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## 5. Curriculum-Based Assessment: Implications for Psychoeducational Practice

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# Curriculum-Based Assessment: Implications for Psychoeducational Practice

Edward S. Shapiro

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The topic of this chapter places me somewhere between Carnac the Magnificent and a crystal ball gazer! On the one hand, I am being asked to look into the future and discuss the potential implications of curriculum-based assessment (CBA) for psychoeducational practice. Although my graduate students believe I may have superhuman powers and can be all places at the same time, fortune telling was never one of my talents. On the other hand, like Carnac, I obviously believe that CBA is an answer, but I'm not sure what the questions are going to be. In this paper I assume that all questions asked have the same answer: "Use CBA."

When a district decides to adopt CBA as a measurement procedure, impacts are anticipated on the service delivery method, accountability procedures, and role functions within that district. The way in which CBA is adopted, the particular model of CBA employed, and the acceptance of CBA in the district will all play a part in the degree to which each of these aspects of the district are affected.

Implementing CBA districtwide obviously will have implications that may alter the entire system. Equal impact may be noted when CBA is implemented on an individual basis. A single teacher may choose to use CBA within his or her classroom. A single psychologist may choose

to use CBA as a means to enhance service delivery. A single resource room teacher may choose to implement CBA for a particular class. Further, the ways in which CBA are used may not be individualized. A single teacher may choose to provide progress monitoring on long-term goals. A resource room teacher may choose to implement progress monitoring for long-term goals and write IEP objectives using CBA. A psychologist may choose CBA as a mechanism for conducting initial evaluations and recommending intervention strategies.

Use of CBA by individuals has implications that are somewhat different than when CBA is used in an entire system. For example, when an individual uses CBA to make eligibility decisions, one obviously cannot use CBA alone but must find a way to integrate CBA and traditional assessments. Additionally, using CBA to identify targets for intervention can be valuable only if the delivery system supports intervention planning rather than educational diagnostic decision making.

Recognizing that there are some differences between using CBA with an individual versus large-scale application, I will confine my comments to the implications of CBA when employed on a large-scale, districtwide basis.

## IMPLICATIONS FOR SERVICE DELIVERY

### How Should Eligibility for Special Education Be Determined? Use CBA

Certainly not the intention of developers of CBA, much attention has been given to its potential use as a mechanism to determine the eligibility of students for classes for the mildly handicapped. This has been particularly true of the curriculum-based measurement (CBM) model of CBA. From the onset of the dissemination of this model, researchers published many studies that examined the concurrent and criterion-related validity of CBM. These studies typically would determine the degree to which already identified groups of learning-disabled (LD) and non-LD students would be differentiated by CBM measures (e.g., Deno, Marston, Shinn, & Tindal, 1983; Deno, Mirkin, & Chiang, 1982; Marston & Deno, 1982; Shinn, Ysseldyke, Deno, & Tindal, 1986). These studies showed that CBM measures could distinguish between already classified learning-disabled, non-learning-disabled, and Chapter I students (Marston, Tindal, & Deno, 1984; Marston, Mirkin, & Deno, 1984). Further studies addressing the criticism of using

intact groups reported that CBM measures "predict correct membership in special education about as accurately as the commercial measures of achievement" (Tindal, 1988).

Using CBA, and CBM in particular, as a mechanism to determine eligibility for special education appears to have some research support. By employing ratios of expected to actual performance, called discrepancy ratios, a ratio of 2.0 to 2.5 appears to result in the equivalent percentage of students being classified as eligible for special education as traditional methods. This was true of most grades except first and second, where such a ratio resulted in a significantly higher percentage of students identified as handicapped (Marston, Tindal, & Deno, 1984). What are the implications for service delivery of putting such a system in place? What are the potential impacts on individual students when their eligibility for special education has been based on CBA?

By using CBA- or CBM-type measures to determine eligibility for special education, the criteria for entering special education become clearly demarcated. The degree to which students must fall behind to be eligible is empirically determined and is based on observable student performance of required tasks, rather than some unobservable, mystical entity entitled potential. Empirically based criteria for determining special education eligibility, particularly learning disabilities, would be a welcome relief from the way these decisions currently are being made. Indeed, the Panel on Selection and Placement of Students in Programs for the Mentally Retarded (Heller, Holtzman, & Messick, 1982) raised serious questions about the use of traditional measurement procedures (e.g., IQ tests, standardized achievement tests) in the decision to declare students eligible for special education services.

