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AUTHOR Lewis, Angelo John, Ed.
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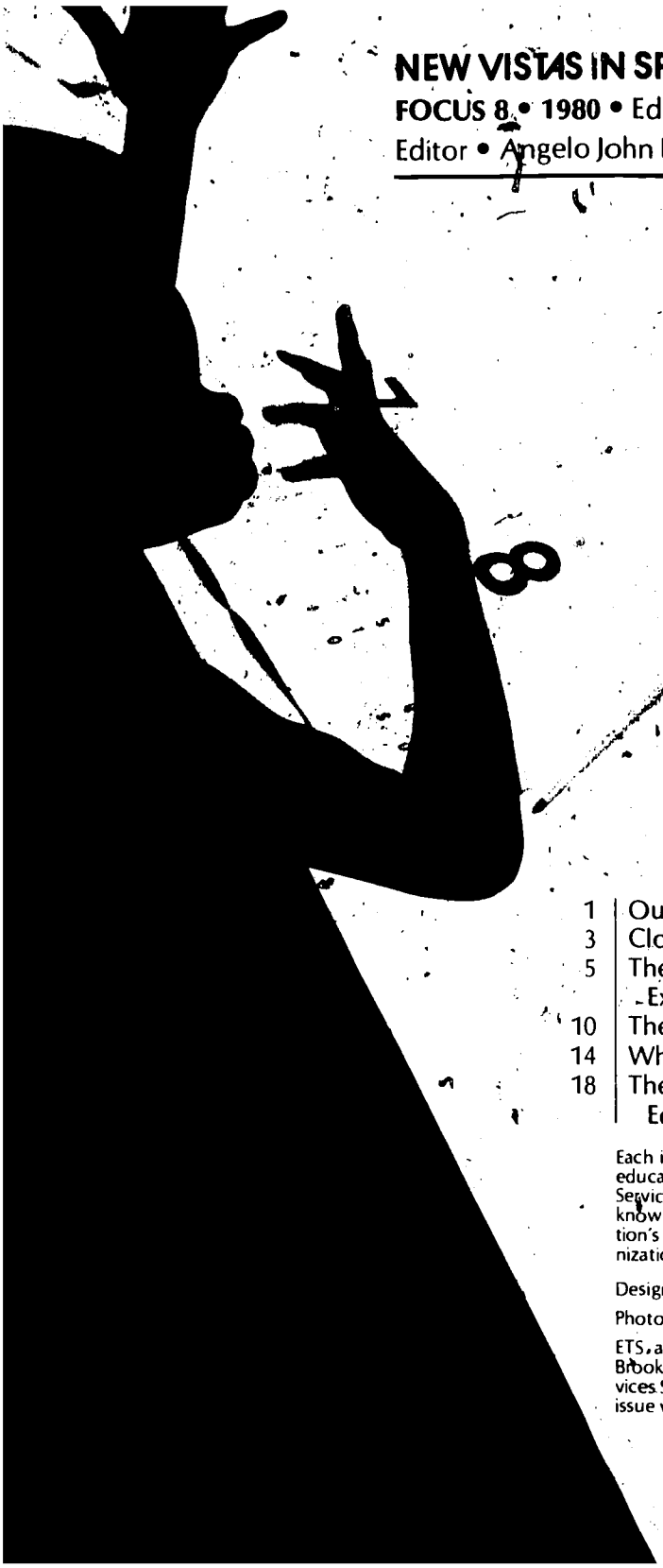
ABSTRACT

The booklet discusses the role of the Educational Testing Service (ETS) in research on aspects of special education. Among research projects noted are those undertaken at the Institute for the Study of Exceptional Children: studies comparing premature with normal infants, evaluating the Infant Assessment Battery, measuring mother-infant interaction, and studying learning to learn strategies with handicapped children. Other ETS projects described include IO testing and the gifted, identification of learning disabled (LD) students, correlation between LD and delinquency, and the LD child's relationship with his family. (CL)

FOCUS: NEW VISTAS IN SPECIAL EDUCATION



NEW VISTAS IN SPECIAL EDUCATION

FOCUS 8 • 1980 • Educational Testing Service
Editor • Angelo John Lewis

Each issue of FOCUS discusses a critical aspect o education today and the work Educational Testin Service is doing to help cope with it. Most widel known for standarized tests, ETS is also the na tion's largest nonprofit educational research orga nization.

