really nothing more than effective teaching--excellence in instruction, if you please:

> "Excellence occurs when the instructional system is able to provide the individual learner with an appropriate level of challenge and a realistic opportunity to succeed on a frequent and continual basis for each instructional goal in the program." Spady (1984)

Alternative CBA Approaches to the Instruction of At-risk Readers

The scope and sequence for reading instruction using alternative CBA approaches provides for instruction in three general categories of successive presentation: accuracy in word recognition, fluency, and comprehenssion. The methods described below are several of those which have proven to be the most successful.

Accuracy in Word Recognition

Basically, for the purposes of this discussion, word recognition is straight sight-word calling at the automatic level of recognition. It may be argued that there is more to learning to read than calling words by sight, and that is true. But most of the other strategies (usually categorized under the term "decoding") such as the phonics approach, are tools for use when a difficult word is encountered rather than "reading".

I have seen an entire school system that was so involved with teaching phonics as THE way to learn to read, that a great number of the students in one of the elementary schools--even those as high as fourth grade were still "decoding"; that is, sounding out the words in their reading assignments. They read so slowly that they weren't able to comprehend what they were reading. For those students, "reading" was a series of words decoded and called out separately. That is not reading. The word-

calling has to become so automatic that it flows with fluency into synchronization with the thought processes. Only then can the process tap into "thinking and reasoning skills" so that it becomes READING.

Transition Stories: This was the original approach used by Gickling (Gickling and Havertape, 1981). It is still used in various ways but is less popular due to the time it takes to create the stories. Basically, a transition story is one that is created for an individual child at his instructional level by using approximately 90% of his known words and then introducing the unknown words by drill prior to the reading of the story itself. The stories are written within the same story-line as the actual reading lesson so that the student is still reading about the same subjects and concepts that the rest of the class is reading. While time-consuming, this technique has been shown to be a very powerful tool to achieve rapid improvement in reading accuracy and fluency. Transition stories have been used extensively in New Britain, Connecticut (see Appendix A).

Integrated Reading Strategy: This approach was developed by Gickling because of the complaints that the production of transition stories took so long. With this strategy, you work directly from the reading assignment itself. By randomly pointing to words, you assess the degree of difficulty; that is, the ratio of known words to unknown words. We usually get a measure of fluency at the same time.

Once it is determined what the ratio of known to unknown words is, then a decision is made as to whether or not this reading assignment can be used. Actually, the assignment can nearly always be used, but the question is, whether or not there are enough known words to make the learning of this assignment sufficiently motivating to use it. Assuming that the assignment is judged to be acceptable, the unknown words are then taught by a drill process that consists of introducing the unknown words--one at a time--beginning with the first unknown word.

The teacher drills the student on the unknown word by presenting it (physically pointing to it in the text) along with an appropriate number of known words, increasing the time between presentations of the unknown word by including more and more known words up to a maximum of about 9 or 10. Usually after a word is learned in this manner, the student is asked to read the passage which include the newly learned word.

Flash Cards: This technique is deceptively simple and incredibly powerful. While flash cards are well known and often used, there is little that is traditional about the manner in which they are presented here. The order of presentation provides the power. Basically, the strategy described under "Integrated Reading Strategy" above is also used here except that the pointing procedure is replaced by flash cards. The advantage to the flash cards is that the student can be taught the method (they often call it a "trick" because it works so dramatically) and much

of the practice can occur without the teacher's direct involvement. This technique is also used for learning such other material as basic math facts or any other isoltated items that have to be learned by rote.

CBA Model Programs to Visit

There are scores, if not hundreds, of school systems throughout the U.S. and Canada that have implemented various forms of CBA. This author has had extensive involvement with a number of these schools. Listed below are three school systems that have made particularly solid commitments to CBA and have realized significant results. Each program is described briefly, and the name and address of a contact person is provided.

Connecticut: The State of Connecticut has had ongoing CBA model sites throughout the state--primarily in the larger urban districts--since the 1985-86 school year. The contact person at the State Department of Education is Don Douville.

New Britain, Connecticut: Perhaps the most intensive use of CBA techniques in the state has been in this urban district just west of Hartford. Of particular interest is the effect that the introduction of CBA through a pre-referral intervention program has had on the referrals to special education.