To effectively implement a CBA-based eligibility decision-making model, local norms must be developed. Although there is little research into parameters of the norming process for CBM (e.g., extent of population needed to be sampled, using building versus districtwide norms, how to handle the problem of multiple basal reading series used within the same district), the time, energy, and expense of collecting and developing local norms must be recognized. In some of the norming projects I have been aware of in Iowa and Pennsylvania, the cost of collecting norms has been borne by grants from states or local districts. Although this is appropriate for pilot projects, there must be mechanisms built into systems to perpetuate the collection of norms. Without this perpetual motion, it is unlikely that ongoing updating of local norms will occur. ✓

Another implication of using CBA for eligibility decision making is related to establishing criteria for exiting special education. It seems logical that CBA can be used as much to enter students into special education as it can to establish criteria for exiting. One of the most significant problems facing special education is that once students have been declared eligible, they rarely move out. Declassification statistics are difficult to find; however, most school professionals will tell you that most students carry their special education label with them for the duration of their school careers. By using CBA, one could identify the level of performance equivalent to, for example, the lowest reading group or math group in an elementary school. When such a level is established by the child receiving special education services, and maintained for a specified period of time within a regular education setting, the student may be declassified as needing special education. Clearly, this should alter the rates of entrance and exit from special education.

Cone (1988) has described a behavioral assessment procedure called template matching that could be very valuable for using CBA to determine exit criteria from special education. In template matching, target behaviors are identified and assessed on those judged to be "average" responders. The ranges of these behaviors across students are graphed using box and whisker plots. Behaviors of problematic youngsters are assessed to determine how their levels of the identical behaviors match the nonproblematic students. Hoier, McConnell, and Pally (1987) presented an excellent example of template matching in the evaluation of handicapped preschool children. In their study, they identified which behaviors would be problematic for children moving from preschool to kindergarten and kindergarten to first grade. Hoier et al. did not go the additional step of deriving intervention strategies to teach these skills, but the template matching procedure was an excellent way to show clearly which behavior patterns may be problematic when handicapped students are mainstreamed.

A similar procedure could be employed using CBA. Data collected from nonhandicapped "average" peers may offer the template and targets for interventions among handicapped youth. Indeed, this is often the case when IEP goals are set and could be used to set exit criteria as well. Further, using this strategy in the assessment of the academic ecology could also lead to targets for intervention that may need to be addressed, in order to have the student attain success in the regular education setting.

The use of CBA as a decision-making model for special education eligibility clearly requires some policy changes. Policy at state levels

must support the opportunities for local districts to experiment and then permanently replace existing models of decision making. Support is not always easy to come by, although large districts such as Minneapolis, as well as Departments of Education like Iowa, have been able to solicit support. In particular, there are always concerns raised about ignoring the *potential* part of the equation in identifying learning-disabled students. Alteration of this part of policy requires changes in basic assumptions about predicting success in school. As articulated by Marston and Magnusson (1988), the best predictor of reading performance cannot be the degree to which a student answers questions about history, does puzzles, and copies designs.

At both the district and building levels, there are needs for understanding and accepting CBA as a viable alternative to current ways of making decisions about student performance. Principals, teachers, and district administrators must be convinced that the measurement systems advocated by CBA have the conviction of more traditional approaches. They must be convinced that their decisions indeed are supported by teachers, parents, and state departments of education. At present, little is known about the acceptability of CBA as viewed by various education professionals. In a pilot study among two samples of teachers, Turco and I (1988) found that CBA does indeed show significantly higher levels of acceptance as rated on a measure of assessment acceptability. In contrast, among a nationally sampled group of school psychologists in the same study, no differences are evident in acceptance of CBA compared to traditional achievement measures. When teachers and psychologists are compared, however, there does appear to be a significantly higher acceptance rating of CBA by teachers compared to school psychologists. Although I stress the preliminary nature of these findings, both the development of an assessment acceptability scale and the initial findings of teachers having higher acceptability of CBA than psychologists begin to point out some of the issues that must be faced, in order to reach the acceptance level where CBA may impact successfully upon a system.

