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EDUCATION LEGISLATION 1967

HEARINGS

BEFORE THE

SUBCOMMITTEE ON EDUCATION

OF THE

COMMITTEE ON

LABOR AND PUBLIC WELFARE

UNITED STATES SENATE

NINETIETH CONGRESS

FIRST SESSION

ON

S. 1125 and H.R. 7819

TO STRENGTHEN AND IMPROVE PROGRAMS OF ASSISTANCE FOR ELEMENTARY AND SECONDARY EDUCATION BY EXTENDING AUTHORITY FOR ALLOCATION OF FUNDS TO BE USED FOR EDUCATION OF INDIAN CHILDREN AND CHILDREN IN OVERSEAS DEPENDENTS SCHOOLS OF THE DEPARTMENT OF DEFENSE, BY EXTENDING AND AMENDING THE NATIONAL TEACHER CORPS PROGRAM, BY PROVIDING ASSISTANCE FOR COMPREHENSIVE EDUCATIONAL PLANNING, AND BY IMPROVING PROGRAMS OF EDUCATION FOR THE HANDICAPPED; TO IMPROVE PROGRAMS OF VOCATIONAL EDUCATION; TO IMPROVE AUTHORITY FOR ASSISTANCE TO SCHOOLS IN FEDERALLY IMPACTED AREAS AND AREAS SUFFERING A MAJOR DISASTER; AND FOR OTHER PURPOSES

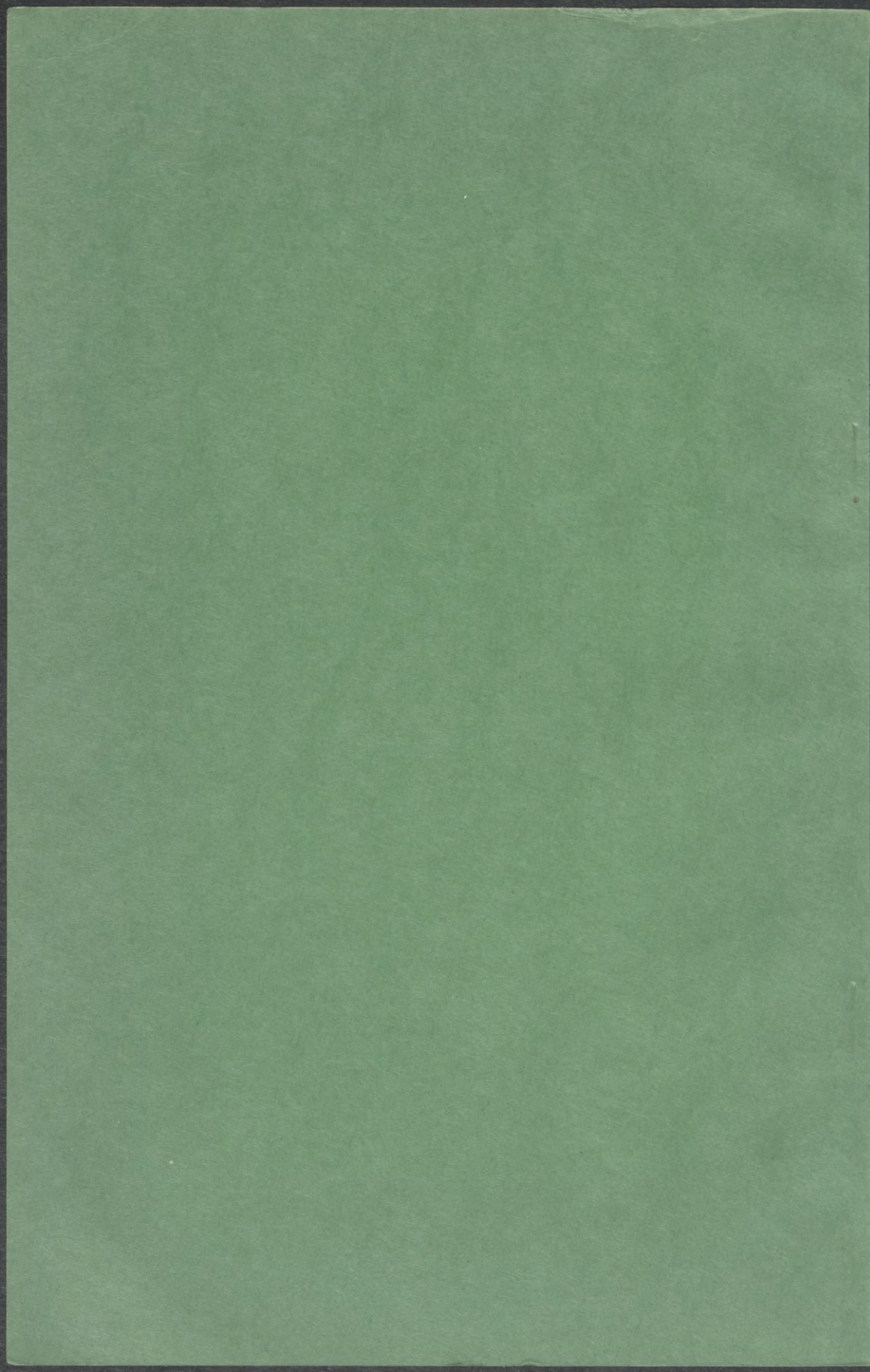
AND RELATED BILLS

APPENDIXES F, G, AND H

Part 10



Printed for the use of the Committee on Labor and Public Welfare



EDUCATION LEGISLATION, 1967

HEARINGS BEFORE THE SUBCOMMITTEE ON EDUCATION OF THE COMMITTEE ON LABOR AND PUBLIC WELFARE UNITED STATES SENATE NINETIETH CONGRESS FIRST SESSION ON

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AND RELATED BILLS

APPENDIXES F, G, AND H

Part 10



Printed for the use of the Committee on Labor and Public Welfare

U.S. GOVERNMENT PRINTING OFFICE

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WASHINGTON : 1967

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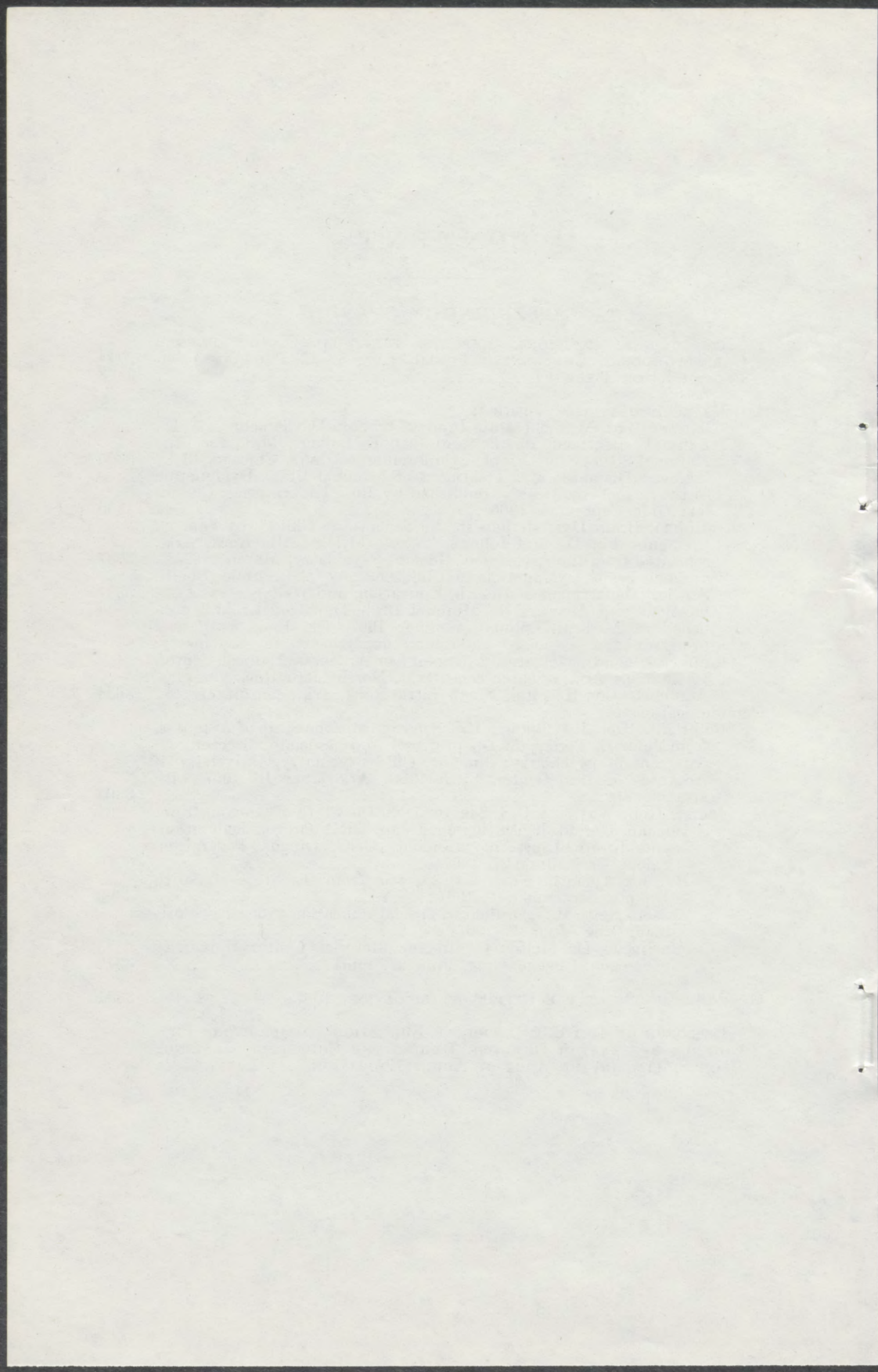
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APPENDIX F

Resolutions, Petitions, Reports, Memorials, and General Correspondence Concerning Public Law 89-10 Programs and Provisions of Title VI

U.S. SENATE,
COMMITTEE ON THE JUDICIARY,
Washington, D.C., September 19, 1967.

HON. WAYNE MORSE,
Chairman, Subcommittee on Education of the Labor and Public Welfare Committee, Washington, D.C.

DEAR SENATOR: I am asking that every consideration be given Senator Gruening's amendment, which would provide funds so that each state would be capable of carrying on a minimum program for the education of handicapped children.

The nature of special education for these children is such that no state can have an effective program without having at least a minimum program. I urge your favorable consideration be given this amendment to Title VI of the Elementary and Secondary Education Act.

With kind regards, I am,
Sincerely,

QUENTIN N. BURDICK.

UNIVERSITY OF ARKANSAS MEDICAL CENTER,
DEPARTMENT OF PSYCHIATRY, CHILD GUIDANCE CLINIC,
Little Rock, Ark., June 16, 1967.

HON. J. WILLIAM FULBRIGHT,
U.S. Senate, Washington, D.C.

DEAR SENATOR FULBRIGHT: I wish to bring to your attention a defect in the bill Elementary and Secondary Education Act of 1965 (including amendments and revisions through 1967) in which handicapped children are defined as "deaf, mentally retarded, speech impaired, visually handicapped, emotionally disturbed, crippled or other health impaired persons." The deficiency in the definition is that children with *specific learning disabilities* are not mentioned. This kind of child has perceptual, reading, and/or arithmetic disability to the extent that he can not make progress in the usual classroom even though his general intelligence is in the near average, and in some cases in the above average range. There are large numbers of these children, estimated to be from 5 to 15% of the school population. Many of them become dropouts, delinquents, or become such adjustment problems that they end up as wards of state mental hospitals. In California law they have been defined as "neurologically handicapped" and there are many other terms, such as word-blindness, dyslexia, perceptually handicapped, minimal brain dysfunction, minimal cerebral dysfunction, hyperactivity syndrome, brain damage syndrome, maturational lag, etc. From the educational standpoint the most acceptable terms are: specific learning disabilities or specific learning disorders. The reason I favor the term specific learning disabilities as opposed to simply learning disabilities is that certain influential educators are insisting that the term learning disabilities be used to include children with frank mental retardation. The addition of the word "specific" sets apart the large group of children which I have in mind. Such children cannot be regarded as mentally retarded. They cannot be simply regarded as emotionally disturbed; however, many of them are *also* emotionally disturbed. But there are still large numbers of these children with specific learning disabilities who are *not yet* emotionally disturbed. It would be quite

unwise to lump all of these under the term "emotionally disturbed." This leads to semantic confusion and a kind of enforced dishonesty among the school people, psychologists and physicians who are charged with the responsibility of planning programs of special education, teacher training, and in the selection of children for special classes. The literature on this subject has grown to be enormous in the past ten years. I am enclosing some material in which we ourselves have had a leading hand. The article by Clements and myself has been requested by thousands of professional people all over this country and the world.

Some of the persons qualified to speak with expert knowledge on this subject and who reside in the Washington or New York area are: Dr. Richard Masland, Director National Institute of Neurologic Diseases and Blindness; Dr. Richmond S. Paine, Professor of Pediatric Neurology, George Washington University; Mr. Robert Hall, Chief, Branch of Pupil Personnel Services, Bureau of Indian Affairs; Dr. Donald Kenefick, Director of Research Foundation, National Association for Mental Health, Inc., 10 Columbus Circle, New York; Mrs. Barbara Kenefick, Center for Urban Education, 33 West 42nd Street, New York; Dr. Raymond L. Clemens, Department of Pediatrics, University of Maryland Medical Center, Baltimore, Maryland.

I urge you to amend the definition of handicapped children in the Education Act to state clearly that it includes the large number of children with specific learning disabilities.

Sincerely yours,

JOHN E. PETERS, M.D.

*Professor and Associate Director, Department of Psychiatry; Director,
Child Psychiatry*

- *a symposium*

CHILDREN *with* MINIMAL BRAIN INJURY

- Sam D. Clements, Ph.D.
- Laura E. Lehtinen, Ph.D.
- Jean E. Lukens, M.S.



**National Society for Crippled Children and Adults
2023 West Ogden Avenue • Chicago, Ill. 60612**

about . . .

Sam D. Clements, Ph.D.

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Dr. Clements is assistant professor in the Departments of Psychology and Pediatrics, and director of the Child Guidance Study Unit of the University of Arkansas Medical Center, Little Rock.

Laura E. Lehtinen, Ph.D.

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Jean E. Lukens, M.S.

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Miss Lukens is County Coordinator of the Preceptual Development Program introduced several years ago in the Oakland County (Mich.) Schools system.

These papers were presented at the 1963 annual conference of the National Society for Crippled Children and Adults held in Chicago.

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THE CHILD WITH MINIMAL BRAIN DYSFUNCTION— A PROFILE

by Sam D. Clements, Ph.D.

In a small town in central Arkansas, lives a ten-year-old boy. His parents are intelligent, college-educated, financially secure, and very concerned for and warmly interested in the welfare of their only offspring. After a stormy first four years, marked by frequent visits to the family physician because of the boy's high degree of irritability, disturbed sleep pattern, his feeding problem, and frequent outbursts of unpredictable temper, they were assured that he was a "normal" youngster with overly-anxious parents.