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Out of the Dark Ages

For the nation's public schools, the impact of Public Law 94-142, the Education For All Handicapped Children Act of 1975, was nearly as profound, if not as dramatic, as the U.S. Supreme Court's decision to outlaw school desegregation.

Essentially a civil rights package, the bill signed into law by President Ford in 1975 and now applicable to handicapped children ages five to 21 was the culmination of a "quiet revolution" in policy that had begun a decade earlier. Like the historic Brown vs. the Board of Education (of Topeka) decision mandating the inclusion of racial minorities into the educational mainstream, PL 94-142 articulated a fundamental notion: Free education is a right for all, rather than a privilege for some.

Although Americans have long supported the concept of free public schooling for all, frequently the "all" has not included a portion of the 10-12 percent of school age children who are "exceptional." These are the sight, hearing, speech or orthopedically impaired; the intellectually gifted or limited; the emotionally disturbed and the learning disabled.

The judgment of how or if to educate this population was traditionally left up to individual states. As a result, some children were denied access to schooling entirely, others were placed in institutions where the emphasis was on day-care rather than learning, and still others—frequently minorities—were labeled "educable mentally retarded" on the basis of IQ tests many consider culturally biased.

By the time PL 94-142 became law:

- Over 1.75 million American children were being excluded entirely from school solely on the basis of their handicaps.
- More than half the estimated eight million handicapped children in the nation were not receiving appropriate educational services they either needed or were entitled to.
- Almost three times as many black and culturally different children as white children were being placed in classes for the "educable mentally retarded." Many school districts, according to recent congressional testimony by the Office of Civil Rights, "placed children with English language difficulties or cultural differences in special education programs without properly evaluating their skills."

Since PL 94-142 became law, the share of the nation's school-age handicapped children receiving special education has jumped from less than 50 to nearly 75 percent. Institutionalized, incarcerated, and rural handicapped children who never received an education are now being served. And the

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philosophy of special education has shifted from confining exceptional children to classes of their peers towards "mainstreaming" them into regular classrooms.

Despite these gains, most educators agree there remains a chasm between reality and the dream of full educational opportunity for the exceptional. Part of the gap undoubtedly results from lingering societal attitudes about the handicapped—that they're "weak," "a burden on society," and "incapable of participating in life." Some believe such myths have affected the practice of special education itself. "Special education is one area where what's practiced in the classroom is 10 years behind what's been proven in the laboratory," one research scientist was heard to say.

Closing the Gap

By 1975, special educators were reacting to the successes of behaviorists who demonstrated that, contrary to popular opinion, handicapped people can be taught very complex skills and be stable and dependable employees when adequately prepared for entrance into the job market. PL 94-142 mandated the change in educational practice that was presaged by scientific findings. There was a rush to revise out-of-date curriculums, update archaic means of assessment, and

locate children who had not been receiving an education because of their handicaps.

One result has been an increasing awareness of rights among parents of exceptional learners. Rather than being content with a limited education for their children, parents are filing suits aimed at forcing school districts to acknowlege that the rights of handicapped children are as inalienable as those of any American.

A Firm Commitment

Educational Testing Service (ETS) is among the organizations currently involved in the evaluation of special education curriculums, and developing tools for measuring the competencies of handicapped and gifted youth. Its efforts have included assessments of programs for the multihandicapped, the hearing impaired, the gifted, the retarded, and the learning disabled. ETS's Education Policy Research Institute (EPRI)

has also done research for the Bureau of Education for the Handicapped (BEH), recently renamed the Office of Special Education.

ETS has traditionally made special arrangements for handicapped students to take its standardized tests, developing braille, large-type and cassette versions of tests, and approving the use of people to read and record answers to questions for disabled test takers. In some cases, separate test rooms have been approved and extended time limits authorized.