One important problem raised by using CBA as a means of deciding eligibility for special education services is the political reality of advocacy groups. Many administrators willing to consider CBA must also consider the impact on numbers of students declared eligible. Altering the discrepancy ratio empirically alters those who are eligible to receive services. Fears of this nature drive advocacy groups into a frenzy. I have seen firsthand the rejection of excellent and innovative ideas that had the support of teachers and administrators because of fears of advocacy group reaction.

Another consideration in using CBA as a districtwide measurement procedure relates to the consistency of curriculum employed across the district. For example, there may be problems related to particular basal reading series across the district. CBA results may not be easily generalized across curricular series. In some districts where the selection of basal reading series are not standardized across schools, this can present significant problems. Additionally, if students within special education classes are judged on different curricula than those in regular education, there may be difficulties in trying to make effective comparisons and decisions about how special education students would be doing if they were being instructed within the regular education environment.

In general, the implementation of a CBA model for declaring students eligible for special education solves some problems and creates new ones. Decisions using CBA may be viewed as potentially less susceptible to racial and ethnic biases (Shinn & Tindal, 1988), often considered significant problems in the use of standardized tests with children of minority groups. While it is true that CBA does not bring with it the content validity problems of racial bias evident on some standardized tests, it may not change the overrepresentation issue of minorities in special education. More research clearly is needed to confirm this, but it seems that CBA could be as biased as the curriculum, if you define bias in terms of the percentages of assessed students found eligible for special education.

CBA may also address the question of subjectivity in decision making. Students declared eligible are done so based on empirical findings, and decisions regarding one's sense that a student is learning disabled, for example, are less likely to occur. Decision-making biases of multidisciplinary teams, as found by Ysseldyke and colleagues (e.g., Algozzine & Ysseldyke, 1981; Epps, Ysseldyke, & McGue, 1984), should be limited, although their findings have not been consistently replicated (Huebner, 1987; Huebner & Cummings, 1985).

Successfully solving some problems, CBA-based eligibility decisions introduce other serious problems. How does a district set its discrepancy ratio to determine eligibility? One can envision a district being told that its special education budget was just cut by 10%. A quick accounting of costs may show that the district can meet its budgetary constraints if it changes its discrepancy ratio from 2.0 to 2.5. Indeed, in one district I am aware of, the district superintendent decided that the percentage of special education students in their district would be no more than 3.0% of the district population. To accomplish this goal, a discrepancy ratio was altered. This type of problem and solution can

create significant discrepancies in who does and does not receive special education services. As such, the decision of who is served is based on politics and not need, potentially raising serious legal as well ethical concerns.

Unless a district makes a substantial and long-term commitment to the development of norms, supports those who are assigned to collect data, supports the maintenance of the data base, and provides ongoing training as staff in the district changes, the success of using CBA to make eligibility decisions is questionable. Further, if this is the only way in which CBA is employed in a district, one legitimately should question its cost-effectiveness. Making an argument for the cost-effectiveness of systemwide implementation of CBA requires use of the data for more than special education eligibility decision making.

How do I design effective interventions for classroom problems?  
Use CBA

Advocates of CBA consistently suggest that the primary value of CBA procedures is the ability to use these procedures to identify effective intervention strategies for academic problems. The evaluation of variables related to the instructional ecology (Lentz & Shapiro, 1986; Ysseldyke & Christenson, 1987), combined with the assessment of individual skills, provides a framework for suggesting potential strategies that may be effective in remediating and preventing academic difficulties. Recommended strategies for intervention usually are based only partially on the data obtained during the assessment. These data offer "educated guesses" as to what may be an effective procedure. However, the choice of appropriate interventions may just as well be based on the combined knowledge, experience, and preference of the teacher, psychologist, or other educational consultant. Some intervention procedures, like classwide peer tutoring, are not really derived as strategies likely to be effective based on the data alone, but are employed as overall instructional strategies because of their proven effectiveness.