Dissatisfied with this continual and hackneyed explanation of the child's unusual behavior, they began to make the rounds of professional experts, determined to find the answer for the child's general discontent before the time when he would be entering school. They traveled thousands of miles and spent thousands of dollars. At age five, the boy was diagnosed as "adjustment reaction of childhood," due to parental mishandling; at age six as mentally retarded; at age seven as a "schizophrenic" child; at age eight as a child with minimal brain dysfunction.

Now, at the ripe old age of ten years, he is a child of above average general intelligence, progressing nicely in school, both academically and behaviorally, and is the pride and joy of his parents and community.

I would like to give you a soliloquy written by the father of this youngster, which he presented publicly at a recent organizational meeting of parents of similar children. I present it with his permission.

"How many of you men have come home from work in the evening to find your son having a tantrum because he has to take a bath? After a terrific struggle, your wife gets him into the tub, walks into the living room, and you ask, 'Why don't you discipline that child during the day so that when I come home at night, I can have some peace and quiet?'

How many of you have had old friends avoid visiting in your home after your child's third or fourth birthday because they could not endure the noise, confusion, and irritability of your child?

Have you ever come home to find your wife in tears because a neighbor has told her to keep your son out of their yard?

How many of you parents have made the rounds from the family physician, to the pediatrician, to the psychiatrist, and back again, only to be given such earth-shaking advice as,

'Don't worry, he'll grow out of it,' or 'If you parents would sleep in the same bed, the child would feel more secure?'

Have you been called for a conference by your child's teacher, knowing full well what she is going to say?

How many times have you thought, 'There's nothing like this in *my* family!'

Have you and your wife had many late hour discussions about 'What have we done as parents to fail our child?'

After more behavior problems and failure at school, you try again for professional help. But, this time it is different. You have found the right diagnostic facility, and oddly enough, right in your own backyard.

This time you are told that your child has minimal brain dysfunction, or is mildly neurologically handicapped, or is perceptually impaired. Whatever term is given the condition, it means that your child is different and cannot help most of the things he does. And, with the proper help and management, these problems can be overcome.

Then comes the period of acceptance, and this too, is as difficult as any previous problem. With the acceptance, however, the home situation begins to improve—for the first time in eight years! No longer do you and the teacher pressure the child to work at tasks which he is unable to perform. Then, the miracle happens. With the correct teaching methods and home handling, your child experiences success for the first time.

At this point, you are not concerned with cause. You are only elated by the fact that your child is being helped. You know for the *first* time what it is like to have a normal, happy home.

These experiences I share with you as a parent."

This, I feel, exquisitely portrays some aspects of the child with minimal brain dysfunction from the viewpoint of a parent. Since, however, it is our duty to survey such children from many angles, perhaps a more apt description would be a "series of silhouettes," rather than a single profile of the child with minimal brain injury.

It is imperative that we clearly understand what is meant by the term "minimal brain dysfunction." The following definition is offered: The diagnostic categories subsumed under the rubric of minimal brain dysfunction refer to children of average or above general intelligence with learning and/or behavior difficulties ranging from mild to most severe, which are due to subtle deviations arising from genetic variations, bio-chemical irregularities, perinatal brain insults, and/or illnesses and injuries sustained

during the years critical for the development and maturation of those parts of the central nervous system having to do with perception, language, inhibition of impulses, and motor control.

The accompanying symptom picture, or some of its parts, has been referred to by such terms as: mild neurologic handicapping; perceptual impairment; the brain-damage behavior syndrome; the Strauss-Lehtinen syndrome; mild organic compromising; and others.

These subtle organic deviations of brain function can be conclusively diagnosed provided the proper time, techniques, and attitudes are utilized.

There is a constant flow of children referred to child psychiatry clinics and other diagnostic centers, who are apparently of good intelligence, yet who fail to progress in academic skills at the expected rate. Some of these youngsters are relegated to the special education classroom designed for the mentally retarded; others are retained in grade for a year or more in hopes they will catch up; most are passed along automatically with their age group even though it is known that the child cannot compete academically with his peers. Not only do these children experience learning difficulties, but they exhibit behavioral differences which are a source of irritation and bewilderment to parents, teachers, and playmates.

The less astute observer might refer to such a child as lazy; immature; undisciplined; a slow-learner; emotionally-blocked; or an under-achiever. Projecting such a youngster into the future, we would usually find that once he had been labeled by one or more of the above-mentioned ambiguous terms, he would be allowed to drift aimlessly through school, passed along grade after grade, meeting defeat after defeat, getting more and more behind in academic skills, until the time he becomes sixteen years of age and can drop out of school. He then attempts to find his place in the economic market only to discover that he is no more able to meet the qualifications for gainful employment than he was to achieve at school. He then joins the legion of the misfits. He may drift into delinquency; spend some time in a "correctional" institution; or end up in a state hospital.

If, somewhere along this line, his behavior becomes *too* disordered because of frustration and failure, he may be referred for professional help. What happens to him at this point will depend upon the adequacy of training of these diagnostic experts as colored by their personal attitudes and beliefs concerning the causes of learning and behavior problems of children.

One would like to believe that our graduate schools of psychology, medicine, social work, and education are teaching future diagnosticians and therapists all that is really known about children who deviate. Such, however, is not the usual case, and represents one of the most flagrant and harmful examples of poor communication among professionals, because in the end, it is the children and

their parents who must suffer.

In the majority of present day training centers and institutions charged with teaching our future clinicians regarding maladjusted children, most of the emphasis is given to one side of the story only—the psychogenic side. The course material is steeped in the traditional stereotypes of sibling rivalry, rejecting parents, repressed hostility, oedipal conflict, repressed sexuality, and the like. These are presented as being the major causes of deviant behavior, with only casual reference to the spectrum of organic factors which are primary to all learning and behavior. It is very like a child's game of make believe and we are playing like nothing new has been learned about human behavior over the past fifty years.

This vogue among child guidance workers of attributing the behavioral and learning deviations seen in children almost exclusively to the rearing patterns and interpersonal relationships experienced by such youngsters has created a long time obstacle to the understanding of and most useful therapeutic aid for a countless number of misunderstood children who grow up to be a countless number of misunderstood adults. This is not meant in any way to belittle the importance of environmental factors as they contribute to any child's difficulty. This is simply a plea that they be placed in their proper perspective. I *am* saying, however, that this lopsided approach to the explanation of disorganized behavior has impeded progress in our efforts to help troubled children because of the closed-shop atmosphere that prevails in psychiatry, social work, education, and psychology.

Past and recent studies have indicated that as many as 70 percent of the youngsters referred to child guidance clinics for whatever reason, can be shown to have mild neurologic differences which form the basic etiology of their difficulties. This leaves but a relatively small percentage whose problem behavior can be explained on a purely psychogenic basis. These facts and view points, however, are not shared by all clinical child workers. One is usually received with a deaf ear and a closed mind if an attempt is made to recall for such professionals that the environment is still only *one* of the major determinants of behavior and that *we are guilty of having given but cursory consideration to the organism which is reacting to that environment.*

What are the discernible and diagnosable features of this child with mild organic impairment, or mild brain injury, or minimal brain dysfunction?

Here is a list of the outstanding characteristics associated with this syndrome, in which only a few or many of the symptoms may appear in a given child:

1. **NORMAL OR ABOVE GENERAL INTELLIGENCE** (as determined from either the Verbal or Performance Scale of the WISC) Characteristic WISC patterns have been isolated

for these children and will be discussed later. The important consideration here is that the results of intelligence evaluation clearly indicate that although achievement is variable depending upon the nature of the task, the overall level of intellectual functioning is within normal limits and that we are *not* dealing with a child who is generally mentally retarded, that is, deficient in all areas of endeavor.

2. *SPECIFIC LEARNING DEFICITS*—Child cannot read at grade or age level; a mildly stressful situation may bring forth typical dyslexic errors; spelling poor; difficulty with arithmetic; difficulty with abstractions and whole-part relationships; difficulty in mastering tasks which are dependent upon intact visual-motor-perceptual integration.
3. *PERCEPTUAL-MOTOR DEFICITS*—Printing, writing, and drawing poor; poor and erratic performance when copying geometric figures (Bender Visual Motor Gestalt test); often attempts to compensate for the latter by task-perseverance and/or innumerable and meticulous tiny strokes of the pencil; often has difficulty in reproducing geometric designs with blocks; difficulty with figure-ground and/or whole-part discrimination.
4. *GENERAL COORDINATION DEFICITS*—Child often described as awkward or clumsy; this may appear in either fine muscle performance or in overall coordination, or both.
5. *HYPERKINESIS* (or less frequently, hypokinesia)—Child appears to be in constant motion, flitting from one object or activity to another, or may be merely restless and fidgety; we have considered that the child's "drivenness" may manifest also as voluble, uninhibited speech, or as disorganized thinking, even in the absence of outward hyperactivity. Some children with learning and behavior symptoms and one or more "equivocal" neurological signs do not show hyperkinesia, but instead can be described as "slow as molasses," since they move, think, and talk at a very reduced rate. Frequently, this slow-responding child will have an "aphasoid" quality in his speech.
6. *IMPULSIVITY*—The child cannot keep from touching and handling objects, particularly in a strange or overstimulating environment; he frequently speaks without checking himself; he may curse, be insulting, or eagerly relate all the family secrets. His impulsivity easily leads him into conflict with the demands of conformity as established by family, school, and society. Some children may commit striking anti-social acts, to the point of fire-setting, stealing, and even murder, with only a modicum of provocation.
7. *EMOTIONAL LABILITY*—The child may be "highstrung,"

irritable, aggressive, or easily moved to tears; he will have quick changes of emotional behavior from high temper to easy manageability and remorse; he may be panicked by what would appear to others as a minimally stressful situation; however, some are again at the opposite end of the continuum in that they are consistently sweet-and-even tempered, cooperative, diligent, and display a very high frustration tolerance.

8. *SHORT ATTENTION SPAN AND/OR DISTRACTIBILITY*

—The child is unable to concentrate on one thing for very long; he especially fades out when abstract material is being presented. Even with this symptom, some show a tendency to become locked in a simple repetitious motor activity or preoccupation with one verbal topic. Some children show fair attention span when their interest is aroused, but when not so engaged, display marked distractibility to casual stimuli.

9. *"EQUIVOCAL" OR "SOFT" NEUROLOGICAL SIGNS—*

Among the most frequently seen of such signs are: transient strabismus; dysdiadochokinesis; poor coordination of fingers; mixed and/or confused laterality; speech defect, or a history of slow speech development or irregularity; and general awkwardness.

10. *BORDERLINE ABNORMAL OR ABNORMAL E.E.G.—*

Although agreement in this area is not complete, the high frequency of borderline or abnormal brain wave test records reported is felt to be significant.

It is important to reemphasize that a given child may not have symptoms in all or even many of these areas since each child has his own particular cluster of symptoms. The level of his intelligence and nature of his underlying temperament determine to a great extent the form and excellence of his maneuvers to compensate for deficits or deviations.

It is probable that certain general principles underlie the above symptoms. For example, most may be due to perceptual defects having to do with the capacity to receive, hold, scan, and selectively screen out stimuli in a sequential order; to sustain a repertoire of background gestalten as compared with foreground gestalten; to perceive subtle and often abstract behavior gestalten which permit proper socialization to take place. Proprioception may be one of the perceptual areas at fault in some of these children, i.e., manifesting as a deficiency in the ability to perceive, discriminate between, and retain images or sequential body movements in space. It may be that there is a deficiency in inhibitory functions having to do with checking and suspending verbal or motor activity until the incoming sensory data are compared with stored information. When the fantastic complexity of the brain is considered, with its myriad interlocking circuits and groupings

of circuits, it is not surprising that in the presence of any disordering of stimuli-monitoring, each child should manifest a unique cluster of symptoms, and that he should be handicapped in learning and in adaptive behavior if the environment is sufficiently trying relative to the magnitude of his defect.

To continue the series of silhouettes, I would like to present a brief case history of such a child which will illustrate dramatically some of the areas in which he is different. First, let us follow his attempt to read a paragraph of third grade material. The correct paragraph, on the right, is from the Gray Standardized Oral Reading Paragraphs:

One there was a little cat and a mouse.
They . . . never . . . in the same house
the cat did of the mouse tail.
"Party passed," said the mouse,
"have me my tail came."
"No," said the cat, "I will not
give you your tail tail you
me some mike."

Once there was a cat and mouse.
They lived in the same house. the
cat bit off the mouse's tail.
"Pray puss," said the mouse,
"Give me my long tail again."
"No," said the cat, "I will not
give you your tail till you
bring me some milk."

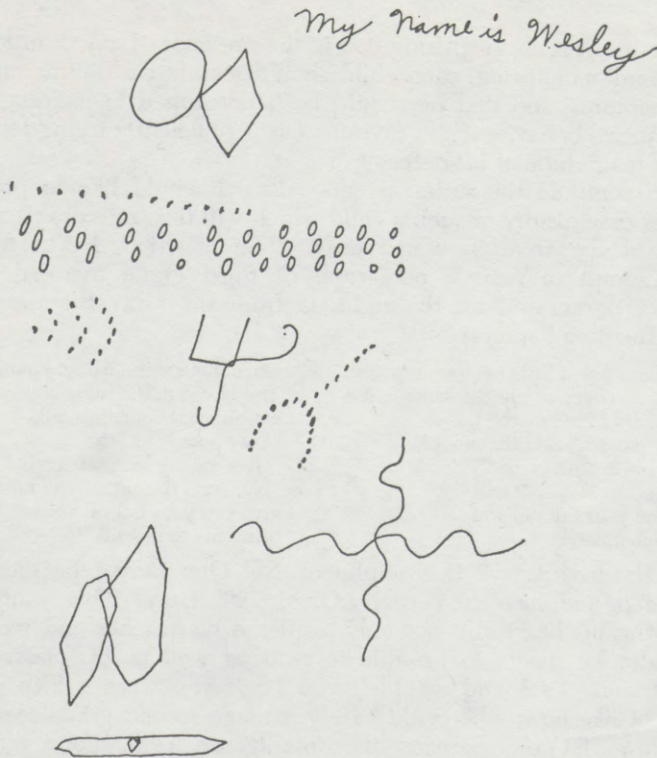
Retarded? Lazy? Undisciplined? No! One cannot be mentally retarded and have a Verbal I.Q. of 120! Lazy? This youngster is trying his heart out—not only to please his teacher and parents, but also he *wants* to be able to read as well as his classmates. Frustrated? *Yes!* And wouldn't you be if you were a fifth grade student like he is who could barely manage second grade reading?