Before the project began (in 1984-85), 73 students FROM ONE SCHOOL were referred for special-education consideration. Of those, 53 were PLACED into special education. The first year of the project, 63 students were referred, but only 14 were placed. The value of the intervention that took place instead of placement into special education was viewed with wary interest that first year, but the results spoke for themselves, and interest picked up dramatically the following year. During the second year of the project, 155 students were referred for "help" by the building team, and 17 were placed (of which 7 were for speech therapy only). In the third year of the project (1987-88), 136 students were referred for help, and 13 were placed (5 of which were for speech therapy only).

For further information about the New Britain program see Appendix A. The contact person there is Mary Lou Wojtusik, Smalley School, New Britain Public Schools, New Britain, CT.

Norwalk, Connecticut: The Rowatan School in this district uses CBA to determine the instructional level of every student in the elementary grades. Under the careful supervision of the Principal, all students are grouped by rooms at their instructional level, with those showing the most severe deficits being served by the CBA-trained special-education staff. The amount of growth and mastery in reading after two years in this project is highly significant. For further information about the creative methods

used in this case, contact Robert Bottomly, Principal, Rowatan School, Norwalk Public Schools, Norwalk, CT.

Louisiana: This was the first state to mandate the use of curriculum-based assessment as a part of the evaluation of students suspected of being handicapped. Unfortunately, the mandate to use CBA was placed into the state's policies before the appraisal personnel of the state had sufficient time to understand what it was or how to do it. Consequently, there are many and varied versions of CBA throughout the state of Louisiana. Nevertheless, following the changes in the appraisal process, including the mandated use of CBA, referrals to special education dropped by 30% over a three-year period. And in several locations can be seen some of the most progressive and appropriate uses of CBA. State Department of Education contact persons include James Canfield and Emile Barrileaux, Louisiana Department of Education, Baton Rouge, LA.

Alexandria: Beginning in one school, the Mabel Brasher Elementary School, in 1986-87, Curriculum-based Assessment was the basic method for intervention with at-risk students. The unique feature of this pilot was the teaming that occurred between the Chapter I program, the special-education program, and the regular education program. According to the principal of this school, during the second year of the program, it was not necessary to retain any students nor was it necessary to refer any students to special-education for placement. It should be noted that in Louisiana, special education personnel are allowed by law to work with at-risk students who are in need of service but who are not suspected of being handicapped.

The success of the CBA program at Mabel Brasher School over a two year period has been so dramatic that the School Board has voted to institute CBA in all of the elementary schools in the district. For further information on the Alexandria model see Appendix B, The contact person there is William Conella, Principal, Mabel Brasher School, Rapides Parish Public Schools, Alexandria, LA.

REFERENCES

Betts, E. A. 1952. "Informal Inventories". In Handbook on Corrective Reading for the American Series. New York: Harper and Row, 3-8.

Blankenship, C. S. 1985. "Using curriculum-based assessment data to make instructional decisions". Exceptional Children, 52, No. 3, 233-238.

Cates, J. 1985. Report on study of illiteracy. See reference below to Giebink, Gail (Ed.). 1985.

Coleman, L. 1978. "Problem Kids and Preventive Medicine: The Making of an Odd Couple". American Journal of Orthopsychiatry. January, 48, No. 1, 56-70.

Coulter, W. A. 1985. "Implementing curriculum-based assessment: Considerations for pupil appraisal professionals". Exceptional Children, 52, No. 3, 277-281.

Deno, S. L. 1985. "Curriculum-based measurement: The emerging alternative". Exceptional Children, 52, No 3, 219-232.

Durkin, D. 1984. "Is there a match between what elementary teachers do and what basal reader manuals recommend? The Reading Teacher, 37, 734-745.

Gartner, A., & D. K. Lipsky. 1987. "Beyond special education: Toward a quality system for all students." Harvard Educational Review, 57, No. 4, 367-395.

Gates, A. I. 1930. Interest and ability in reading. New York: Macmillan.

Gerber, M. M. 1984. "The Dept. of Education's Sixth Annual Report to Congress on P.L. 94-142: Is Congress Getting the Full Story?". Exceptional Children, 51, No. 3, 209-224.

Gickling, E. E., & J. F. Havertape. 1981. "Curriculum based assessment" In Tucker, James A. (Ed.). Non-test based assessment. Minneapolis: National School Psychology Inservice Training Network, Department of Educational Psychology, University of Minnesota.

Gickling, E. E., & V. P. Thompson. 1985. "A personal view of curriculum-based assessment". Exceptional Children, 52, No. 3, 205-218.