There are several models of CBA that do focus explicitly on the development of intervention strategies. Curriculum-based evaluation (CBE), developed by Howell and Morehead (1987), uses a task analysis approach to examine errors in academic responding and then designs instructional programs to teach the needed components or subcomponents of skills. Likewise, Blankenship (1985) and Idol, Nevin, and Paolucci-Whitcomb (1986) proposed a model of CBA that relies heavily on evaluating acquisition of specific curriculum objectives. Perhaps the model with the most substantial link to designing intervention strategies is that developed by Gickling and colleagues



(Gickling & Havertape, 1981; Gickling & Thompson, 1985). Their model is based on the assessment of known and unknown material a student is being taught, followed by the teaching of unknown material under specified ratios to assure student success.

There are several potential implications in using CBA to derive intervention strategies. First, an underlying assumption of CBA is that the academic deficiencies evident in the classroom are the result of an interaction between the instructional ecology and individual student skill mastery. Learning does not occur in a vacuum but in the context of a teaching environment. This component in the learning equation cannot be ignored. Traditional assessment and intervention strategies are often focused solely on the individual. Rarely is the instructional environment considered as the cause of the student's problems. When Johnny cannot spell, it is because he cannot phonetically analyze the words. When he cannot add, it is because he has difficulties in mental operations. How often does the teacher conclude that Johnny cannot spell because corrective feedback occurs too infrequently? Or that he cannot add because the contingencies for performance are not sufficient?

Using CBA to derive intervention strategies requires a shift from viewing problems as person oriented to person/environmental interactions. This shift is more easily said than done. All of us have had numerous experiences with school personnel of all types, including teachers, psychologists, etc., where the inferred cause of identified problems is quickly decided to be skill and personal deficiencies in the student (e.g., auditory perception, dependent personality). Shifting to a person/environment interactional framework will not be accepted easily because it requires evaluation of instruction and instructional components and, by implication, people's ability to teach. This approach to assessment is uncommon and may have limited acceptability among the consumers of this information (i.e., teachers, parents).

A second implication of using CBA for intervention planning is the increased pressure to move a district toward preplacement or prereferral service delivery. There has been significant movement in this direction across the country. Using CBA within a prereferral service delivery model will require more than the typical way in which child-study teams are conducted. The team must have a mechanism to respond to the data collection process. Many child-study teams focus upon determining if students are eligible for special education. This is accomplished by having each member of the team report the results of his or her assessment, with the team jointly deciding if the data suggest the student meets the eligibility criteria. Using CBA within a child-

study team process cannot be simply a reporting of what each member of the team found. Clearly, child-study teams need to learn how to use CBA data to make intervention decisions. They need to learn how to report effectively CBA data beyond consideration of eligibility of services. To implement a service delivery system of this type requires enormous retraining and rethinking of how services are being provided.

A third implication of using CBA data in intervention planning can be seen in the increased instructional decision-making capabilities granted to teachers by this approach. Witt and Martens (1988), among others, suggest strongly that teacher empowerment is critical for successful implementation of any alternative service delivery model. Using CBA for planning interventions offers teachers the perfect opportunity for their expertise to become a critical element in choosing intervention strategies. How comfortable are school administrators with the added power teachers attain when they are permitted to be responsive to their own data collection process that comes with this model? How comfortable are school psychologists in trusting the judgments of teachers?

Another implication of using CBA data to plan interventions is that it may help to remove the mystique of the testing process. Many times, school personnel seem to regard test results, particularly group test results, as the only legitimate means of answering questions regarding student outcome and program success. How many times have psychologists been asked the question, "So what's his IQ?"? When the scores are reported reluctantly, the response is, "No wonder he's having trouble." The IQ score is viewed as some mystical number that identifies, explains, and permits the failure of some students. In contrast, by using CBA data, the performance of the student becomes the criteria for making decisions. There are no mystical concepts or hidden messages. What you see is what you get! When the student is not doing well, we know it, we can see it, we can empirically verify it, and we can ask the question of how to change it! This concept may not be acceptable to many individuals who are trained in models stressing the importance of underlying psychological and educational processes.