In response to the challenge of PL 94-142, ETS recently inaugurated Consulting Services in Special Education (CSSE). Drawing from a pool of expertise in and outside ETS, CSSE helps school districts develop means of locating, evaluating, and placing unserved handicapped children and appraises the special services provided them. CSSE also conducts inservice training programs for teachers, supervisors, and support personnel.

ETS is also involved in basic research aimed at finding new techniques for the early detection and assessment of disorders, the development of innovative treatment and educational programs for the handicapped and gifted, and the training of professionals and parents in the treatment of young handicapped children. Much of this effort takes place in the Institute for the Study of Exceptional Children (ISEC), an interdisciplinary, collaborative effort of two research-service organizations: The ETS Infant Laboratory and the pediatrics department of St. Luke-Roosevelt Hospital Center in New York City.

The Institute For the Study of Exceptional Children

Under the direction of Michael Lewis, the institute's researchers are conducting a three-year longitudinal study comparing premature infants with their normal peers. Data gathered by contrasting the developmental competencies of sick term,

To understand physical and cognitive growth, one must know how these are affected by the social environment.

healthy term, sick premature, and healthy premature infants is being examined in hope of finding new means for the early detection of handicaps in "at risk" infants, those most likely to develop handicaps later in life.

Some believe that early conditions such as anoxia, prenatal, and birth trauma, low birth weight, and drug addiction translate later into cognitive defects. Others say that, because the central nervous system readily adapts to early trauma, these complications may—if the infants' environment is supportive—barely affect later behavior. ISEC researchers take the latter view and operate from the theoretical assumption that the identified developmental dysfunction is a result of the interaction between the infant's early trauma and his or her environment.

In exploring this interaction, the researchers assess the four different domains of development: the physical, socio-emotional, perceptual-cognitive and communicative-linguistic. As these affect one another in complex ways, the aim is to pinpoint the nature of these relationships and pursue their implications for the course of development.

The Interactive Nature of Development

ISEC's belief that the social environment is a crucial component of development is rooted in the history of the psychological research on exceptional children. In the '30s, H. M. Skeels studied children who lived in an orphanage and who had experienced very limited sensory and social stimulation in their daily lives. He found that when children originally classified feebleminded were transferred from an orphanage into another institution where they received more care and attention, their IQs improved at so rapid a rate that many became nor-

mal within a few months. Other researchers have shown that IQs of children with Down's Syndrome (mongoloidism) can jump as many as 30 points when they are transferred from institutions to private homes.

To understand physical and cognitive growth, one must know how these are affected by the social environment, ISEC scientists believe. Towards this end, they have developed ways to assess the total environment in which the exceptional infant lives.

The Infant Assessment Battery

This philosophy has been incorporated into the Infant Assessment Battery (IAB), an array of assessment tools for exceptional learners developed in 1977 by ETS researchers Lewis and Jeanne Brooks-Gunn. More than 100 children, ages one to four and with different handicaps, have been given the IAB, and a broad base of information on their skills has been compiled.

Lewis believes that an analysis of the data may lead to a breakdown in what he calls "the tyranny of the classification system." As there is as much variation in abilities among children in some exceptional categories as there is among children in the normal population, Lewis and other researchers are convinced it may be more feasible to group children according to their levels of performance competence rather than their biological labels.

Mother-Infant Interaction

The IAB differs from some other assessment instruments in that it attempts to measure more than motor skills or deficits — attributes that ISEC scientists believe rarely provide an accurate index to later cognitive growth.

One social index the battery assesses is the infant's relationship with his or her mother, through which the child learns

cognitive as well as emotional skills. There appear to be several basic differences between the ways mothers interact with handicapped infants and normal ones. For example, at one year, normal children are more likely to cry than handicapped children when their mothers leave the room; mothers of handicapped children are more likely to use non verbal ones, such as touching, holding, and gesturing, than mothers of normal children.