Now, let us compare the intelligence evaluations on our reader, whose name is Dwight, and another boy, Wesley, of the same age, from an equivalent socio-economic background, and in the same fifth grade classroom. These are the results of the Wechsler Intelligence Scale for Children (W.I.S.C.):

WISC PATTERNS

		Wesley	Dwight
VERBAL	Sub-test		
	Information	11	15
	Comprehension	12	18
	Arithmetic	10	5
	Similarities	11	16
	Digit Span	10	12
PERFORMANCE	Picture Completion	11	11
	Picture Arrangement	10	10
	Block Design	11	6
	Object Assembly	10	4
	Coding	12	5
VERBAL I.Q.		105	120
PERFORMANCE I.Q.		106	80
FULL SCALE I.Q.		106	104

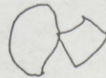
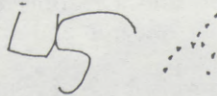
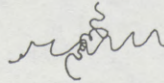
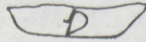
The WISC is divided into two main types of tasks—verbal and performance. It is so designed that a score of 10 would indicate "average" ability for age. Note the evenness of achieve-



ment in the various tasks by Wesley. Not so with Dwight. His achievement is "spotty" or "scattered" and he is particularly deficient in tasks requiring intact visual-motor-perceptual ability. Of particular diagnostic significance is the 40-point discrepancy between the Verbal and Performance I.Q. scores of Dwight. The Full Scale I.Q. scores, however, are both in the "normal" range. Wesley is considered a very good student, while Dwight is failing, and has since he entered school, although he has been passed year after year.

Now, let us compare their drawings of the Bender Visual Motor Gestalt figures and also a sample of handwriting and spelling. The Bender reproductions of Wesley are well executed, with smooth lines, intact figures. Note his writing at the top. The same figures reproduced by Dwight are considered typical of an "organic" Bender with poor spatial arrangement; lack of closure; "dog ears" when attempting to draw angles. Note in particular Dwight's handwriting and spelling. A typical dyslexic error is the reversal of the letters in the word "is."

my name is Dwight



The routine child guidance diagnostic workup on children referred for learning and behavior problems, divides into four main categories: 1) pediatric physical examination; 2) medical, developmental, and social history, plus a school report containing both academic and behavioral information; 3) psychological evaluation; and 4) an expanded neurological examination. Let us assume that the child has been given a recent conventional pediatric physical examination, and that gross conditions such as cerebral palsy, mental retardation, eye and ear defects, etcetera, have been ruled out. We have at our disposal an entire department of pediatrics, however, if we desire further physical workup, a careful gestation and developmental history must be obtained, first by means of specially prepared forms which are sent to parents prior to the visit to the clinic, and then elaborated through personal interview. This history must include virus illnesses during pregnancy, bleeding, premature contractions, rupture of membranes, birth weight, etcetera. Diseases and illnesses sustained by the child must be located as to age and severity. The usual

interviews with parents and child must be obtained to determine specific interpersonal dynamics, particular emotional stresses and traumata. A special school report containing behavioral and academic observations by the child's teachers and principal is obtained before the child is seen in the clinic.

The minimal psychological test battery for any child being evaluated is the complete Wechsler Intelligence Scale for Children, the Bender Visual Motor Gestalt, and the Gray Standardized Reading Paragraphs or similar test. Personality assessment is not considered as a separate and distinct entity, since clues and indicators are constantly being produced by the child, and hence are apt to occur at any time during the workup. We do not routinely use the standard projective techniques, since we feel that in most cases straight-forward interviewing and observing during all contacts with the child yields more than adequate information. A small number of appropriate picture cards from the Michigan Picture Test may be used for some children. We depend most heavily on the WISC, the Bender, and a reading evaluation. The final test battery must await further research and applications from the field of perception.

Of great concern to us is the prevalent use of relatively unrelated tests and techniques to assess intelligence. Items such as drawings of persons or objects, Rorschach and other projective techniques, or 20-minute interviews are considered inadequate, even as screening devices, in approximately the intellectual functioning level of children, and in particular, the child with minimal brain dysfunction.

The complete Wechsler, consisting of a minimum of five Verbal subtests and five Performance subtests, should be administered routinely. There is no combination of three or four WISC subtests which can substitute for the entire scale, since specific deficiencies may go undetected by the omissions.

Other investigators have searched in vain for a single subtest pattern within the WISC which would be diagnostic for brain damage. Thus far, we have isolated three principal patterns. The most common is characterized by scatter in achievement in either or both the Verbal and Performance Scales (WISC Pattern I). Low scores (relative to others) most frequently occur in Arithmetic and Digit Span in the Verbal Scale; and Block Design, Object Assembly, Coding, and Mazes in the Performance Scale. Frequently with WISC Pattern I, the final Verbal and Performance I.Q. scores turn out nearly equal and the internal variation in subtest scores is ignored by the individual interpreting the results.

The second most frequent WISC pattern (WISC Pattern II) is that in which the Verbal I.Q. is 15 to 40 points higher than the Performance I.Q. If the Arithmetic subtest score is excluded, the difference is more pronounced since number concepts are based on symbols. In this instance, the child's achievement on

the other Verbal tasks is sufficiently high that such a drop in Arithmetic is obscured or compensated for in the total Verbal I.Q. score. On the other hand, the child experiences great difficulty with most of the Performance Scale items, but, particularly, the pure visual-motor-perceptual tasks, which include Block Design, Object Assembly, Coding, and Mazes. The end result, however, is that the Performance I.Q. often falls into the mentally deficient range while the Verbal I.Q. is in the normal or above range. In such cases, the Full Scale I.Q. score (the one usually quoted) is virtually meaningless as an indication of over-all intelligence, since it is a composite of these two extremely variant dimensions of intellectual functioning.

The third and least frequent pattern (WISC Pattern III) is the reverse of WISC Pattern II, i.e., the Performance I.Q. is 10 to 30 points higher than the Verbal I.Q. Such a child has difficulty in expressing himself verbally. He must actively search for the words necessary to express his usually concrete solution to a "thought" problem. On the other hand, he is quite proficient at the subtests which constitute the Performance Scale. It is our experience that the child with WISC Pattern III invariably has reading disability.

Now, the claim is often made that "anxiety" will lower subtest scores. It is then indeed noteworthy that "anxiety" can be so selective, and rather suggests that the perceptual systems involved for accomplishment of that task are fragile or impaired.

The Bender Visual Motor Gestalt is used as a measure of perception and visual-motor coordination. The common errors made by children with brain injury are distorted spatial arrangements, perseveration, "dogears," rotations, incomplete closure, etcetera. The child's total approach to the task, the time he takes, as well as the final reproductions must be taken into account. The over-all "organic" Bender stands out strikingly when compared with the norms provided by Bender in her original monograph, which can serve as a frame of reference in lieu of long clinical experience with the instrument.

Gray's Oral Reading Paragraphs are used as a measure of sight reading ability because of their simplicity of administration and content. The child is usually asked to read aloud beginning with paragraph two grade levels below his present grade placement. The time of the school year should be taken into consideration when determining reading level. The number and type of errors are noted as well as smoothness, speed, approach (phonetic, or not), and comprehension of material. There are many other excellent tests available which can be used to assess reading ability.

As usually performed, the conventional neurological examination is reported as "normal" in the type of child we are considering. The physician has his mind set on clear, unequivocal signs and is not sensitive to the value of "soft" signs.

Complex integrated behavior is rarely observed or specifically tested for by a referring physician or even in the usual child guidance workup. The physician often does not synthesize in this thinking the fact that these neurological signs, general behavior, and intellectual functioning are all manifestations of the nervous system. Somewhere between the specialties of medicine and psychology, this important synthesis gets lost or neglected. A special neurological examination designed for child guidance usage is contained in detail in our article dealing with diagnosis and treatment of children of school age with minimal brain dysfunction.* It is an expansion of the work done by many people, and in particular from the pioneering work of Dr. Lehtinen and Dr. Strauss in their classical book, *The Psychopathology and Education of the Brain-Injured Child*, published in 1947.

The neurological items most often found to be present in our child guidance population have been: irregularities in gross coordination; perceptual-motor difficulties; defect in fine coordination; strabismus; dysdiadochokinesia; reading difficulties; mixed laterality; some degree of ambidexterity; and the presence of or history of speech defect. Of the behavioral manifestations, the most frequent are: short attention span; distractibility; hyperactivity; and impulsiveness.

Such a diagnostic procedure can best be done in a medical center setting or in a facility that has at its disposal the various specialists particularly trained to work with children. This type of comprehensive workup can rarely be obtained in the office of a psychiatrist or psychologist in private practice. For one thing, it is very time-consuming, but each procedure is deemed absolutely necessary—nothing can be omitted—if our desire is to help the child.

The treatment plan must include the areas of home management, educational planning, possible medication, and interpretation to and counselling of the parents.

Once the diagnosis of minimal brain dysfunction has been confirmed, the parents are given an "organic" interpretation of the learning and/or behavior problems of their child. We insist that both parents be present for this conference. The relief they feel and lessening of guilt associated with the possibility of being "bad" parents is obvious. This explanation makes parents more understanding of the child's condition and paves the way for a different set of attitudes in handling him. We attempt to answer all questions they pose concerning the past, present, and future. We assure them we will be here to help them in all future planning. We may schedule several such conferences if we feel it is necessary.

We feel that proper medication can be a most important adjunct to the treatment plan. The drugs we have found most

*"Minimal Brain Dysfunction in the School-Aged Child, Diagnosis and Treatment" by Sam D. Clements and John E. Peters. *Arch. Gen. Psychiatry*, March 1962.

helpful thus far in reducing hyperactivity and irritability, and in increasing attention span are captodiamine hydrochloride (SUVREN); thioridazine hydrochloride (MELLARIL), and the amphetamines, (DEXEDRINE and BENZEDRINE). Since children vary in response to various drugs and dosages, there is often the necessity of a period of experimentation with different medications and dosages to reach the best and most useful prescription for a given child. After the drug is regulated, the child is assigned to one of our "medication management" clinics. These children are seen at two to three month intervals for checkups and blood studies.

There has been some talk that physicians are waging "chemical warfare" against our children and adults as well. I would be the first to agree that the indiscriminate use of drugs is a dangerous and perhaps unethical practice. For this reason, medication is used only when it can be helpful, and is most carefully prescribed, supervised, and controlled.

The child's teacher is informed that he is on medication and she is asked to assess its value as it applies to the child's behavior at school.

We are most gratified by the number of children who improve markedly and immediately on a regimen of medication, special teaching, and infrequent counselling of parents. This fact is important in answering the complaint often heard that child guidance clinics bog down in a few intensive psychotherapy cases. The community stands to gain by the utilization of all methods that are successful.

The diagnosis of minimal brain dysfunction is made on the basis of clinical behavior, history, psychological evaluation, and neurological signs. The accumulated weight of various signs and symptoms or the singular specificity thereof, e.g., hyperactivity, reading disability, scatter or discrepancy between Verbal and Performance scores on the WISC, guide us in making the diagnosis. These must be evaluated against a background of environmental and interpersonal determinants. At this stage of our knowledge, it is logical to assume that any disorganization of brain function due to injury or naturally occurring constitutional deviations, places a hardship on the developing child. The accidentally or naturally occurring organic deviations exist in a scale from the gross to the subtle and to different degrees in the various functional and interlocking units within the brain. To deny this premise is to deny that the brain is the organ of the mind and that brains can have important variations from individual to individual.

These conclusions concerning minimal brain injury were influenced by the following factors:

1. Similarities between perceptual defects and symptoms of children and adults with known brain damage and children in which a history of brain damage cannot be firmly established,

yet who have similar symptoms.

2. The fact that symptoms cluster together to make recognizable entities. This is especially true of the hyperkinetic syndrome and specific reading disability, but is also true of the more subtle variations that do not fit precisely into these categories.
3. Statistical studies which show a positive correlation between complications of pregnancy and the incidence of later appearing learning and behavioral symptoms. One study indicated such a correlation between the childhood virus diseases occurring under age three years and reading difficulty.
4. Studies which have shown that there is a heredity basis for some cases of dyslexia.
5. Organicity as the primary basis for the clinical entities under discussion is lent support by the high ratio of males to females for hyperkinesis, dyslexia, impulsive acts, etcetera. This could be on the basis of "normal" developmental lag in males making them more susceptible to the disorganizing effects of brain damage and stresses during the years critical for learning symbol behavior and for acquiring self-inhibiting patterns.
6. The excellent response of these children to medication and educational planning *without benefit of psychotherapy*.
7. The ever present and oft disparaged fact that innumerable siblings reared under sufficiently equivalent conditions do not show these particular learning and behavior symptoms and that countless children reared under psychopathogenic conditions from the mildest to the most severe do not develop learning and behavior symptoms.

Much too often we have seen parents who are "good" parents and who have a child who cannot learn to read, or who is a behavior problem, or is impulsive and hyperactive, or whose speed of mentation is distinctly different from his siblings, for us to jump to the conclusion that the parents must have mishandled the child. The prevailing climate of opinion in both professional and "magazine" psychiatry is such as to create in these parents the conviction that they are somehow, by some magical, subtle aberration in their attitudes and behavior, to blame for the child's condition.

It is necessary to affirm again that psychiatry and psychology must take into account the full spectrum of causality from the unique genetic combination that each individual is, to his gestation and birth experiences, to his interaction with significant persons, and finally to the stresses and emotional traumata of later life after his basic reactions patterns have been laid down. If we cannot at present measure, say, the contribution of the child's genes to his emotional characteristics, then we must leave a large, empty space on the formula of causality until we can. It is all

too easy, if one is committed by bias and habit, to detect in almost any mother or father, attitudes and behavior which can be envisioned as causing the reading difficulty, destructiveness, or difficulty in concentration on studies.

Insofar as the diagnostic procedure is concerned, we hold that all areas must be evaluated for each child referred to a child guidance clinic regardless of reason. The psychologist or psychiatrist can no more elect to omit one or more of his basic procedures than the pediatrician can fail to listen to his patient's heart or lungs. We also hold that the prevailing fashion in child psychiatry, psychology, and social work of turning a deaf ear to organic etiology unless it is grossly obvious and of being interested in and attentive only to the intrapsychic and interpersonal factors has placed such professional workers in the position of poor acceptability by the general public which we attempt to serve.

It is my feeling that we are on the threshold of a revolution in the child guidance field. At this point, our foot is just inside the door, but the ranks of feet-on-the-ground type child workers have swelled over the last 15 years, and we come well-armed. In time, this poorly constructed psychogenic obstacle course must fall by the wayside. But, rather than curse the darkness, let us busy ourselves lighting candles wherever we can.

A PLAN FOR EDUCATION

by Laura E. Lehtinen, Ph.D.

The intelligent non-learner or slow-learner has presented an educational challenge since schools first took up the responsibility of educating every child. It is now known that within this group of poor achievers is an undetermined number of children whose learning failure or adaptive behavior difficulties can be directly related to physiological dysfunction, underdevelopment, or actual tissue damage in the central nervous system.

Present day diagnostic techniques and clinical insights in the specialties of psychology, pediatric neurology, and encephalography make it possible to identify the existence of a disturbed condition in the central nervous system which is adversely affecting the child's learning and adaptive behavior. Chief among the various causal explanations which have been proposed are that the central nervous system malfunction is the result of reproductive or neonatal casualty as suggested by Strauss⁴ and Pasamanick³, that it is the reflection of a maturational lag as proposed by Bender or that specific learning deficits are the result of genetic constitutional factors as suggested by Hallgren¹ and Hermann². The condition is referred to with many labels among others minimal brain damage, perceptual handicap, central nervous system dysfunction, neurological dysfunction, maturational lag, and so on.