Another potential implication of using CBA to assist in intervention selection assumes that teachers and other educational consultants have knowledge of effective intervention strategies. It has been my experience, in three states where CBA has been implemented, that one should not expect teachers to know how to use procedures like peer tutoring, cooperative learning, learning strategies, self-management, or effective use of contingency management. One way to facilitate the selection of intervention strategies is to consider the collective wisdom

of many teachers and education professionals. Using teacher assistance teams or similar concepts has often been successful and does not assume any one individual has the answers. This has been reported in the literature where CBA has been used to assist decision making (Fuchs & Fuchs, 1988; Marston & Magnusson, 1988). Obviously, the provision of training, whereby effective interventions may be taught to teachers and educational consultants, is needed.

One potential concern about moving towards CBA as a critical component of service delivery is the possibility that the use of prereferral intervention models may simply delay, rather than prevent, the placement of students into special education. Clearly, carefully controlled longitudinal research studies, examining the impact of prereferral intervention models when employed systemwide, are needed to determine whether this is occurring.

## ACCOUNTABILITY

### How should I write IEP goals? Use CBA

Using CBA to write IEP goals probably represents one of the most important ways that CBA can be employed. When CBA is used to write IEP goals, we are suddenly thrust into an age of accountability. Teachers can determine objectively if their students meet goals set earlier in the year. Students can see, monitor, and evaluate their own progress toward goals. In fact, students can help write these goals. How often do students attend and contribute to their own IEP goals? How often do students know if they are making progress towards these goals?

Additionally, parents can be offered concrete evidence of educational change. For example, a parent of a boy came to me for an evaluation. The boy had been in a self-contained classroom for students with learning disabilities for 2 years. The mother expressed concern about her son's academic progress after finding he made no improvement for 2 years on the results of the California Achievement Tests. Questioning the value of the placement in a class for students with learning disabilities, she asked for an opinion regarding how much progress he actually had made. An evaluation using teacher interviews, direct observation of the instructional environment, and CBA found he was indeed making significant progress and mastery of skills. Further, the classroom structure employed in his self-contained setting was excellent, and embodied most of the critical variables of effective teaching. After recommending that IEP goals be rewritten in CBA terms, along with progress monitoring, the mother, teacher, and student began to see his

rate of progress within 4 weeks of starting monitoring.

An implication of this increased accountability is the potential misuse of these data. CBA data should not be used alone as indicators of successful teaching. Just because some students do not meet their goals does not imply that the teacher is a poor teacher. Indeed, what seems to be critical is that decisions regarding outcomes of instructional interventions are being evaluated empirically. Fuchs, Deno, and Mirkin (1984) demonstrated that simply getting teachers to use frequent progress monitoring may result in substantial improvements in academic achievement. In many ways, the use of progress monitoring may provide the evidence needed to evaluate clearly the potential necessity for a more restrictive educational placement. For example, if a teacher showed data that suggested a series of unsuccessful interventions were tried during data collection, this may be strong evidence that although the student failed to progress, the teacher indeed was responsive to the data collection process. In contrast, without the collection of these data, teachers may be viewed as failures, based solely on the lack of progress of their students. If this happens, CBA would never gain the sanction of teacher unions!

A related accountability issue is the ability for CBA to reflect programmatic success. By aggregating data across individuals, one is able to obtain a concrete picture of the success of an entire educational program, such as a special education resource room program. For example, Marston and Magnusson (1988) described how CBM was employed districtwide, infused into the screening, identification, instructional planning, monitoring, and evaluation of services for students exhibiting academic skills problems.

### Role Functions

Putting CBA in place will alter significantly the roles of several persons typically involved in the assessment process. Special and regular education teachers are suddenly thrust into a very important and critical role in the multidisciplinary team. These persons become crucial points of information and consultation. They are no longer regarded as simply making referrals to professionals for advice and consultation. Instead, they are viewed as key components in the assessment and remediation process.

Resource room teachers may play a particularly important new role. In most districts, resource room teachers serve in a direct service capacity. They often have their own room where students come for remediation for a portion of the day. Rarely are the knowledge and

skills of these persons made available on a regular basis to teachers in regular education classrooms. Yet, as the service delivery method shifts toward using CBA, these persons can play a crucial role in enhancing the consultation process. Further, these persons can assist in the preventative nature of such services.