By giving parents feedback on how they relate to their handicapped infants, ISEC researchers hope to influence them to change inappropriate home interactive styles. The results of the battery, the Infant Assessment Profile, also give educators a picture of each child's strengths and weaknesses and are useful in curriculum design and child evaluation.

Learning-to-Learn Strategies

Some handicapped children differ from normal children in that they tend to have difficulty learning that simple actions, such as the pushing of a buzzer, produce certain results, such as a "buzz" sound. Facilitating such fundamental learning to learn strategies for handicapped infants is the purpose of ISEC's Contingency Intervention Program. This is done by the use of contingencies, or action-outcome pairings, in which the child is awarded an interesting outcome for choosing a correct action.

For example, on one contingency intervention device developed at ETS, an infant sits on a stool and has the option of pulling a string or pressing his foot on a pedal. The correct choice will produce a pleasing result, such as music or a slide

One social index the battery assesses is the infant's relationship with his or her mother. There appear to be several basic differences between the way mothers interact with handicapped infants and normal ones.

projection of the infant's mother. As the child learns this and increasingly complex tasks, information is gathered about his or her ability to learn, the degree of relationship between the child's learning and cognitive states and how certain reinforcers, such as a change in task complexity, produce certain responses, such as crying.

Preliminary analysis of the actions of some children in the first year of life, some premature and some normal, suggests

As an infant (below) learns whether pulling a string or pushing a foot pedalle produces the right response, information is gathered about the child's style of learning. The infant's capacities are then charted on an Apple II computer (left) and shown to a parent.

For years, the judgment of who was "intellectually inadequate" was made by educators and psychologists who, in many cases, had only one guide – performance on an IQ test.

the following: Learning does not occur in all infants by the time they are 10-weeks-old, although by 16-weeks, most are able to learn; premature and normal infants do not necessarily differ in capacity to learn.

The IQ Test Controversy

An underlying assumption uniting the work of ISEC scientists with others involved in the development of new, holistic means of assessing exceptionality is the notion that no single test can serve as a decisive indicator of a child's subsequent performance. This concern—addressed in PL 94-142—is relatively recent as regards the second largest class of exceptionality—the mentally retarded.

For years, the judgment of who was "intellectually inadequate" was made by educators and psychologists who, in many cases, had only one guide—performance on an IQ test. Originally designed as an objective means of determining which children needed special class placement because of limited ability, IQ scores too often have been the sole determinants of children's academic fates. In recent years, this use of IQ scores has come under increasing attack.

The content and manner of administering some traditional intelligence tests have also been cited as reasons for their inappropriateness in assessing the exceptional. For example, a child with poor hand-eye coordination may know how to complete a manipulative task, but be unable to complete it in

the alloted time. Or a youth with a behavior disorder may know the answer to a question but respond with "I don't know" in order to end an unpleasant experience as soon as possible.

But the sharpest attacks on intelligence testing have stemmed from their alleged cultural and linguistic bias—a bias many believe responsible for the assignment of disproportionate numbers of minority children to special education classes.

Critics say the tests include language that is outside the experience of culturally different children. "When asked, 'What is a gown?' (culturally different) children may shake their heads because they have never heard the word before," Frank Hewett, a professor of education and psychiatry at the University of California at Los Angeles, writes in his book, *Education of Exceptional Learners*. Items included in the principal intelligence tests in use in this country were, until recently, pretested on standardization groups that were disproportionally white and middle class.

Although the publishers of IQ tests claim to have included more minority children in their standardization groups

by 1973, there are those who claim the tests remain basically unfair.

Another theory, espoused by CSSE director Randy Bennett, questions not so much the adequacy of present measurement tools, such as IQ tests, but the competency of those who use them. Bennett's research has documented low levels of assessment proficiency among those who routinely select, administer, and interpret tests in special education. He notes that even with improvements in existing measurement technology, the fair and equitable assessment of children can not be accomplished until assessment personnel are adequately trained.