It would greatly simplify our diagnostic and therapeutic task if these children were characterized by a common set of specific symptoms but they are not. In broad outline they resemble each other in learning impairment, difficulties in adaptive behavior, the presence of a variety of minor neurological signs, and irregularity in development in the central processes of perception, memory, concept formation and language. Individual patterns of learning, psychological test performance and behavior vary considerably. As in every normal child variation is introduced by individual differences in 'types', environmental influences, temperament, and level of innate ability. Pathological factors such as extent and location of damage, the developmental state attained at the time the damage occurs and perhaps etiology add to and exaggerate the already present unique individuality of the organism.

This conference has selected for consideration the brain-injured child of "normal" intelligence as determined by standardized psychological test batteries. Recognition of a continuum of functional ability underlying the central nervous system dysfunction is crucial to the greater understanding of the capabilities and limitations of all brain-injured children. Educational approaches and educational goals are different for the perceptually handicapped child of normal intelligence than for the organically impaired child in the slow learner or borderline intellectual classification.

Still different from either of these two groups is the brain-injured child of retarded mentality. Much frustration for the teacher and injustice to the child can result from failure realistically to take into account the general level of the child's ability irrespective of any organic symptomatology.

Although there is much variability in any unselected group of perceptually handicapped children certain similarities can also be observed. These characteristics deserve brief mention because of the way in which they relate to educational planning for the child. In our group of six to 12 year olds, all of whom have been medically diagnosed as having central nervous system impairment, the following similarities are apparent.

First, the nervous system does not perform its motor functions smoothly or well. Coordination deficits in small muscle use, in balance, in large muscle coordination or in integrated perceptuo-motor acts are present and may be observed by the physician along with more specific neurological signs. Reports of parents of lack of mastery of common physical skills of childhood and the time at which important developmental milestones were passed offer additional evidence for developmental delay.

Second, the child's behavior departs from the norm in characteristic ways. In addition to the motor functions another of the tasks of the nervous system is to maintain a nice balance of inhibiting and facilitating impulse flow and to screen out from attention stimuli which are irrelevant and non-contributory to a given task. The child with impaired central nervous system functioning cannot do this as well as expected. His nervous system may permit too many extraneous stimuli from auditory, visual, and kinesthetic channels to reach a level of awareness which requires that he attend to them. He then appears distractible.

The nervous system of another child inhibits input from peripheral sources so thoroughly that he does not respond to stimulation until it is well above ordinary levels of strength. The maldevelopment of these inhibitory and facilitating functions is seen in the child's response to stimulating or exciting situations. His emotional response is touched off by relatively slight stimuli, progresses rapidly to a point bordering on loss of control and takes longer to subside spontaneously. Emotional lability is observed in many of these children but not lack of emotional responsiveness or inappropriate responsiveness.

A high activity level is normal for the pre-school child, abnormal if it is excessive or if it persists into school age. Hyperactivity is common in the child with central nervous system impairment, usually diminishing with age. In the school-age child it may manifest itself more in restless body movements, noisiness and excessive talkativeness. Impulsiveness is seen in the young child as dashing about, in the older child as difficulty restraining the wish to touch objects within view, interrupting conversations

with unrelated ideas and hitting or contacting others in social or play situations.

The child usually shows a lessened capacity for sustained effort than would be expected in a normal child of comparable age and ability but if he is well motivated will work for short periods of time over a longer total time to complete his project. It is also common to see a deterioration of integrated behavior and blocking of learned responses under time pressure or emotional stress.

The child's efficiency and command of skills vary from day to day depending upon various internal and external conditions.

These are the most commonly occurring behavioral signs observed in our group of perceptually handicapped children. Are there similarities in their intellectual functioning?

In our group we have found three major patterns on the Children's Wechsler. The most frequent pattern is the one in which the Verbal IQ is 10 to 35 or more points higher than the Performance IQ. In this test pattern the Performance IQ is often in the mentally retarded classification while the Verbal IQ is in the normal range. Most often the child's vocabulary is good, verbalization fluent, comprehension and information relatively good and arithmetic score low. This child gives the impression of being rather bright and competent verbally—an impression his verbal IQ confirms; his poorly organized or confused behavior and his inept visuo-motor performance is reflected in the performance quotient. The full-scale IQ which obscures the differential between verbal and performance abilities also obscures real understanding of this child's difficulties.

The next most frequent pattern we encounter is the one in which verbal and performance measures are not greatly discrepant, but in which wider scatter exists between the low and high-scaled scores obtained on the various subtests. It is not uncommon to find differences in subtest scaled scores ranging from five to ten points.

Occurring with least frequency is the pattern of the performance IQ 10 to 20 points higher than the verbal IQ. The child with this pattern gives the impression of being rather well organized, competent in the performance of small duties, and capable of coherent performance with concrete materials. He is less articulate verbally than other children (although not always less eager to talk). Children with this intellectual test pattern may have some accompanying difficulty in following rapid speech and in differentiating words of similar sounds. Some variety of memory weakness is often also present. These children almost always present reading problems. Parents and teachers are puzzled by the great difficulties experienced by a child of this type in reading when he appears to be otherwise so competent and alert.

On specific tests of visuo-motor organization such as copying

patterns with marbles or copying simple line drawings these children show evidence of impaired function. As might be anticipated the child whose Wechsler performance quotient is low makes more errors and errors of a different kind than the child whose performance quotient is high.

The relationship between test pattern and adaptive behavior is, of course, most evident at the extremes.

The child with good verbal and poor performance ability usually speaks well and clearly at the usual age and develops a good vocabulary if he comes from a home environment in which he is exposed to good language patterns. He avoids playing with put-together toys, blocks, puzzles, lacing cards, beads to string and so on and has only indifferent skill in playing games. He may show less than average interest in looking at picture books but will be delighted to sit quietly while someone reads to him. Talking and listening in all their variants become his preferred activities because he adapts to his environment primarily through the auditory rather than the visual modality. His visual perceptual organization develops through necessity to the minimum required for moving about in space, avoiding hazards, and identifying objects around him. He does not enjoy projects requiring visual perceptual or perceptuo-motor skills or games dependent on visuo-motor organization because they strain his capacities and require an expenditure of mental effort which overweighs the satisfaction obtained from the activity. Parents observing their child's play patterns report that he was never interested in such toys or activities. Lack of ability leading to lack of interest would be a more correct explanation.

The adaptive pattern of the child with performance abilities superior to verbal ones is in many ways the reverse of the verbal child. To him the source of greatest pleasure in play is to put together blocks, cartons, pipe cleaners or other materials to form new constructions. He explores the world visually and manually—takes it apart, combines and recombines it, relishing the new arrangements he can make. In contrast he is less interested in the auditory aspects of his world, does not develop an exceptional vocabulary or enjoy word and sound play until he is much older. If he has accompanying memory difficulties, he takes longer to master such details of common information as his birth date, telephone number, and address, the ages of his siblings, the sequence of days of the week and months of the year than the average child.

The school-age child is confronted by three major tasks. These are mastery of the specific skills of reading, writing, and arithmetic computation, and adaptation to the physical and social environment of school, home and neighborhood. Characteristic difficulties are faced by the perceptually handicapped child in all of these areas but because of the limitations in time only the school

problem will be considered.

The child enters a remedial program with certain pressing problems of immediate concern brought about by his failure to learn under the usual elementary school program. Stemming from his academic and adaptive failures are strong feelings of discouragement, lack of selfworth, conviction of his own stupidity, resentment of others successes and defensiveness about his own shortcomings.

Where do we begin his teaching and what priority do we assign to various aspects of the remedial effort? An approach to the problem is made along four lines.

1. Control of attention and misdirected activity through a structured environment.

Since all children regardless of test pattern show some difficulty in maintaining attention and concentration and being easily vulnerable to a variety of stimulations, our first effort is to create a learning and working environment in which possibilities for distraction are minimized. We therefore eliminate as much as possible of the social, visual, and auditory stimulations of the usual classroom. In practice this means that few children occupy a classroom, they sit well apart from each other, and participate in only a few, carefully selected group activities. The child who is visually distracted may sit away from the others, with his desk facing the wall, so that he may turn his back on the visual stimulations of the classroom. He may work in a sheltered corner formed by bookcases or a screen or, if the space is available, in a small study or therapy room. Teachers report that a child's work output will often be doubled when he is off by himself in this way.

The problems in poor social inhibition, confusion about expectations, requirements, and assignments; that is, a general lack of organization and orderliness are also planned for. The teacher sets up clear-cut rules and procedures in an environment of definite structure and orderliness. Procedures are established for routine activities such as sharpening pencils, going to the washroom, taking drawing paper, morning arrival and afternoon departure, lining up, telling news and so on. Also to promote organization and to encourage planning and looking ahead special activities are scheduled. The younger children tell news items on Monday and bring things to show on Friday, and art class is held on Wednesday afternoons and music on Thursday. Changes are discussed with the children a short time before the planned activity to give time to adapt to the new schedule.

2. Building competence through adjusted tasks and presentation.

Still planning for the general problems presented by nearly all perceptually handicapped children, we examine the kind of tasks he is given. Obviously these must first be on the child's level in respect to ability and interest. They must also be short enough so that he can complete them before his short interest and

concentration span is exhausted. However, he may have many varied lessons during the day. Spaced practice is superior for the child than practice which is massed in one long session. In addition, the task should be clearcut, definite, easily evaluated in objective terms and self-correcting, if possible.

The particular problems of the perceptually handicapped child also require attention to the presentation of the material to be learned. It is best to present one new skill to be learned at a time—the sound of a letter in phonics, a letter in writing, a process in arithmetic—followed with sufficient practice to attain a reasonable criterion of mastery. After one or several more new units are mastered they can then be combined with the old and related to it.

While the child often grasps a new idea readily when it is initially presented he seems to need more time to bring it to a level of mastery which will withstand the addition of new material. The generality of the child's learning should always be checked by requiring application in a variety of different ways, in many situations. Continuing review should be planned for. The usual school practice of teaching a given skill for a month, then moving on to another, assuming that the first will be retained is generally not sufficient for the perceptually handicapped child. Even after a skill has been taught and a new one begun, continuing regular practice on the first should be provided, tapering off only when reliable recall is attained.

3. Improvement of deficit functions.

The third major consideration is planning for improvement of his deficiencies. Here the program becomes more specific according to the pattern of weakness or deficit of the individual child. For the child with a poor performance quotient on the Wechsler or other evidence on low sub-test scores of visual perceptual impairment a variety of visuo-motor activities are incorporated into his daily program, being considered as much a part of his school assignments as reading and arithmetic. These activities include picture puzzles, construction of designs with pegs, different shaped blocks or tiles, and other similarly adapted commercial materials. Exercises at the chalk board or with pencil and paper are also used to develop visual perceptual abilities and to lay the foundation for integrated progress in various learning skills.

Even perceptually handicapped children with visual perceptual problems who have already acquired some scholastic skills benefit from activities of this type on suitably advanced levels, of course. Because of their very complexity, partial mastery of the academic skills may be attained based on the use of one of the mental abilities needed but neglecting the others. It is only later after school demands progress beyond elementary skills that such part mastery breaks down. Examples are the child who reads visually (by sight) but uses no phonics, or the one who

memorizes arithmetic combinations but has no visual scheme.

The child with the reverse pattern of low verbal, high performance quotient requires a different type of program. For him the visual perceptual activities will be recreational rather than therapeutic. He is in need of lessons that require listening on various levels to improve the deficit he demonstrates in the auditory modality.

Improvement in integrated motor behavior can be achieved through definitely planned activities at recess and gym periods. This is an area that lends itself extremely well to out-of-school practice with a parent or in a recreational program.

4. Mastering scholastic skills.

The critical need for the elementary school child is mastery of reading, writing, spelling, and arithmetic computational skills which rest upon the perceptual bases described earlier. It is our observation that the major learning demands of the first two and a half or three grades of the primary school are perceptual, integrative, and mnemonic rather than conceptual. At this level of the child's development and school experience, his motivational patterns are usually good and his conceptual development (if he is a minimally handicapped child) is sufficient to deal with the concepts found in the typical primary textbooks. It is in perceiving accurately, integrating his percepts and storing them for future use that he falters. To be effective, the educational program must be designed to take account of these deficits in relation to specific learning tasks and to help him to reduce them or compensate for them.

How does this aspect of the educational program work in practice?

Learning any of the scholastic skills requires that a certain minimum level of perceptual organization, concepts and memory has been attained. Since the child typically develops unevenly with considerable disparity between various mental abilities some faculties which are important for a skill such as reading may develop well in advance of others. Thus a child may be well qualified from the standpoint of vocabulary, concepts and memory to progress in reading but poorly qualified in terms of the visual perceptual skills required. For such a child it is possible to prepare the learning situation in such a way that his poor visual perceptual skills do not block his progress unduly or result in confusions. For him the teacher would reduce the perceptual problems by heightening the stimulus value of the visual perceptual elements of the reading task. She might use color to differentiate parts of letters or words or emphasize them with heavy black outlines or remove portions of the material from their surroundings as in the study of words isolated from the book. She would also structure the visual space involved in the task by blocking some of it off with a mask or separating parts of it with colored or

dark lines as on a workbook page. She would present a small enough amount at a time so that the child would not become confused by what could be for him a vast quantity of material. This type of structuring of visual space and emphasizing certain aspects of the visual stimulus may prove to be necessary in any academic area not only reading. Using color to structure space can be used for the child who can form letters but cannot keep them on the line, for the child who can multiply but who becomes confused as to where to put the products, for the child who can write but cannot organize his work acceptably on a page, and so on.

For the child with auditory perceptual weaknesses the teacher would also strengthen the stimulus to make it more readily perceptible. She would speak more slowly, in shorter sentences and articulate carefully. She would be certain to have the child's full attention. She would be careful to check word meanings. The teaching of phonics would be preceded by much practice in auditory discrimination of sounds and analysis of the word parts to develop the minimum level of perceptual discrimination required for this aspect of reading.

In teaching any child with an impairment in one perceptual field the input must be supplemented through use of a more intact field. For the visually perceptually impaired child, verbally describing the visual percept or tracing it kinesthetically with the finger or eyes will hold attention on its important features and will improve the visual definition or articulation of the percept. For the child with auditory perceptual problems input supplementation can be achieved through visual and kinesthetic support. The teacher writes the word for the child to see, diagrams verbal concepts or relates words to visual and concrete models.

A good part of the task of leading the child toward independence of effort is to make him aware of how such supplementation can be helpful so that he can take over for himself. The child with visual perceptual difficulties can be taught to talk to himself about a task which has many visual perceptual demands; the child with auditory perceptual weaknesses can be taught to request spelling or to try to make the material visual. These children can and need to develop their own compensatory ways of studying if they are going to progress into higher grades on their own power.