Giebink, G. (Ed.). 1985. "Study Focuses on Functional Illiteracy". College of Education Newsletter. Austin, Texas: College of Education, University of Texas.

Hargis, C. H. 1987. Curriculum Based Assessment. Springfield, Illinois: Charles C. Thomas, Publisher.

Hargis, C. H. 1989. Teaching low achieving and disadvantaged students. Springfield, Illinois: Charles C. Thomas, Publisher.Idol-Maestas, L. 1983. Special educator's consultation handbook. Rockville, MD: Aspen Systems.

Hargis, C. H., M. Terhaar-Yonkers, P.C. Williams, and M.T. Reed. 1988. "Repetition requirements for word recognition." Journal of Reading, 31, 320-327.

Jenkins, J. R., & D. Pany. 1978. "Standardized achievement tests: How useful for special education?". Exceptional Children, 44, 448-453.

Marston, D. in press. A curriculum-based measurement approach to assessing academic performance: What it is and why do it. In Mark Shinn (Ed.) Publisher available from author.

McKenna, B. 1977. "What's wrong with standardized testing?" Today's Education, 35-38.

Mercer, J., & J. E. Ysseldyke. 1977. "Designing diagnostic intervention programs". In T. Oakland (Ed.) Psychological and educational assessment of minority children. New York: Brunner/Mazel, Publishers.

Miller, G. A. 1956. "The Magical Number Seven, Plus or Minus Two: Some limits on Our Capacity for Processing Information". The Psychological Review, 63, No. 2, 81-97.

Peterson, J.M. "Remediation is no remedy". Educational Leadership, 47, 24-25.

Popham, W. J. 1978. Criterion Reference Measures. Englewood Cliffs, NJ: Prentice Hall.

Reynolds, M. C., J. Brandl, & W. Copeland. 1983. "Symposium on Public Policy and Educating Handicapped Persons". Policy Studies Review, Vol 2, Special # 1, January. pp. 9-19.

Rosenfield, S., & Rubinson, F. 1985. "Introducing curriculum-based assessment through consultation". Exceptional Children, 52, No. 3, 282-287.

Samuels, S. J. 1984. "Basic academic skills". In J. E. Ysseldyke (Ed.) School psychology: The state of the art. Minneapolis: National School Psychology Inservice Training Network, University of Minnesota.

Scriven, M. 1983. "Comments on Gene Glass". Policy Studies Review, Vol. 2, Special # 1, January. pp. 79-84.

Squire, J R. 1987. "Introduction: A special issue on the state of assessment in reading". The Reading Teacher, 40, No. 8, 724-725.

Spady, W. G. 1984. "Organizing and Delivering Curriculum for Maximum Impact." In Making our schools more effective: Proceedings of three state conferences. Publisher unknown.

Tucker, J. A. 1981. Non-test based assessment. Minneapolis: National School Psychology Inservice Training Network, Department of Educational Psychology, University of Minnesota.

Tucker, J. A. 1982. "Issues and Conssiderations when Screening and Assessing Handicapped Pupils". Measurement and Evaluation, 15, No. 1, 117-127.

Tucker, J. A. 1985. "Curriculum-based assessment: An introduction". Exceptional Children, 52, No. 3, 199-204.

Tucker, J. A. 1987. "Curriculum-Based Assessment is No Fad". The Collaborative Educator. 1, No. 4, 4 & 10.

Wang, M. C., M. C. Reynolds, & H. J. Walberg. 1986. "Rethinking Special Education." Educational Leadership, 44, 27.

Wang, M. C., M. C. Reynolds, & H. J. Walberg. 1988. "Integrating the children of the second system." Phi Delta Kappan, 00, 248-251.

Webster, R. E., E. D. McInnis, & L. Craver. 1986. "Curriculum Biasing Effects in Standardized and criterion-Referenced Reading Achievement Tests." Psychology in the Schools, 23, April, 205-213.

Recommended Publications for Additional Information

Gickling, E.E. & Havertape, J.F. 1981. "Curriculum-Based Assessment". In Tucker, J.A. (Ed.) Non-Test Based Assessment. See below under this title.

Hargis, C.H. 1987. Curriculum Based Assessment: A Primer. Springfield, IL: Charles C. Thomas, Publishers. $18.50.