Assessing the Gifted

IQ testing also affects the group of learners who are exceptional in the most positive sense—the gifted. Just as the misuse of IQ tests has apparently led to the disproportion of minorities in special education classes, it may have also tended to exclude them from classes for the gifted. The sole use of IQ tests to determine high aptitude places some culturally different children in a "Catch-22" situation: To be classified gifted, they often have to excel on tests based on the definitions of giftedness of the mainstream culture, standards that are difficult for culturally different learners to achieve because they are not of that culture.

Somewhat typical is the case of the Flint, Michigan, Community Schools. In 1977, 62 percent of the students in the Flint system were black, but blacks made up only 26 percent of those classified as "gifted." Flint administrators asked ETS to design a test for determining giftedness which would be as free of cultural biases as possible. The aim was to eliminate reliance on academic records and traditional IQ tests for determining giftedness, to broaden the definitions of giftedness, and, reflecting that broadening, to identify the gifted by new means.

ETS scientists Theodore R. Storlie and Patrimpas Prapuolenis responded to the school systems' request by building upon a theoretical model provided by Winton H. Manning, ETS senior vice president for research and development. In a paper prepared for the Carnegie Council on Policy Studies in Higher Education shortly before the Bakke decision, Manning had argued that colleges and universities were justified in considering race as a factor in admissions policy—but not in their use of predetermined racial quotas. Instead, he advocated that institutions first choose a pool of candidates qualified on the basis of minimal standards and then select a class according to several predetermined criteria, such as students' place of residence, economic status, or career goals, of which race would be but one.

ETS' Midwestern Regional office modified this idea by working with Flint school administrators, teachers, psychologists, and students' parents, to determine what kinds of giftedness to measure. They decided on creativity, intellectual potential, learning ability, motivation, leadership and social self-awareness, and exceptional academic achievement.

Standards of admissibility were then determined. Flint Community Schools' representatives determined that students had to fall into one of three categories: They had to have [illegible] two years above grade level on the reading or math [illegible]ns of the SRA Achievement tests, they had to be nominated in one of the six areas of giftedness by a faculty member, or they had to place at or above the 90th percentile in their school and grade on a questionnaire of behavioral indicators answered by their parents.

To be classified gifted, culturally different children often have to excel on tests based on the definitions of gifted of the mainstream culture, standards that are difficult for them to achieve because they are not of that culture.

Once a pupil was designated eligible, a detailed behavioral checklist of his or her capacities was completed by the classroom teacher. The instructors forwarded their lists, prepared in a way to guarantee candidates' anonymity, to a final selection committee comprised of community representatives.

Panel members rated students and ratings were combined to form composite scores. If the panel decided it had insufficient information, it could refer a candidate for further testing. Administrators then were able to decide which of the highest ranking pupils would be included in the giftedness program.

Initially implemented on a pilot basis in five schools, the basic concept behind the Flint "culturally fair" method of identifying gifted children was expanded in 1979 to include all the system's schools. By that time, minority participation was up to 44 percent—much more in line with the school system's racial composition. Initial comparisons showed statistically insignificant differences between performances of children selected by the old and new procedures. Students chosen by the old process, however, tended to have slightly higher reading scores—a result which might have been expected.

"We wanted to be a model for the nation," Mary Lou Meerson, coordinator for alternative programs of the Flint Community School District, said. "Since the study began, people have been calling from all across the country, all saying they have run into the same problem. If you use IQ scores to determine who's gifted, there's no way around it, you'll get the same kinds of kids."

Who Are the Learning Disabled?

If those with different viewpoints as to what constitutes giftedness could fill a small auditorium, scholars with irreconcilable views as to what consititutes "learning disabilities" (LD) could fill Yankee Stadium. Academics not only disagree on the

causes of LD, they don't even agree on the incidence among the school population. Estimates are that from two to 30 percent of school aged children have some type of learning disability, most not resulting from a known neurological cause.

The definition accepted by the U. S. Congress—although not universally agreed upon—is as widely used as any. The learning disabled, the definition states, are:

> Those children who have a disorder in one or more of the basic psychological processes involved in using language, spoken or written, which disorder may manifest itself in imperfect ability to listen, think, speak, read, write, spell or do mathematical calculations. Such disorders include such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Such term does not include children with learning problems which are primarily the result of visual, hearing, or motor handicaps, mental retardation, or emotional disturbance, or environmental, cultural or economic disadvantage.