As a result of our experience we have come to feel that the several academic skills make critical demands on certain mental abilities and less distinct demands on others. In reading, for example, the visual perceptual skills required on the primary levels are not of a very high order of complexity. Reading does, however, impose great demands on the auditory perceptual and auditory sequencing mechanisms as well as the ability to integrate the auditory patterns with visual ones. The child with auditory difficulties may compensate through use of his good visual per-

ceptual abilities for a short time but before long partial mastery of the reading skill becomes evident in his failure to be able to sound out unfamiliar words. In learning arithmetic computation the prime requirement seems to be to establish a good visual percept of number groups in relation to another and then to be able to visualize them. The child with good verbal skills and good rote recall will seem to learn the combinations but partial mastery again becomes apparent when they must be used in new and different relationships which have not been drilled as "number facts". This child then cannot visualize the number combinations in relation to other number groups because they were never originally perceived as related quantities.

It seems to us therefore important that the teacher be very familiar with the mental abilities required for mastery of various skills in order to be able to lead the child to employ those abilities rather than permitting him to use substitute ways which will be limiting later on. This may mean that materials or tasks will be designed in such a way that the child is "forced" by the material to take the route required to mastery of the skill and that the teacher must be ever vigilant and critical of the processes the child uses. Reliance on graded achievement tests is misleading as the grade level score says nothing about the process used by the child in attaining it. For the classroom teacher there is no test to substitute for day by day observation and checking not of the end results of the child's practice but of the *manner* in which he obtains his results.

What of the feelings of inadequacy, discouragement and poor self concept? Very often as the child sees himself progressing and becoming more like others in school learning at least, he sees himself in a more favorable light. Often substantial personality gains may be made by attacking the learning problems first. The residual problems which still remain may then require the attention of a psychiatrist, or other child mental health worker.

For many a perceptually handicapped child the wall he must scale to be able to enjoy the reaches of knowledge beyond it is a very high one. Bit by bit and inch by inch it can be done, but the work is often arduous and long. An early start in the primary grades is the best insurance that it will be done.

1. Hallgren, B.: *Specific Dyslexia: A Clinical and Genetic Study*, Acta Psychiat. Scand., Suppl. 65, 1950.
2. Hermann, K.: *Reading Disability*, Springfield, Ill., C. C. Thomas, 1959.
3. Pasamanick, B., Rogers, M., and Lilienfeld, A., Pregnancy Experience and the Development of Behavior Disorders in Children, *Am. J. Psychiat.*, Feb., 1959, 112:8:613-618.
4. Strauss, A. A. and Lehtinen, L. E., *Psychopathology and Education of the Brain-Injured Child*, New York: Grune & Stratton, 1947.

AN EXPERIMENTAL PROGRAM IN ACTION

by Jean Lukens, M.S.

The Perceptual Development Pilot Program is a public school program for children presenting educational problems in regular grades in elementary schools. The psychological and educational characteristics discussed by Dr. Clements and Dr. Lehtinen are present in the population of children for which this school program was planned. Since research has provided a body of knowledge including information on diagnosis, education, and counseling, the problem in initiating a pilot study becomes one of determining if the research and practice can be applied in the local public school setting. The framework of the public school is different, although the same principles of education apply. The purpose of this paper is to describe the process of planning and implementation of such a program with eight classrooms in four local districts in Oakland County, Michigan.

Some facts about the county in which the program is located and some of the school structure, which makes it possible, are pertinent. Oakland County is the second largest county in Michigan. It is located adjacent to Wayne County and Detroit. It is a county of 900 square miles and has a population of three-quarters of a million people. Much of the population is urban and suburban with a few rural areas. It is an industrial and agricultural population. The school population is approximately 190,000. School districts range in size from several hundred to several thousand students. All 29 districts are consolidated districts.

For many years local school districts have been reimbursed by the state for special education programs. In 1954 a millage tax was passed, the revenues from which pay the remainder of costs to local school districts for all special education programs. In addition to per capita reimbursement from state funds, the Oakland Schools Office, as an intermediate school district, provides additional reimbursement as well as consultative and leadership services to the local district. This means that local schools are reimbursed 100 per cent for the cost of special education programs. In addition reimbursement is made from county funds to local schools for capital outlay, such as classroom construction and equipment. Since 1955 special education services have expanded. In 1954 there were 56 teachers employed in all special education programs, in 1963 there are 357 teachers. This special education program is administered through the Oakland Schools Office and enables the county to do co-operative planning with local schools.

A county director of special education and consultants help local districts plan, implement, and improve programs. Total county planning and inter-district placements are accomplished through county co-ordination of the total education program.

The Superintendent's Committee on Special Education, the Citizens Advisory Committee, and others keep advised of need for service and make requests to the Oakland Schools Office.

In Oakland County, then, there is a legal and philosophical basis which makes it possible for new programs to be planned and put into operation. This basis reflects the public's opinion that equitable special education planning should be accomplished on a county-wide basis.

The Oakland County Special Education staff had been interested in services for brain-injured children for some time. The problem was discussed often. When a request was made by a local district to provide education for a group of children, who were under-achievers, normal in intelligence, diagnosed as having a neurological deficit, and problems in adjustment, it was decided to consider implementing a program as soon as possible.

A committee of professional people studied the problem. The committee visited facilities of all kinds—private schools, public schools, clinics, hospitals, universities, and professionals in private practice. They interviewed psychologists, neurologists, psychiatrists, pediatricians, teachers, and college professors. The members also attended meetings and reviewed the literature. From discussions a framework for a school program was formulated.

Dr. Laura E. Lehtinen and Miss Charlotte Larson of the Joliet (Illinois) public schools acted as consultants during initial planning and implementation. Dr. William Cruickshank acted as evaluator to the program at the close of the second year. Needless to say, the valued opinions of these and other resource people as well as the research of Dr. Alfred A. Strauss were responsible for many of the characteristics of the program. It was not the objective in planning a pilot program to institute new procedures but to apply techniques and procedures which had been successfully used and to apply them in local school programs.

As a consequence of this planning the Perceptual Development Pilot Program was opened in the fall of 1961 with four classrooms in two local school districts. Thirty-one children were served the first year. In 1963 four more classrooms were opened in two other local school districts. Seven of these classrooms are operating in the four school districts at present. Eighty-eight children have been entered with a present enrollment of 56. Some have returned to regular classes after a short time in the program or after two years. Some children have remained in light of their progress. A check of the progress of the students who have returned to regular grades is being made. Reports in most instances indicate successful integration back into regular grades.

Discussion of ten important aspects of the program follows:

1. *Eligibility Criteria.* Children were eligible if they had the following characteristics:

Chronological ages from six to 10 years

Under-achievement
Potential of normal intelligence
Primary perceptual handicap

Many children referred were in the 11 to 13 chronological age range, but the 10-year age maximum is adhered to and is believed to be essentially the right age group.

2. *Diagnosis.* It became the responsibility of psychologists to determine the deficit through psychological evaluation and to determine etiology as far as possible. Reports from clinics, psychiatrists, neurologists, pediatricians, as well as health, developmental, and medical histories were used as substantiating information.

It has proven very helpful to have an educational diagnosis, speech and language evaluation, and the results of psychologists classroom observations with some evaluations and suggestions as substantiating evidence in declaring a child as eligible.

3. *Referral.* Information from school records, family information, health and medical records as well as statements from referring teachers as to classroom performance and reason for referral is essential to making an adequate study of each child.

Orientation of all school personnel as to goals, purpose, and description of the program and children eligible is essential to receiving good referral information. Informed and interested teachers make good referrals.

4. *Screening.* The process of declaring a child eligible and recommending placement is the responsibility of a multi-disciplinary committee. The responsibility includes also educational planning and evaluation. The committee is composed of individuals each of whom has information to contribute from personal knowledge of the child or the administrative structure of the program. This committee is convened when necessary for performance of its duties.

5. *Placement.* Children are placed in each room one at a time. Sufficient time is allowed between placement to enable each child to establish an individual routine and to determine his level of functioning. In addition the nature of the group is considered.

6. *Class Size.* A minimum of eight and a maximum of ten students were decided upon. The first year all classes were kept to eight. The second year after some group instruction could be planned, especially with the nine and ten-year-olds, ten children were enrolled in some classes. The classes were divided, so that one class was for younger children and one for older children within the 6-10 chronological age range of the program. Grouping of children in a class is a very

important aspect and is decided upon by the Screening Committee. Not infrequently, it is necessary to make changes and flexibility in this regard is deemed essential.

7. *Physical Facility.* Classes are located in regular elementary buildings in areas of least traffic and noise. As many distractions as possible have been removed, closed cupboards for teaching material are used, muted colors in the decor, and screens for teaching and study areas are available as needed.
8. *Curriculum.* Areas of curriculum have been limited to the language arts (reading, writing, spelling, and written and oral language), arithmetic, and perceptual development materials. Special disabilities suggested by recent testing and observation have led to more emphasis on speech and language and physical training. Small steps in learning, developing insight into each step of learning, and developing techniques to teach the child because of his characteristics of learning have all been utilized.
The addition of a teacher's aide has improved teaching materials in quality and quantity since so many materials are not available commercially, but can be planned by the teacher and constructed by the aide.
9. *Responsibility.* Since the Perceptual Development Pilot Program is not a regularly recognized state program as yet, the local school district and Oakland County Schools Office have for the time being assumed joint financial responsibility.
10. *Designation of Program.* Since programs must have some category, the Perceptual Development Pilot Program has been designated under the phase "experimental program for the brain-damaged child" within the state program for emotionally disturbed. However, it is the opinion of personnel working in the program that it should be defined as a program for physically handicapped children, and it is hoped that eventual state funds will be designated as such.

Although there are many other factors of importance in implementing the program, only a few of them can be discussed.

Personnel. Selection of teachers is of primary importance. Master teachers of primary grades were selected. They were skilled in teaching beginning skills and working in a one-to-one relationship as well as in groups. The ability to accept differences in people—both children and adults—was another criterion for selection and the county office assumed responsibility of helping teachers to gain insight into the problems of children with deficiencies in learning and differences in behavior. Workshops, observations in the clinic, training sessions with resource people and help in understanding testing, organization in the classroom, evaluation and construction of materials, and many discussions gave the

teacher skill and confidence. In short, an intensive in-service training program was conducted. The County Co-ordinator, who is responsible for teacher training, was given periods of time to observe, study, and discuss problems with such people as Dr. Lehtinen and Miss Larson. In-service seminars were and are held one Thursday afternoon each month. The attitudes developed from the team of teachers in the pilot study has been one of co-operation and creativity which has resulted in the development of excellent curriculum and teaching techniques.

All working personnel have met for orientation regarding goals and procedures. Directors, psychologists, and school principals met for the original orientation meeting and are directly responsible for success in their districts. Professional growth of personnel has been noted in the screening committees in their different roles of determining eligibility and placement, educational planning, and evaluation.

Parents. Close co-operation with parents is essential to success. Conferences are held periodically. Small and large group meetings have been helpful in giving information and in developing understanding of the child and his handicap.

Public Relations. Acquainting school faculties and the community with goals and scope is particularly important with a new and different program. Those administering such a program will be under pressure to include some children not eligible. Programs when starting are never sufficient to meet the need. Definite rules and regulations for procedures need to be set to meet this stress.

Some generalizations about the program follows. It cannot be said that they are proven statistically and many of them could be considered in the category of opinion. However, these opinions are based on the outcome of procedures and may be helpful to others.

1. A program for brain-injured children can be successful in a public school setting. It cannot serve all children, but it can a select population, which should be well defined.
2. A multi-disciplinary team approach to diagnosis, educational planning, and continual evaluation is essential.
3. Counseling of children and parents is essential. Teachers need help in this area.
4. Children whose primary problem is perceptual deficit due to cerebral dysfunction can be distinguished from children whose primary problem is emotional disturbance. While some aspects of programming for them are the same, the educational and counseling approach is different and they should be in different programs.
5. Programs in special education must be defined in the proper legal category and understood by school administrators to be successful.

6. Selection of personnel is very important. Developing a set of criteria for selection is an excellent way to begin some understanding of the program needs.
7. Educable mentally handicapped children with perceptual deficits respond well to structured programs for perceptual development. One group of six mentally handicapped children has been receiving the same kind of instruction as the children in the pilot program for the past five months with success.
8. Children with perceptual problems learn in a structured situation with many chances for success if the instruction is planned to meet their needs.
9. Co-operative evaluation and plans for speech and language development with speech correctionists in terms of their orientation to the problem has resulted in better service for children.

FUTURE NEEDS AND PLANS

1. There is a need to have the program defined as one for physically handicapped children under the state plan for special education, with requirements for teachers' certification and approval stipulated.
2. There is a need for universities to set-up teacher training course sequences in teaching children with cerebral dysfunction.
3. Requests for 13 classrooms have been officially made and committed in Oakland County. This is indicative of need in Oakland County as well as in many parts of the country.
4. An itinerant person is needed to supplement classroom services to children with minimal handicap and to facilitate return to regular classroom after special class placement.
5. There is need for resources to develop skills needed by teachers and to provide auxiliary services for parent counseling.
6. It is the hope of all professional people in the field that there will be a continued interest in new research to furnish new understandings, techniques, materials, and also interest in the children who need them and profit by a program for perceptual development.

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Minimal Brain Dysfunctions in the School-Age Child

Diagnosis and Treatment

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For many years it has been the custom among child guidance workers to attribute the behavioral and learning deviations seen in children almost exclusively to the rearing patterns and interpersonal relationships experienced by such youngsters. We, as well as an increasing number of clinical child workers, feel that when evaluating a disturbed child, we must search as carefully among the myriad possibilities of organic causation as we have in the past among the interpersonal, deprivation, and stress factors; *and certainly without sacrificing the important knowledge which has accumulated in the latter areas.* In many clinics, it has become habitual to assume psychogenicity when no easily recognizable organic deviation can be found in the child. Undoubtedly this has been due, in part, to the difficulty

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in delineating the contribution to symptomatology and personality structure of subtle organic and central nervous system deviations, and to the relatively greater accessibility of environmental data. Although lip service is often given to "constitutional factors," temperament, heredity, and "possible organicity," the overwhelming tendency has been to weave a complete causative fabric out of the fragile threads of stereotypes such as sibling rivalry, rejecting parents, repressed hostility, oedipal conflict, repressed sexuality, etc., much of which may well be secondary and epiphenomenal rather than primary. It is our contention that an honest blank should be reserved in our thinking for the inclusion of as-yet-unnamed subtle deviations arising from genetic factors, perinatal brain insults, and illnesses and injuries sustained during the years critical for the development and maturation of those parts of the nervous system having to do with perception, language, inhibition of impulses, and motor control. Granted the equal and often

greater importance of experiential factors, we should not automatically fill the explanatory void with harsh fathers and over-protective mothers and give but cursory consideration to the organism which is reacting to such parents.

In the case of a disturbed child, as one peers in sequence at the presenting symptoms, the precipitating events, the interpersonal experiences, the intellectual and temperamental endowment, the central nervous system deviation and maturational factors, and finally at the brain damage factors, it is like looking through a series of partially transparent curtains of different designs and at different distances from the eye. With experience one gains the feeling that he can focus on each in turn and to some degree evaluate the contribution of each. This approach, however, is not sufficient in view of the additional evaluation methods which are available, but which are not being utilized. It is hoped that future research will make it possible to define and to measure each of the above factors and to relegate to each its proper valence in the determination of a child's behavior.