Hargis, C.H. 1989. Teaching Low Achieving and Disadvantaged Students. Springfield, IL: Charles C. Thomas, Publishers. $27.95

Rigi, C., & F. Rubinson (Eds.). 1982. "Self-Study Format" of Gickling & Thompson's 1981 training module on Curriculum-Based Assessment. Available for Educational Directions Incorporated, P.O. Box 4471, Austin, TX 78765. $25.00

Tucker, J.A. 1981. Non Test-Based Assessment. A comprehensive training module for educators and school psychologists. Contains Gickling & Havertape's classic initial publication on curriculum-based assessment. Order from Educational Directions Incorporated, P.O. Box 4471, Austin, TX 78765. $49.95

Tucker, J.A. 1985. "Special Issue: Curriculum-Based Assessment". November 1985 issue of Exceptional Children. Reston, VA: Council for Exceptional Children. $ 5.00

Tucker, J.A. 1988. "The Flashcard Technique: A Powerful Instructional Tool Based on Curriculum-Based Assessment". Published by the author. Available from Educational Directions Incorporated, Box 4471, Austin, TX 78765. $ 1.50

APPENDIX A

Smalley School,
New Britain, Connecticut

EARLY INTERVENTION PROGRAM COMPARISON DATA

SCHOOL: Smalley NUMBER OF YEARS IN PROJECT: 3

Pre-Project 1984-85:

Number of referrals to pupil services team: 73
Number of these placed into special education: 53

Project first year 1985-86:

Number of referrals to pupil services team: 63
Number of these placed into special education: 14

Project second year 1986-87:

Number of referrals to pupil services team: 155
Number of these placed into special education: 17*
(*7 of these placements were for speech only)

Project third year 1987-88:

Number of referrals to pupil services team: 136
Number placed into special education: 13*
(*5 of these placements were for speech only)

COMMENTS

1. Those students referred but not placed were judged by the referring teacher and the team to be making adequate progress in the regular classroom as a result of early interventions.

2. The number of minority students placed into special education was proportionate to the percentage of minorities represented in the building.

SMALLEY SCHOOL DATA

SY 1984-85

Population by Ethnic Group	%	Referrals		Placements	
		#	%	#	%
Hispanics	53	40	55	38	72
Blacks	11	11	15	4	8
Whites		21	29	10	19
Other	17	1	1	1	2
TOTAL		73		53	

SY 1987-88

	%	#	%	#	%
Hispanics	57	87	64	7	54
Blacks	11	15	11	0	0
Whites	29	34	25	6	46
Other	1	0	0	0	0
TOTAL		136		13	

*5 placements were speech/language only

APPENDIX B

Mabel Brasher School
Alexandria, Louisiana

CURRICULUM BASED ASSESSMENT/AT RISK CHILD PROGRAM

FEBRUARY 7, 1989

WHAT IS CURRICULUM BASED ASSESSMENT?

Curriculum Bases Assessment is a teacher technique used in teaching to make sure students get the proper amount of repetitions on their level to learn any new fact/word, etc.

Student level is called the INSTRUCTIONAL MATCH and the material is kept between 93-97% of what the student knows so the CHILD WILL ALWAYS BE SUCCESSFUL IN LEARNING NEW MATERIAL/FACTS/ETC. A CHILD IS NEVER A FAILURE AS THE LOWEST HE/SHE CAN MAKE IS IN THE 90's%.

Example: If a child is having trouble learning new words - the teacher, parent, aide or another student can flash cards with nine words he/she knows to one word he/she does not know. The lowest he can make is 90% as he has only one item he can miss. Material kept in his range is .. self-motivating and the student will learn.

LENGTH OF TIME ON PILOT

Brasner Elementary has been involved with Curriculum Based Assessment about 2½ years.

VISITORS

Many visitors have been at our school to see CBA in operation. Catahoula Parish visited to get ideas for their Chapter One Program. We trained the principals and staff at Sabine Parish. We had a workshop for all the assessment teachers of the State at Hotel Bentley on October 6, 1988. We will be presenting your program at the Super Conference in Baton Rouge on March 1, 1989, for all superintendents, principals, special education personnel.

Our Superintendent, Mr. Allen Nichols, visited Brasher for an entire morning and reviewed the total CBA program. We also welcome any of you to come visit, review our results, and see your program in action saving boys and girls from becoming curriculum failures.

EDUCATION COMMITTEE

The program was presented to the Education Committee Thursday, January 26, 1989.

T OF PROGRAM

Dr. Tucker was paid by the State Department the first year and ides Parish School Board paid for the second year. There is no t for the infusion of the CBA-At Risk Program in the parish.