These include children with reading difficulties and speech disorders, children who have trouble writing without reversing letter order, children prone to hyperactivity, children with certain behavior disorders. The salient point is that their disabilities stand in the way of academic achievement.

ETS research scientist Paul Campbell, who has done extensive work with LD populations, believes the key to disentangling this Gordian knot lies in understanding the learning

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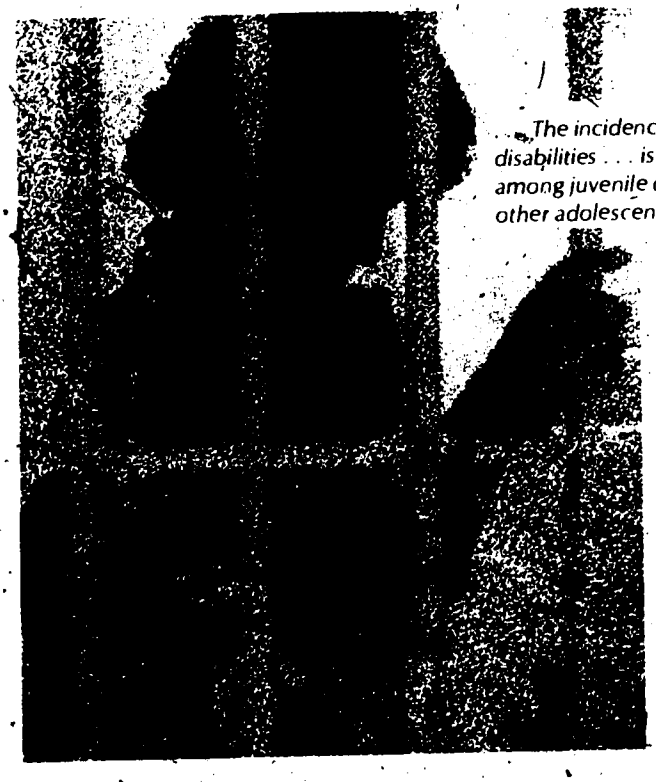
process. If learning is a precisely synchronized chain of events connected by the input, integration, and production of information, a remedial approach to LD should start by locating the breakdown in the chain, Campbell believes. Thus, an LD child's difficulty in performing verbal, quantitative, and manipulative tasks would stem from an interference with the process of receiving information, of utilizing the information in the cognitive process, or of communicating the results of cognition.

Of Learning and Delinquency

In 1977, Campbell was asked by the Law Enforcement Assistance Administration and the National Institute for Juvenile Justice to examine a link that had long been suspected, but never proved: the relationship between LD and juvenile delinquency.



. . . The incidence of learning disabilities . . . is significantly higher among juvenile delinquents than among other adolescents.

Towards this end, Campbell and a team of ETS researchers compared the rate of LD among adjudicated delinquents to that of normal students. The sample included several thousand 12- to 16-year-olds in Baltimore, Indianapolis, and Phoenix.

The results of two years of research show that the incidence of learning disabilities may be greater than generally supposed, that it is significantly higher among juvenile delinquents than other adolescents, and that, despite the higher incidence of LD among the adjudicated, the exact relationship between LD and delinquency remains unknown.

During the course of his study, Campbell also found that a significant number of children exhibited the symptoms of LD, but not the results. By use of an apparent "coping mechanism," potentially disabled children still were able to perform up to the level of their peers. Campbell believes that further studies might show how the mechanism operates. If the process could be understood, it could possibly be taught to those who haven't developed it.

The LD Child and His Relationship With His Family

ETS scientists Irving Sigel and Ann McGillicuddy-DeLisi are concerned with LD children's social and family lives and how these relate to the learning process. The two are currently conducting studies on the interactions of atypical, or speech-communicative disordered, children and their parents.