This article is concerned primarily with a diagnostic evaluation plan for children coming to child guidance and child psychiatric clinics. In addition, treatment and management as practiced in our clinic will be discussed. There have been a number of excellent articles dealing with the core symptom picture with which we are concerned,^{5,8,9,17,25-27,36,41} but few have outlined a diagnostic procedure which includes as part of a *routine* work-up, many of the criteria, tests, and maneuvers which will detect the borderline and equivocal cases of organicity and central nervous system deviation. This symptom picture has been variously referred to as brain-damage behavior syndrome, hyperkinetic syndrome, organic brain syndrome, hyperkinetic-impulse disorder, Strauss syndrome, postencephalic behavior disorder, and others. This syndrome is also our primary point of reference, but we feel that there are many variations within this symptom complex in

which some of the less conspicuous symptoms are the only ones present and which go undetected unless a meticulous diagnostic procedure is carried out. Clear-cut hyperactivity is easily recognized, but solitary dyslexia or dyscalculia may be thought of as a thing apart, and usually blamed on an illusive "learning" or "emotional block."

We have come to rely on the patterns of subtest scores achieved by the child on the Wechsler Intelligence Scale for Children (WISC), and on the "equivocal" neurological signs,²³ as well as on the more easily recognized clinical signs of hyperactivity, short attention span, etc. We feel that the varied and particular tasks undertaken in such a psychological test instrument as the WISC can tell us so much more than a mere over-all I.Q., and should be respected equally with neurological, clinical, and EEG findings. Many physicians have not been so inclined, and many psychologists have not recognized the diagnostic power of the tools they use every day. We feel great errors are being made in the easy acceptance by psychologists, as well as psychiatrists, pediatricians, and social workers of an over-all I.Q. score which so often misrepresents the child's potential. Many children have been readily classified as mentally retarded or merely average on the basis of the composite WISC I.Q., when either the verbal or performance scores or some isolated subtest scores have been far above this. Our final diagnosis of a brain dysfunction may rest upon either the more obvious symptoms or upon the accumulative weight of several more delicate indicators. Our work is founded upon clinical research and experience and is not yet based on carefully controlled experimentation. At this point in the relative ignorance and knowledge of all of us about the functioning of the brain, there need be no apology for our diagnostic criteria as we and others have developed them. The habitual psychogeneticist, relying on the more easily acquired environmental and interpersonal material, operates *ad libitum* with his speculations. Our diag-

nostic efforts are directed toward a balanced consideration of all contributing factors.

It is our viewpoint that most childhood psychoses and aphasoid conditions as well as the variant epilepsies are based upon brain deviations. There is considerable overlapping of symptomatology between the organic behavior and learning syndrome group and the various childhood psychoses. The goal of our diagnostic procedure, using the tools that are available, is to call attention to any central nervous system deviation present and to emphasize the contribution of that deviation to the adjustment problems of the child. There are already many works dealing with the more specialized diagnosis of these children and literally countless works on the intrapsychic and interpersonal aspects of disturbed children.

For the purposes of this paper, the following terms will be used more or less interchangeably depending upon the context: minimal brain dysfunction, organic learning and behavior disorders, minimal brain damage, organic deviation, and central nervous system deviation. Where the word damage is not included, we are allowing for the possibility of deviation on a genetic basis or on the basis of a central nervous system maturational lag.

Symptoms

Typical comments made by teachers and parents about a number of these children are:

1. He seems bright; he is quiet and obedient, but daydreams and can't read.
2. He is high-strung and nervous; his attention is hard to hold.
3. He has frequent temper outbursts, sometimes for no apparent reason.
4. He won't concentrate for more than a few minutes at a time; he jumps from one thing to another, and minds everyone's business but his own.
5. He lacks self-control; he cannot work with other children; he picks on them constantly; he is very disturbing in the classroom and worse on the playground.
6. He does not work to capacity; he is not learning to read or work with numbers, but has a good vocabulary and uses words correctly.

7. He thinks, speaks, and moves so slowly and is a very poor reader; in many ways he seems very intelligent.

Although these remarks represent frequent complaints, the particular behavior which culminated in a referral to the clinic may range from school failure or discipline problem to stealing or other antisocial activity.

Following is a list of the outstanding findings associated with the brain damage behavior syndrome and the broader concept of minimal brain dysfunction, in which only a few symptoms may appear in a particular child.

1. *Specific Learning Deficits.*—Child cannot read at grade or age level; a mildly stressful situation may bring out typical dyslexic errors; spelling poor; difficulty with arithmetic; difficulty with abstractions and whole-part relationships; difficulty in mastering tasks which are dependent on good visual-motor coordination.

2. *Perceptual-Motor Deficits.*—Printing, writing, and drawing poor; poor and erratic performance when copying geometric figures (Bender Visual Motor Gestalt); often the child attempts to compensate for the latter by task-perseverance and/or innumerable and meticulous tiny strokes of the pencil; often has difficulty in reproducing geometric designs with blocks; difficulty with figure-ground and/or whole-part discrimination. (We have wondered if interpersonal communications and the interpretations thereof, might depend on this kind of process at its most abstract level.)

3. *General Coordination Deficits.*—Child often described as awkward or clumsy; this may appear in either fine muscle performance or in over-all coordination, or both.

4. *Hyperkinesis.*—Child appears to be in constant motion, flitting from one object or activity to another, or may be merely restless and fidgety; we have considered that the child's "drivenness" may manifest also as voluble, uninhibited speech, or as disorganized thinking, even in the absence of outward hyperkinesis. Some of the children with learning and behavior symptoms

and one or more "equivocal" neurological signs do not show hyperkinesis. Such children, because they do not show the typical hyperactivity, are often placed in a purely psychogenic category and treated accordingly.

5. *Impulsivity*.—The child cannot keep from touching and handling objects, particularly in a strange or overstimulating environment; he may speak without checking himself and even say insulting things; his impulsivity easily leads him into conflict with the demands of conformity as established by family, school, and society. Some of these children may commit striking antisocial acts, even to the point of fire-setting, stealing, and murdering with only a modicum of provocation.

6. *Emotional Lability*.—The child may be "highstrung," irritable, aggressive, or easily moved to tears; he may have quick changes from high temper to easy manageability and remorse; he may be panicked by what would appear to others as a minimally stressful situation; however, some of these children are sweet-tempered, even in the presence of a frustrating inability to read—in such cases, the underlying temperament and benign environmental influences may have made the difference.

7. *Short Attention Span and/or Distractibility*.—Child unable to concentrate on one thing for very long; he especially loses interest when abstract material is being considered; even with this symptom, some of these children show a tendency to become locked in a simple repetitious motor activity or preoccupation with one verbal topic. Some children show good attention span when their interest is aroused, but when not so engaged display marked distractibility to casual stimuli.

8. *"Equivocal" Neurological Signs*.—Among the most frequently seen of such signs are: transient strabismus; dysdiadochokinesia; poor coordination of fingers; mixed and confused laterality (the former refers to the use of hand, foot, or eye, and the latter to ability to distinguish right from left); speech defect (or history of slow

speech development or defect); general awkwardness. These and other neurological signs will be discussed in detail later.

9. *Borderline Abnormal or Abnormal EEG*.—In spite of the lack of agreement in this field, the high frequency of borderline records reported is felt to be significant. This is an important area for research.^{13,17,19,22,23,25,34} The 6-and-14-per-second positive spiking pattern has clearly been found to be associated with outbursts of violent behavior.³⁴

It is important to reemphasize that a given child may not have symptoms in all or even many of these areas; each child has his own particular cluster of symptoms. The level of his intelligence and the nature of his underlying temperament determine the form and the excellence of his maneuvers to compensate for the deficits or deviations.

It is probable that certain general principles underlie the above symptoms. For example, most may be due to perceptual defects having to do with the capacity to receive, hold, scan, and selectively screen out stimuli in a sequential order; to sustain a repertoire of background gestalten as compared with foreground gestalten; to perceive the subtle and often abstract behavior gestalten which allow proper socialization to take place. Proprioception may be one of the perceptual areas at fault in some of these children, i.e., manifesting as a deficiency in the ability to perceive, discriminate between, and retain images of sequential body movements in space. It may be that there is a deficiency in inhibitory functions having to do with checking and suspending verbal or motor activity until the incoming sensory data are compared with stored information. When the fantastic complexity of the brain is considered, with its myriad interlocking circuits and groupings of circuits, it is not surprising that in the presence of any disordering of stimuli-monitoring, that each child should manifest a unique cluster of symptoms, and that he should be handicapped in learning and in adaptive behavior if the environment

is sufficiently trying relative to the magnitude of his defect.

Diagnostic Procedures

A. Physical Examination and History.—Let us assume that the child has been given a conventional physical examination and that gross conditions such as cerebral palsy, frank mental retardation, eye and ear defects, etc., have been detected or ruled out. A careful gestation and developmental history must be taken, and should include virus illnesses during pregnancy, bleeding, premature contractions, rupture of membranes, birth weight, etc. The childhood diseases and other illnesses should be located as to age. The usual interviews with parents and child must be obtained to determine specific interpersonal dynamics, particular emotional stresses and traumata, etc. In addition, behavioral and academic observations by the child's teacher and principal are especially valuable in the over-all assessment.

B. Psychological Evaluation.—The minimal psychological test battery for any child being evaluated in the child guidance clinic is the complete Wechsler Intelligence Scale for Children, the Bender Visual Motor Gestalt, and a standardized reading test such as Gray's or Gates'. Personality assessment is not considered as a separate and distinct entity, since clues and indicators are constantly being produced by the child, and hence are apt to occur at any time during the work-up. We have not routinely used the *standardized* projective techniques. We feel that in most cases straight-forward interviewing and observing during all contacts with the child yields adequate information. A small number of appropriate picture cards, preferably from the Michigan Picture Test,²⁹ could be used for routine evaluations. We have depended most heavily on the 3 psychological instruments mentioned above. The final test battery must await further research and applications from the field of perception.^{24,27}

Of great concern to the authors is the prevalent use of relatively unrelated tests and techniques to assess intelligence. Items such as drawings of persons or objects, Rorschach and other projective techniques, or 20-minute interviews are inadequate, even as screening devices, in approximating the intellectual functioning level of children, and in particular, the child with a minimal brain dysfunction.

The complete Wechsler Intelligence Scale for Children (WISC),³⁰ consisting of a minimum of 5 verbal subtests and 5 performance subtests, should be administered routinely. There is no combination of 3 or 4 WISC subtests which can substitute for the entire scale, since specific deficiencies may go undetected by the omissions. The value of the complete WISC cannot be overstated.

Often other investigators have searched in vain for a single subtest pattern within the WISC which would be diagnostic for brain damage.^{3,30} Thus far, we have isolated 3 principal patterns. The most common pattern is *scatter* in either or both the Verbal and Performance Scales (WISC Pattern I). Low scores (relative to the others) most frequently occur in Arithmetic and Digit Span in the Verbal Scale, and Block Design, Object Assembly, Coding, and Mazes in the Performance Scale. Frequently with WISC Pattern I, the final Verbal and Performance I.Q. scores turn out nearly equal and the internal variation in subtest scores is ignored by the individual interpreting the results. It is not uncommon in our population of children to find a scale score difference of 5 to 10 points, say between Comprehension and Arithmetic on the Verbal Scale, in favor of Comprehension; or say between Picture Completion and Block Design on the Performance Scale, in favor of Picture Completion. The claim is often made that anxiety will lower certain subtest scores. It is then noteworthy that anxiety can be so selective, and suggests that that particular perceptual system is fragile in such cases. To reduce the achievement variation due to anxiety, we make every effort to place the child at ease and to obtain his confidence both before and during the examination. Subtest presentation order, fatigue, test-motivation, distractibility, and other variables which could affect test performance have all been taken into consideration in our evaluations, with no change in ability on the part of children with minimal brain dysfunctions.

The second most frequent WISC pattern (WISC Pattern II) is that in which the Verbal I.Q. is 15 to 40 points higher than the Performance I.Q. If the Arithmetic subtest score is excluded, the difference is more pronounced (arithmetic being another type of symbol process). In this instance, the child's achievement on the other Verbal tasks is sufficiently high that such a drop in Arithmetic is obscured or compensated for in the total Verbal I.Q. score. On the other hand, the child experiences difficulty with most of the Performance Scale items, but particularly, the pure visual-motor perceptual tasks, which include Block Design, Object Assembly, Coding, and Mazes. He has less difficulty with Picture Arrangement and Picture Completion. The end-result, however, is that the Performance I.Q. often falls into the mentally deficient range while the Verbal I.Q. is in the normal range or above. In such cases, the Full Scale I.Q. score (the one usually quoted) is virtually meaningless as an indication of over-all intelligence, since it is a composite of these 2 extremely variant dimensions of intellectual functioning. Many of these children are placed with the frankly mentally retarded in the usual hodge-

podge special education class or are automatically passed along with their age group, frustrated in their efforts to keep up with the class.

The third and least frequent pattern (WISC Pattern III) is the reverse of WISC Pattern II, i.e., the Performance I.Q. is 10 to 30 points higher than the Verbal I.Q. Such a child has difficulty in expressing himself verbally. He must actively search for the words necessary to express his usually concrete solution to a "thought" problem. On the other hand, he is quite proficient at the subtests which constitute the Performance Scale. In our experience, the child with WISC Pattern III invariably has dyslexia.³¹

The Bender Visual Motor Gestalt² is here used as it was intended, that is, as a measure of perception and visual-motor coordination. Others^{8,11,16,32} have noted the common errors made by children with brain damage. Such factors as spatial arrangement, perseveration, "dog-ears," rotations, curvature, closure, etc., are noted since discrepancies commonly occur in these areas. Also, the total test approach and performance must be taken into account. Some children learn (either self-taught or by others) to compensate for poor visual-motor coordination by using many short, light lines when copying designs. Since a change of direction (angles) in drawing is particularly difficult for such children, some learn to make a square by first drawing 4 spaced dots, then carefully connecting the dots with straight lines. The child who automatically volunteers the information that he "can't draw very well," when asked to copy geometric designs has usually been compared with peers and classmates and is keenly aware of his deficiencies. The over-all "organic" Bender Visual Motor Gestalt reproductions stand out strikingly when compared with the norms provided by Bender in her original monograph,² which can serve as a frame of reference in lieu of long clinical experience with the instrument. We have found that the failure to obtain a Bender-Gestalt has sometimes led to a wrong diagnosis and treatment plan. Some workers have elected to use it only in those cases where they already suspect brain damage. We believe that it, or an equivalent measure should never be omitted.

Gray's Oral Reading Paragraphs³⁴ are preferred as a measure of sight reading ability because of their simplicity of administration and content of the paragraphs. Although a formal scoring system is provided, it is not deemed necessary for our purposes. The child is asked to read aloud beginning with the paragraph 2 grade levels below his present grade placement. The time of the school year must be taken into account when determining reading level. Number and type of errors are noted in the child's reading as well as smoothness, speed, approach (phonetic, or not), and comprehension of the material.