AINING OF PERSONNEL

Dr. William Connella, Principal of Brasner Elementary, and Mrs. ye Robbins, Chapter One teacher at Paradise Elementary, are able d willing to train personnel.

MOUNT OF TIME FOR TRAINING

The teaching technique of Curricula Based Assessment can be learned n 30 minutes. However we recommend five one hour sessions if possible o learners of the technique may be guided in the teaching of a student.

Principals of the Parish will receive Curriculum Based Assessment n February 22. This workshop has been approved by the Leadership cademy at no cost to the Rapides Parish School Board. Dr. Connella ill be the instructor.

TEACHERS, PARENTS, AIDES OF THE PARISH MAY BE TRAINED IN SEVERAL WAYS.

1. Train Chapter One teachers and aides
   We have Chapter One in 22 of the 32 elementary schools. The Chapter One teacher with the help of the aides can then act as the training agent in each of the individual schools.
   Teachers and aides were trained at Brasner Elementary in the Chapter One Lab during five of the teachers planning times. We had no problem whatsoever. There is no reason to believe this could not be done in the 22 chapter one schools.
   Parents were trained by the Chapter One teacher in the lab. All aides learned the technique and so did all parents who came.

2. For schools without Chapter One - the training could take place in the Professional Faculty Study each school has to do. They could spend the first five hours of the study on CBA and it could be scheduled within the first few months of school.
   New staff will have to be trained - at Brasher without Chapter One- the principal or a teacher in the particular grade level trains the new staff member. New staff in Chapter one schools can be trained by the Chapter One Lab teacher.

WHO DOES THE CBA TECHNIQUE IN THE SCHOOL - NO COST-NO NEW PERSONNEL

In CHAPTER ONE SCHOOLS, the Chapter One readiness aides can do CBA in kindergarten and first grade - this is the grades she normally serves. The Chapter One teacher and aide can do CBA for grades 2-5 or higher if Chapter One has a pull-out program for higher grades. Since Chapter One is correlating what they are teaching to what the teacher is using this technique works excellent. Chapter One personnel can furnish the necessary drill for the skill before the actual practice reading with the classroom teacher. CBA worked in Chapter One at

Brasher Elementary.

SCHOOLS WITHOUT CHAPTER ONE has a readiness aide that serves first and second grade. At Brasner our readiness aide starts at 7:30 A.M. and finishes at 2:30 P.M. She teaches, drills, practices words with 42 At-Risk students in these grades. Kindergarten teachers pull their own students and teaches the alphabet, sounds, numbers, whatever a child needs.

At Brasner, the principal requires each first and second grade teacher to do at least one At-Risk child. When the child needs no further help they select another. This is done so the teachers will keep their At-Risk skills at peak and they will be able to help and realize problems their part-time instructional aide is having.

You do not have to have instructional aides to do CBA. It is however helpful if teachers are going to reach large numbers of AT-Risk students. Our instructional aide serves 42 students. We all realize more could be done if these students would get more practice. It is working as is.

TEACHERS WITHOUT AIDES

Third/fourth/fifth grade teachers all have to do At-Risk students. They have devised methods where students help students - flash cards to one another, choral read together, etc. We sometimes help At-Risk students at recess and we have a Co-curricular Remedial Reading and Math Club which allows us to have pull-out time from physical education. Teachers also hold At-Risk students during the 45 minutes library period-they use only 15-20 minutes of this period.

If teachers want to help At-Risk students, CBA is definitely a teacher technique to help them do it. It is hard to teach At-Risk students - hard work - unfortunately many people make excuses such as not able to find time, etc. If 20 At-Risk students fail, it costs us $70,000 extra for them to repeat a grade. The amount of money state wide is astronomical. We are charged by the taxpayers to teach these students and the time has come where we cannot fail to teach these students any longer. We have the technique-CBA. We no longer have an excuse.

RESULTS

I do not believe it is fair to average number of sessions, fluency and word gain for At-Risk students, however, we have all the results at Brasher if you would like to review them. Some students who failed last year are making the honor this year. We only have two fluency problems in fifth grade - had four when school started. We have six problems in fourth grade, eight problems in third grade, and four and two problems

n grades one and two. Most of our problems in reading are being
liminated. We believe reading problems should be eliminated by
he end of third grade.

esearch Results are attached.