Co-principal investigator Sigel has done extensive work with parents of disadvantaged children in order to help improve the way they teach their children. He believes it is possible to help atypical children's parents develop teaching styles that will encourage their children to develop representational and cognitive abilities—abilities which may be part and parcel of speech and communicative disorders.

By comparing the belief systems of atypical children's parents with the belief structures of normal children's parents, the two scientists hope to provide educators with data that

will improve the quality of parental participation in the learning process. They plan to design a model of parent education that will help parents become more aware of the significance of their belief systems in interactions with their LD children.

The Changing Face of Special Education

One of the problems that still confront special educators was underscored in recent interviews with teachers of two different schools: rural Blawenburg, NJ's Rock Brook School and urban Trenton's Developmental Day Care Center.

Although the schools serve different populations, the two teachers both said that commercially available educational materials only partially fill their needs. As a result, more than 90 percent of the schools' materials are teacher-made.

"We make most of our own materials," said Cheryl Chesney of the Rock Brook, a school for children with communicative disorder. "We do use prepared things like reading books. But our teachers make up about 95 percent of their own materials. We find that each individual child is so different that even if we use prepared materials, we have to adapt them for each child."

"We have to rely on a lot of our own materials," said Jane Moreno of Trenton's Developmental Day Care Center for moderately to severely handicapped preschoolers. "Most infant toys you get at the store are very tiny. Most children with visual handicaps can't use them. You look in a catalog and an item sounds fantastic. But when you get to use it, you find it's unsuitable to the targeted child's needs.

The Long Road Ahead

Both women were echoing one of the major findings of a recent ETS survey of some 30,000 special educators across the country. An overwhelming majority felt that the quality of existing educational materials for the handicapped was inade-

Rock Brook School's Cheryl Chesney shows some of her teacher-made educational materials. More than half of special education teachers surveyed said they made more than 25 percent of their own educational materials.

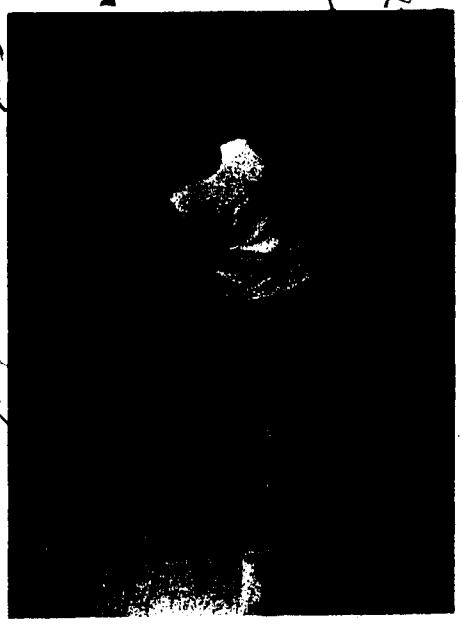
quate. More than half said they made more than 25 percent of their own materials, although most acknowleged they had no formal training in the art.

Funded by the Bureau of Education for the Handicapped (BEH) and coordinated by the ETS Berkeley office, the first National Needs Assessment of Educational Media and Materials for the Handicapped illustrated several of the problems still confronting special education. And there are other issues that are equally as serious:

- A recent report by the U.S. Department of Health, Education, and Welfare (HEW) found that three out of four teachers, administrators, parents, and students said that there are unserved handicapped children in the schools.
- The head of the BEH recently informed Congress that approximately 14,000 handicapped in New York City alone are awaiting evaluation or placement. Some had been waiting for as long as two years.

- A recent study by the Office of Civil Rights (OCR) reported that at least 6,000 children in residential institutions throughout the country were receiving no education of any kind.
- According to a recent BEH report, national level private school officials, particularly the U.S. Catholic Conference, are saying that public schools in many districts are not providing needed services to private school students.

Perhaps, the "mainstreaming" of the exceptional child into the "normal" world represents the last and most elusive index of society's commitment to equal rights. We've come a long way since the days when the handicapped were banished from society and the gifted were ignored. But there's a long way to go.



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