If there develops any doubt about a child's reading under ideal testing conditions, it can be repeated under conditions of at least mild stress, e.g., while being tape recorded, with other persons present, by request for more speed, etc. Under such conditions, a child with a fragile integration of the complex processes involved in reading will very likely begin to show typical dyslexic errors and manifest the behavior which has handicapped him at school. Kanner and Eisenberg^{10,30} have provided a simple reading test for screening purposes.

Additional data which should be obtained include a sample of the child's writing, a free-hand drawing, and a spelling test. The words for the latter can be taken from the reading test.

C. Neurological Examination.—As usually performed, the conventional neurological examination is reported as "noncontributory" in the type of child under consideration. The physician has his mind set on clear, unequivocal signs and is not sensitive to the value of "equivocal" signs. Complex integrated behavior is rarely observed or specifically tested for by referring physicians or even in the usual child guidance clinic work-up. The physician often does not synthesize in his thinking the fact that these neurological signs, general behavior, and intellectual functioning are all manifestations of the nervous system. Somewhere between the specialties of medicine and psychology, this important synthesis gets lost or neglected.

Special Neurological Examination Postural Reflexes and Coordination

1. Extension of arms, eyes closed: Abnormal—wide divergence of arms; convergence of arms; wide difference in arm levels; choreiform movements; lordosis.

2. Passive rotation of head, eyes closed: Abnormal—wide divergence of arms; convergence till overlap; flexion of occipital arm; drop of chin arm; body rotates at shoulders or hips, or entire body "whirls" to delicate passive turning of head; extreme rigidity or resistance.

3. Coordination: Heel walk; toe walk; walk a line; hop on one foot; skip; stand on one foot; catch an object. Observe for gait (spastic, ataxic, awkward); tonus (plastic, hypertonic); synkinesia; overshooting; nonspecific awkwardness in movements.

4. Perceptual-motor tasks: Writing; picture drawing; Bender Visual Motor Gestalt. Note synkinesia.

Selected Items from "Routine" Neurological

5. Cranial Nerves: Test for nystagmus; pupillary reflex; equality of pupils; III, IV, and VI—look for slight, transient strabismus and difficulty of convergence (observe for inability to exclude

head movements while executing eye movements); VII, XII—position on extension, fasciculation, speech (describe any deviation in detail).

6. Deep tendon reflexes: Note symmetry.

7. Cutaneous reflexes: Abdominal; presence of Oppenheim; plantar—(a) dorsiflexion of great toe with plantar flexion of other toes, (b) dorsiflexion of great toe with fan reflex or fan reflex alone.

8. Other tests and manifestations: Rhomberg; dysidiadochokinesia (2 hands, then one—observe for synkinesia); finger-nose; fingers-thumb opposition; astereognosis; athetoid or choreiform movements.

Miscellaneous Tests and Observations

9. Reading test: Use a different form from that used in the psychological evaluation.

10. Right-left confusion (this knowledge normally established by age 7 or 8): (a) Place right hand on left ear, (b) insert diversional test here, e.g., finger agnosia, (c) place left hand on right knee.

11. Mixed laterality: Hand, foot, eye preference (use peep-hole card—note which eye winks more easily); ambidexterity (by observation and questions regarding writing, throwing, batting, combing, wiping, etc.).

12. Finger agnosia: Hands placed palms up (doctor touches various fingers and asks patient to name or indicate which one).

13. Unusual anatomical proportions, asymmetry, other stigmata.

Common "soft" neurological signs are: awkwardness, mixed laterality, confused laterality, strabismus, speech defect, short attention span, and hyperactivity.

The items included in the above special neurological examination have been drawn from the existing literature^{23,31,35,38,40} to serve as a screening procedure for all child guidance clinic cases. A complete neurological is desirable in many cases. These items do not constitute the final outline for such a neurological examination. Some items may prove less useful than others, and other workers may wish to add items to the list, e.g. the face-hand test of Morris B. Bender.^{3,31} Some of these entries have been performed by child psychiatrists when looking for a special condition, e.g. "whirling," or when brain damage is already suspected, but few psychiatrists carry out such procedures routinely. The examination cannot be given in a cursory fashion, but must be done

in a leisurely and painstaking manner. The number of children showing various of these signs is considerable, but they can be easily missed if the examiner hurriedly goes through his maneuvers expecting negatives.

The first 2 items have a long history going back to the work of Magnus, de Kleijn, and Sherrington on postural reflexes. The early work on postural reflexes in humans was done by Homberger, Schilder, and Hoff. The clinical sources used here were Silver³⁵ and Teicher.⁴⁰ The work of Lauretta Bender in this area is well known. Children under 6 years of age normally show some of these signs. With experience one learns to recognize the kind of performance appropriate for different ages.

The Bender-Gestalt test mentioned under perceptual-motor tasks is usually given by the psychologist in our clinic, but psychiatrists and neurologists should also familiarize themselves with it and especially should gain experience in its interpretation.

The items from the "routine" neurological were selected by Alfred Strauss³⁸ as being the ones most frequently abnormal in children with the less obvious kind of brain damage. Strauss* felt that the solitary appearance of a complete Babinski sign (with due regard for age) or paralysis of cranial nerves III, IV, VI, VII, or XII was of great value in diagnosing brain damage, and that the presence of 2 or more of the other signs were also "valuable." Kennard²³ in her study accepted the "equivocal" Babinski and other signs as having the value of true neurological manifestations on the basis of their reproducibility and their correlations with behavioral symptoms and EEG. The examination for nystagmus and extraocular incoordination must be given with extreme care, since the deviation is frequently fleeting and not obvious. It often happens that the eyes depart from parallelness only for a few degrees of the arcs for which they are being tested. We have noted that some children on formal testing show no heterophoria, but are observed to

* Ref. 38, p. 110.

do so momentarily while engaged in other activities. Any speech deviation at all should be noted and described, and questions relative to history of speech irregularities should be asked of the parents. The test for diadochokinesia should be tried several times and for more than the usual few seconds. Synkinesia should be carefully observed for in the opposite hand while the child is performing diadochokinesis with one hand or while performing the fingers-thumb test. Another example of "immature," associated movement is the relative inability to suppress head movements while performing eye movements.

Under miscellaneous tests and observations, most of the items have special reference to dyslexia. In this paper, the term dyslexia is used interchangeably with reading disability and reading retardation. The physician and the psychologist might well evaluate reading with different standardized tests so as to sample the child's reading under different circumstances. At least one of them should evaluate the test results in detail, noting types of errors such as reversals, reading letters or syllables out of sequence, fabricating a word out of minimal cues, difficulties with certain combinations of letters, and relatively greater difficulty with short words as compared to words with more distinctive characteristics. As mentioned previously, it is advisable to compare the child's reading under ideal circumstances with his reading under mildly stressful conditions. Eisenberg¹⁰ has written a valuable paper on the evaluation of reading disability.

The items on confused laterality (right-left disorientation), mixed laterality, and finger agnosia were drawn from the work of Hermann¹⁸ on reading disability in children and adults. Thus far, we have not been able to duplicate his findings with finger agnosia, nor was Rabinovitch³¹ able to do so. Hallgren¹⁵ and Hermann¹⁸ have convincing evidence that there is an hereditary form of dyslexia which they designate as "specific reading disability." This seems to be the same condition referred to by Rabinovitch as "primary reading retardation."

The studies of Hallgren and Hermann show that identical twins are concordant for dyslexia and that fraternal twins have no more concordance than nontwin siblings. Hermann as well as Rabinovitch called attention to the possibility that the pathologic locus of specific reading disability may be related to that of Gerstmann's syndrome.¹²

At this point, we are not in a position to say whether or how much their population of dyslexics (Hermann places the incidence at 10% of the general population in Denmark) is different from or overlapping with the kinds of cases we see. We have been able to find the constellation of dyslexia, right-left confusion, ambidexterity, mixed laterality, spelling difficulties, and speech defect in several parent-child pairs, but we have not sought this information routinely. We do find the above symptoms in many children who also have neurological signs and symptoms of organicity. Kawi and Pasamanick²¹ have shown a significant correlation between reading disability and the complications of pregnancy. Pasamanick³⁰ has postulated a "continuum of reproductive casualty," resulting in a gradation of endpoint manifestations extending from neonatal death through cerebral palsy and to behavior and learning deviations. At present, we can venture no opinion as to the etiology of the central nervous system deviation. There could be a number of causes. It could be that in the case of minimal brain damage, with even slight disorganization of symbol handling, the hereditary trait, or even a "normally" lesser talent (normal curve hypothesis for reading ability) would make inevitable the final symptom of dyslexia. Bender's maturational lag theory is also a plausible explanation. We take the position that *pure* psychogenic reading disability or "secondary reading retardation"³¹ is an unusual entity. We cannot accept alleged traumatic experiences, methods of teaching, or "emotional blocking" (because of symbolic meanings) as sole causes of reading disability. If the brain substrate essential for reading is intact and sufficiently mature,

a child adequately exposed to reading will learn to read normally just as he matures to the point of walking normally. Cunningham⁷ has reported an interesting incidence of an epidemic of reading problems due to forcing large numbers of children to undertake reading before they were sufficiently mature. We have no difficulty in accepting the proposition that mild brain deviation in combination with emotional factors, traumatic experiences, etc., can lead to various degrees of reading problems. The secondary emotional complications in this condition are well known to all and are extremely important.

Thus far, the neurological items most often found to be present in our child guidance population have been: irregularities in gross coordination, perceptual-motor difficulties, defect in fine coordination, strabismus, dysdiadochokinesia, reading difficulties, mixed laterality, some degree of ambidexterity, and the presence of or history of speech defect. Of the behavioral symptoms the most frequent are: short attention span, distractibility, hyperactivity, and impulsiveness.

Treatment and Management

We have found that a surprising and significant number of our minimal brain dysfunction (MBD) cases can be handled by a combination of drugs and infrequent counselling. The drugs we have found most helpful in reducing hyperactivity and irritability, and in increasing attention span are captodiamine hydrochloride (Suvren),²⁸ thioridazine hydrochloride (Mellaril), and the amphetamines. We have not made extensive use of phenothiazines other than thioridazine. Other clinics have reported favorably on several of them in the treatment of hyperkinesis in children. Captodiamine has been given in doses ranging from 200 mg. to 500 mg. daily, either in uniformly distributed doses or more heavily concentrated during that portion of the day when the child has the most difficulty. An average dose would be 100 mg. 3 times

daily. Some authors have noted a metallic taste which it sometimes gives to milk and water. We have not found this to be an important consideration except in about 2% of our captodiamine-treated cases. Taking the drug with meals reduces the likelihood of after-taste.

We have usually given thioridazine in doses of 25 mg. 3 to 4 times daily. Though our experience with this medication has been over a shorter period of time, we are entirely satisfied with its effects. In fact, we have not had as many children "escape" from the good effects of thioridazine as we have from captodiamine.

We have found that each child responds differently to the various drugs and various dosages. There is often the necessity of a period of experimentation with the different drugs and dosages to reach the best final prescription for a given child.

Although the amphetamines have for many years been used in the treatment of brain damage behavior symptoms,^{4,8,27} we have not found them as helpful as the aforementioned drugs. We have found the amphetamines especially helpful in cases of dyslexia where there is a short attention span or distractibility but no hyperactivity. Teachers report that the child "seems more interested in his work," or "at last he has begun to show some progress in reading." The drug is given at breakfast and at lunch, dextro amphetamine sulfate (Dexedrine) in 5 mg. dosage and racemic amphetamine sulfate (Benzedrine) in 10 mg. dosage. Some authors have maintained that racemic amphetamine sulfate acts differently from dextro amphetamine and is superior in its effects with some children.

After the drug is regulated, the child may then be assigned to one of our "drug management" clinics. These children are seen at 2- to 3-month intervals for check-ups and blood studies.

The parents are given an "organic" interpretation of the learning and/or behavior problems as soon as the diagnosis of minimal brain dysfunction is settled and are then advised as to home and educational

management. The relief they feel and the lessening of guilt associated with the possibility of being "bad" parents is obvious. Depending on the parents' attitudes, they are usually advised to administer firm, short, non-negotiable discipline. In most cases, the organic explanation makes parents more understanding of their children. Because of the difficulty of explaining brain dysfunction or central nervous system deviation, we usually speak of "mild" or "slight" brain damage when informing the parents of "the" cause of their child's condition.

The proper school management of children with minimal brain dysfunction is of extreme importance. These children often require an individualized teaching program^{24,38,39} which is geared to their own specific learning deficits and which allows for a slower pace of acquiring knowledge. Some of these children whose grade placement is well beyond their reading level, should have a large part of their lessons read to them so that they will not fall behind in the informational part of their courses. We frequently advise teachers to give oral examinations to such children. Usually, the teacher and the principal should know the child's diagnosis and that a program of treatment has been begun. The greatest difficulty is with those children of normal intelligence (WISC Verbal or Performance I.Q. in the normal range) who have some degree of dyslexia and/or dyscalculia, or sufficient hyperactivity to make them a problem in regular classes. Many of these children fall victim to the very questionable practice of "social passing," or of equal harm, they are placed in a special education class containing frankly mentally retarded children. These children, then, often become educational, social, and emotional casualties. If dyslexia is the major learning problem, the child should have several hours per week of specialized remedial reading instruction in very small groups. In our setting where special education classes of this kind are nonexistent in the public schools, we usually try to

arrange for a private tutor or as a last resort, instruct the mother or father in a few basic principles of remedial reading. In a few cases, the special education teacher has such remarkable talents that both MBD children and the mentally retarded children have made enormous gains in spite of the unwieldiness of mixing both groups in the same class. Such a teacher, however, could be much more helpful to both groups if she were able to teach them separately. With the number of retarded readers of average intelligence estimated at 10% or more of the school population, the time is long overdue for the proper specialized teaching of this group.

There are, of course, a good many of these cases with organic learning and behavior disorders, who in addition to drug therapy and specialized education, also need psychotherapy in the more conventional manner for child or parents or both. Lawrence²⁶ in a recent paper and Roman³² who was dealing with an older delinquent population, emphasized the importance of psychotherapy. Quite often a gifted tutor is able to provide the needed "relationship" therapy. As mentioned previously it is surprising, however, how many children improve markedly on a regimen of drugs, special teaching, and counselling; this fact is important in answering the complaint often heard that child guidance clinics bog down in a few intensive treatment cases. The community stands to gain by the utilization of any and all methods that are successful.

Comment

The diagnosis of a minimal brain dysfunction is made on the basis of clinical behavior, history, psychological evaluation, neurological signs, and EEG findings. The accumulated weight of various signs and symptoms or the singular specificity thereof (e.g., hyperactivity, typical dyslexic errors, large scatter or discrepancy between Verbal and Performance scores on the WISC), guide us in making the diagnosis. These must be evaluated against a background of

environmental and interpersonal determinants. At this stage of our knowledge, it is logical to assume that any disorganization of brain function due to injury or naturally occurring constitutional deviations, places a hardship on the developing child. If, in addition, the interpersonal environment is unfavorable, the chances are greater for such a child to experience problems compounded of his original perceptual defects, his reactions to the attitudes of persons surrounding him, and to his own failures. These accidentally or naturally occurring organic deviations must exist in a scale from the gross to the subtle and to different degrees in the various functional and interlocking units within the brain. To deny this premise is to deny that the brain is the organ of the mind and that brains can have important variations from individual to individual.