RESEARCH RESULTS

Research was done on the raw data results of Curriculum Based Assessment at Brasner Elementary bewteen September/January 1988-89 by staff member Mrs. Jimmie Nelle Rabalais, Elementary Supervisor.

REGULAR EDUCATION STUDENTS RESULTS WERE:

FLUENCY

At risk regular education average fluency gain was approximately one word per session.

Average at risk student fluency gain was much higher.

Some at risk students that were retained last year were found to be making the honor roll.

WORD RECOGNITION

At risk student word recognition gain was 20%.

FLUENCY

Fluency is critical to reading because a child has to read at least 65 to 70 words per minute for him/her to comprehend. The range of 65-70 words per minute is called the thresnold of comprenension.

Students reacing below this wpm/fluency range cannot comprenend because short term memory is 18 seconds and the brain unloads before the student has a chance to move it into long term memory.

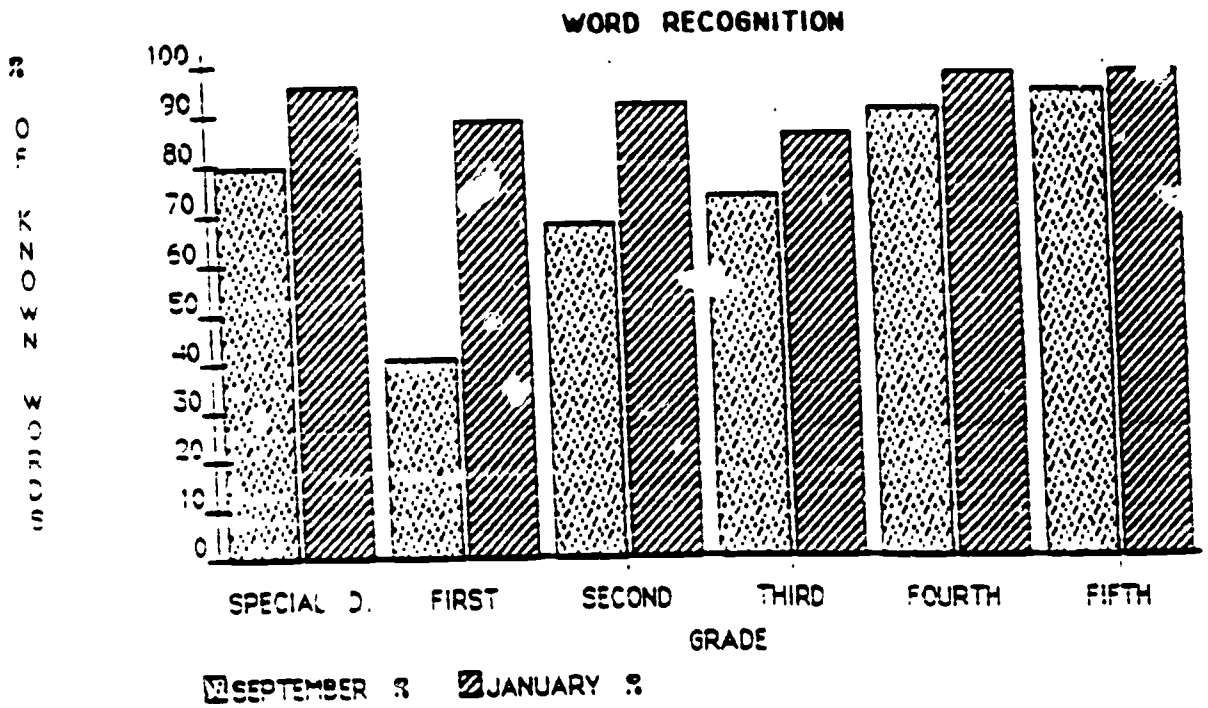
Comprehension cannot take place unless a child is reading between 65-70 wpm.

WORD RECOGNITION

Word recognition is important because without word meaning a child cannot comprenend anything---he/she will be simply calling words if he/she recognizes words and does not know the meaning.

No comprenension can take place at all without word recognition.

GRADE	SEPTEMBER %	JANUARY %
SPECIAL ED.	79	95
FIRST	40	88
SECOND	67	91
THIRD	73	85
FOURTH	90	97
FIFTH	94	98



GRADE	SEPT AVG WPM	JAN AVG WPM	AVG GAIN
SP. ED.	44	94	56
FIRST	17	66	30
SECOND	34	67	33
THIRD	60	83	22
FOURTH	71	108	40
FIFTH	85	113	28