School psychologists often have significant adjustments to make. These professionals may feel that CBA does not belong in the realm of their profession. They may see it as strictly belonging to the teachers and therefore, psychologists may reject CBA as not vital to their assessment. This is problematic, since in many districts where CBA has been implemented, it has been the school psychologists who have been instrumental in leading the charge toward its acceptance. School psychologists working in districts where CBA is being employed, particularly as a prereferral model, must examine their current methods of service delivery and recognize the potential of their contribution to the team. Indeed, school psychologists are often some of the most knowledgeable persons in the district on collecting local norms, on the psychometric properties of measurement, and on analyzing and interpreting data. Using school psychologists in this way could broaden their roles far beyond their traditional service delivery model.

Administrators also may see the benefits of using CBA. One of the most common issues raised by administrators is the need to design effective schools. Such schools contain an atmosphere of support, collaboration, collegiality, and professionalism. It seems that providing an empirically based mechanism to evaluate instructional decisions for students could assist administrators in providing valuable feedback to teachers and parents. Likewise, administrators are always faced with the need to allocate carefully their shrinking resources. At times, the allocation of these resources can be difficult, raising questions about administrative priorities. Administrators may be forced to overallocate resources to certain students simply because they fit into a particular category of disability. Yet, these same students may not need the equivalent level of resources as other students who also meet such categorical classifications. CBA offers a potential mechanism to determine instructional requirements based on educational needs rather than category. As such, decisions regarding the allocation of resources can be made based on empirical data and potentially offer more equitable distributions of available support. Ultimately, accountability for these decisions is also provided as data continue to be collected.

## CONCLUSIONS AND FINAL REMARKS

Clearly, there are numerous ways in which CBA would impact upon every aspect of a school district. Individual students, regular education teachers, special education teachers, administrators, school psychologists, educational consultants, and others typically involved with the multidisciplinary team all will be affected by the full implementation of CBA.

Let me return to the reality of the situation and leave fortune telling behind. There have been a few successful demonstrations reported of wide-scale attempts to use CBA as a mechanism for altering service delivery. In particular, the efforts in Minneapolis (Marston & Magnusson, 1988), Pine County Cooperative School District (Germann & Tindal, 1985), and the State of Iowa (Grimes & Reschly, 1986) stand out. In both cases, the impact upon the system was clear. Marston and Magnusson (1988) indicated the role of the resource room teacher has changed dramatically to include increased expectations of individual students, along with increased accountability for the effectiveness of instruction. Essentially, using CBA as a model for evaluation and designing instruction resulted in expectations of behavior change, and directly implied that teachers can be instrumental in altering student performance. Likewise, this expectation led to resource room teachers feeling more accountable for their instruction.

The role of the school psychologists also changed in Minneapolis and Iowa. Instead of the traditional responsibilities of performing evaluations for eligibility, school psychologists were assigned full-time responsibilities to organize and oversee the implementation of CBM. This included coordinating the data collection and norming process, and providing in-service, data analysis, and other activities in support of the program. Interestingly, because the Minneapolis system employed resource room teachers as the primary "doers" of CBM, school psychologists were still expected to maintain responsibilities in consultation, and to direct treatment evident prior to the CBM program. However, Marston and Magnusson (1988) noted that a report provided by Canter (1986) showed psychologists to be spending proportionally more time on fewer cases, while increasing the amount of time spent in consultation.

Administrators' roles have also been altered by the implementation of the Minneapolis CBM project. With the objective measurement provided by CBM, resource allocation, training needs, and policy development are consistent with a system based on student outcomes. Noting needs for in-service training, as well as determining needed

teaching resources, can be determined by looking directly at school-based performance levels.

Despite the many positive and valuable outcomes possible with systemwide implementation of CBA, there are obviously important concerns and considerations. Probably one of the most critical elements for the effective implementation of CBA is acceptance of the assumptions, methodology, and value of such a measurement system. Without a change in these basic attitudes, CBA is likely to be another passing educational promise that will never reach its potential.

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