Our thinking about minimal brain dysfunctions and minimal brain damage was influenced by the following factors: (1) The similarities between the perceptual defects and symptoms of children and adults with known brain damage and children in which a brain damage history cannot be firmly established, yet who have similar symptoms; (2) the fact that the symptoms cluster together to make recognizable entities. This is of course especially true of the hyperactivity syndrome and specific reading disability, but is also true of the subtler variations that do not fit precisely into these categories; (3) the statistical studies^{21,30} which show a positive correlation between complications of pregnancy and the incidence of later appearing learning and behavioral symptoms. One study⁴² indicated such a correlation between the childhood virus diseases occurring under age 3 and reading difficulty; (4) the studies of Hallgren¹⁵ and Hermann¹⁸ and Norrie showing that there is a heredity basis for some cases of dyslexia; (5) organicity as a basis for the clinical entities being discussed is lent support by the fact of the high ratio of males to females for hyperactivity, dyslexia, impulsive acts, etc. This could be

on the basis of a "normal" developmental lag in males making them more susceptible to the disorganizing effects of brain damage and stresses during the years critical for learning symbol behavior and for acquiring self-inhibiting patterns; (6) the good response of most of these children to drugs and remedial instruction without benefit of psychotherapy, if they are detected early enough; (7) the ever present and oft disparaged fact that innumerable siblings reared under sufficiently equivalent conditions do not show these particular learning and behavior symptoms and that countless children reared under psychopathogenic conditions from the mildest to the most severe do not develop learning and behavior symptoms.

Too often we have seen parents who are good parents and who have a child who cannot learn to read, or who is a behavior problem, or is impulsive and hyperactive, or whose speed of mentation is distinctly different from his siblings, for us to jump to the conclusion that the parents must have mishandled the child. The prevailing climate of opinion in both professional and "magazine" psychiatry is such as to create in these parents the conviction that they are somehow, by some magical, subtle aberration in their attitudes and behavior, to blame for the child's condition.

It is necessary to affirm again that psychiatry must take into account the full spectrum of causality from the unique genetic combination that each individual is, to his gestation and birth experiences, to his interaction with significant persons, and finally to the stresses and emotional traumata of later life after his basic reaction patterns have been laid down. If we cannot at present measure, say, the contribution of the child's genes to his emotional characteristics, then we must leave a large, empty space in the formula of causality until we can. It is all too easy, if one is so committed by bias and habit, to detect in almost any mother or father, attitudes and behavior which can be envisioned as causing

the dyslexia, the destructiveness, or the difficulty in concentration on studies.

Perhaps the most distinctive feature of this paper is that we hold that all these areas must be evaluated for each child referred to the child guidance clinic. The psychiatrist or psychologist can no more elect to omit one or more of his basic procedures than the pediatrician can fail to listen to his patient's heart or lungs. The next most distinctive feature is that we point out that there is a prevailing fashion in child psychiatry, psychology, and social work of turning a deaf ear to organic etiology unless it is grossly obvious and of being interested in and attentive only to the intrapsychic and interpersonal factors.

Summary

It was stressed that in the usual child guidance clinic evaluation, subtle organic deviations of brain function are often overlooked and that a wide and false dichotomy has placed most workers in the position of being able to think in terms of only psychogenesis or only organicity. A diagnostic plan for detecting minimal brain dysfunctions in children of school age was outlined which involved careful history taking, a specialized neurological examination, a rigorously defined psychological evaluation, and an EEG. It was stressed that the omission of any one of these procedures makes possible a blatant misdiagnosis, hence makes possible a questionable treatment plan. Also, a plan of treatment was outlined which has been found very helpful with this large but previously neglected group of disturbed children, and which allows for the handling of a larger number of children than is the case with most child guidance clinics.

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REFERENCES

1. Beck, H. S., and Lam, R. L.: Use of the WISC in Predicting Organicity, *J. Clin. Psychol.* 11:154-158, 1955.
2. Bender, L.: A Visual Motor Gestalt Test and Its Clinical Use, New York, Amer. Orthopsychiat. A., 1938.
3. Bender, M. B.: Disorders in Perception, Springfield, Ill., Charles C Thomas, Publisher, 1952.
4. Bradley, C.: The Behavior of Children Receiving Benzedrine, *Amer. J. Psychiat.* 94:577, 1937.
5. Burks, H. F.: The Hyperkinetic Child, Except. Child, 27:18-26, 1960.
6. Byrd, E.: The Clinical Validity of the Bender Gestalt Test with Children: A Developmental Comparison of Children in Need of Psychotherapy and Children Judged Well-Adjusted, *J. Proj. Techn.* 20:127-136, 1956.
7. Cunningham, J. M.: Psychiatric Casework as an Epidemiological Tool, *Amer. J. Orthopsychiat.* 18:659, 1948.
8. Denhoff, E.: Emotional and Psychological Background of the Neurologically Handicapped Child, *Except. Child.* 27:347-349, 1961.
9. Eisenberg, L.: Psychiatric Implications of Brain Damage in Children, *Psychiat. Quart.* 31:72, 1957.
10. Eisenberg, L.: Office Evaluation of Specific Reading Disability in Children, *Pediatrics* 23:997-1003, 1959.
11. Fabian, A. A.: Vertical Rotation in Visual-Motor Performance—Its Relationship to Reading Reversals, *J. Educ. Psychol.* 36:129, 1945.
12. Gerstmann, J.: Syndrome of Finger Agnosia, Disorientation for Right and Left, Agraphia, and Acaculia: Local Diagnostic Value, *Arch. Neurol. Psychiat.* 44:398, 1940.
13. Goldberg, H. K.; Marshall, C., and Sims, E.: The Role of Brain Damage in Congenital Dyslexia, *Amer. J. Ophthalm.* 50:586, 1960.
14. Gray, W.: Standardized Oral Reading Paragraphs, The Bobbs-Merrill Co., Inc., New York, Psychological Corp., 1955.
15. Hallgren, B.: Specific Dyslexia: A Clinical and Genetic Study, *Acta Psychiat. Scand., Suppl.* 65, 1950.
16. Hanvik, L. J.: A Note on Rotations in the Bender-Gestalt Test as Predictors of EEG Abnormalities in Children, *J. Clin. Psychol.* 9:399, 1953.
17. Hanvik, L. J.; Nelson, S. E.; Hanson, H. B.; Anderson, A. S.; Dressler, W. H., and Zarling, V. R.: Diagnosis of Cerebral Dysfunction in Children, *Amer. J. Dis. Child.* 101:364, 1961.
18. Hermann, K.: Reading Disability, Springfield, Ill., Charles C Thomas, Publisher, 1959.
19. Ingram, T. T. S.: A Characteristic Form of Over-Active Behavior in Brain Damaged Children, *J. Ment. Sci.* 102:550, 1956.
20. Kanner, L., and Eisenberg, L.: Childhood Problems in Relation to the Family, *Pediatrics* 20:155, 1957.

21. Kawi, A. A., and Pasamanick, B.: Association of Factors of Pregnancy with Reading Disorders in Childhood, *J.A.M.A.* 166:1420, 1958.
22. Kennard, M. A.: The Characteristics of Thought Disturbances as Related to Electroencephalographic Findings in Children and Adolescents, *Amer. J. Psychiat.* 115:911, 1959.
23. Kennard, M. A.: Value of Equivocal Signs in Neurologic Diagnosis, *Neurology (Minneapolis)* 10:753, 1960.
24. Kephart, N. C.: The Slow Learner in the Classroom, Columbus, Ohio, Charles E. Merrill, Inc., 1960.
25. Laufer, M. W.; Denhoff, E., and Solomons, G.: Hyperkinetic Impulse Disorder in Children's Behavior Problems, *Psychosom. Med.* 19:38, 1957.
26. Lawrence, M. M.: Minimal Brain Injury in Child Psychiatry, *Compr. Psychiat.* 1:360, 1960.
27. Levy, S.: Post-Encephalitic Behavior Disorder—a Forgotten Entity: A Report of 100 Cases, *Amer. J. Psychiat.* 115:1062, 1959.
28. Low, N. L., and Myers, G. G.: Suvren in Brain-Injured Children, *J. Pediat.* 52:259, 1958.
29. Michigan Picture Test (The), Michigan Dept. of Mental Health, Chicago, Science Research Associates, Inc., 1953.
30. Pasamanick, B.; Rogers, M. E., and Lilienfeld, A. M.: Pregnancy Experience and the Development of Behavior Disorder in Children, *Amer. J. Psychiat.* 112:613, 1956.
31. Rabinovitch, R. D.; Drew, A. L.; De Jong, R. N.; Ingram, W., and Withey, L.: A Research Approach to Reading Retardation, *Res. Publ. A. Res. Nerv. Ment. Dis.* 34:363, 1954.
32. Roman, M.: Reaching Delinquents Through Reading, Springfield, Ill., Charles C Thomas, Publisher, 1957.
33. Ross, A. O.: The Practice of Clinical Child Psychology, New York, Grune & Stratton, Inc., 1959, pp. 217-250.
34. Schwade, E. D., and Geiger, S. G.: Abnormal Electroencephalographic Findings in Severe Behavior Disorders, *Dis. Nerv. Syst.* 17:2, 1956.
35. Silver, A. A.: Psychologic Aspects of Pediatrics, Postural and Righting Responses in Children, *J. Pediat.* 41:493, 1952.
36. Illinois Mental Health Center Report on Brain-Damaged Children, Springfield, Ill., August, 1957.
37. Strauss, A. A.: Aphasia in Children, *Amer. J. Phys. Med.* 33:93, 1954.
38. Strauss, A. A., and Lehtinen, L. E.: Psychopathology and Education of the Brain-Injured Child, New York, Grune & Stratton, Inc., 1947.
39. Strauss, A. A., and Kephart, N. C.: Psychopathology and Education of the Brain-Injured Child, Vol. 2, New York, Grune & Stratton, Inc., 1955.
40. Teicher, J. D.: Preliminary Survey of Motility in Children, *J. Nerv. Ment. Dis.* 94:277, 1941.
41. Thelander, H. E.; Phelps, J. K., and Kirk, E. W.: Learning Disabilities Associated with Lessor Brain Damage, *J. Pediat.* 53:405, 1958.
42. Wagenheim, L.: Learning Problems Associated with Childhood Diseases Contracted at Age Two, *Amer. J. Orthopsychiat.* 29:102, 1959.
43. Wechsler, D.: Wechsler Intelligence Scale for Children, New York, Psychological Corp., 1949.

Feelings

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DIAGNOSIS AND TREATMENT OF MINIMAL BRAIN DYSFUNCTION IN THE SCHOOL-AGE CHILD

There has been a tendency among child guidance workers to attribute almost all behavioral and learning problems of children to intrapsychic and interpersonal factors.¹ This may be due in part to the difficulty of recognizing subtle organic and central nervous system deviations and to the greater accessibility of environmental data that may actually be secondary in the development of a child's problem. Evaluation of a disturbed child must consider the possibility of minimal brain dysfunction resulting from genetic factors, perinatal insults, or illnesses and injuries during the critical years of development of the brain and central nervous system.

Any disorganization of brain function places a hardship on the growing child. If, in addition, the interpersonal environment is unfavorable, the child's problems are greater. His reactions to the attitudes of persons surrounding him and to his own failures compound his original perceptual defects.

DIAGNOSIS

Children with minimal brain dysfunctioning have near average, average or above average intelligence. They exhibit mild to severe learning and behavioral abnormalities. Such a child may present symptoms usually associated with one or more of these conditions: mild, irregular mental subnormality; emotional disturbance, motor coordination impairment, and, less frequently, visual impairment and auditory impairment.²

The diagnosis of minimal brain dysfunction is made on the basis of clinical behavior, history, psychologic evaluation and neurologic signs. The accumulated weight of signs and symptoms guides in making the diagnosis. These must be evaluated against the background of environmental and interpersonal factors.

SYMPTOMS

A given child may not have symptoms in all of the categories listed below, since each child has his own particular cluster of symptoms. The level of his intelligence and the nature of his underlying temperament determine the form of his maneuvers to compensate for the deficits or deviations.

Specific learning deficits. Most commonly affected are: reading, arithmetic, and/or spelling. There are concomitant difficulties with abstract concepts such as time and space, and in mastering tasks which are dependent upon intact visual-motor-perceptual integration.

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Perceptual deficits may occur in one or several of the sensory channels, i.e., visual, auditory, kinesthetic, tactile, etc. Printing, writing and drawing may be poor for age and measured intelligence; there may be increased difficulty with figure-ground and/or whole-part relationships.

General coordination deficits. Child often appears as clumsy or awkward; this may involve either fine muscle performance (e.g., buttoning, cutting, typing, drawing, writing) or in overall coordination (e.g., walking, riding bicycle, baseball and other sports).

Abnormal motor activity level. A. Hyperactivity—Child appears to be in constant motion, flitting from one object or activity to another, or he may be extremely restless and fidgety. This hyperactivity can also manifest as voluble, uninhibited speech, or in disorganized thinking. **B. Hypoactivity**—Child described as "slow as molasses," in that he may move, think, and talk at a reduced rate.

Impulsivity. This characteristic is most commonly associated with the hyperactive child. The youngster cannot keep from touching and handling objects or persons, particularly in a new or overstimulating environment. He frequently speaks without checking

himself. This impulsivity easily leads the child into conflict with the demands for conformity as established by family, school and society. Some children with extremely poor control of impulse may commit striking antisocial acts, to the point of stealing, fire-setting, etc., with only a modicum of provocation. The immediacy of the act prevents the child from foreseeing the consequence of his behavior.

Emotional lability. The child may be considered "highstrung," irritable, overly sensitive, etc. He will have quick changes of emotional response from high temper and tantrums to easy manageability and remorse. He may be panicked by what could seem to others as a minimally stressful situation. On the other hand, the hypoactive child is most commonly sweet- and even-tempered, cooperative, diligent, and displays a high tolerance for failure and frustration.

Short attention span and/or distractibility. The child is unable to concentrate on one activity for very long. He is drawn to irrelevant stimuli, which interferes with academic and social learning situations. Some children show a tendency to become locked in a simple repetitious motor activity or preoccupation with one verbal topic (perseveration). Some children show fair attention span when their interest is highly aroused (such as watching television), but when not so engaged, display marked distractibility.

DIAGNOSTIC PROCEDURES AND SIGNIFICANT FINDINGS

Gestation and development history are carefully taken to include viral illnesses during pregnancy, bleeding, premature contractions or rupture of membranes, low birth weight, etc. Childhood diseases are located as to age. Specific interpersonal dynamics, emotional

stresses and traumata are determined, if possible. In addition, behavioral and academic observations by the child's teacher and principal are valuable in the overall assessment.

Psychologic evaluation should include as a minimum the complete Wechsler Intelligence Scale for Children (consisting of a minimum of five verbal subtests and five performance subtests), the Bender Visual Motor Gestalt and a standardized reading test such as Gray's or Gates'.¹

Thus far, three principal patterns within the WISC have been isolated as compatible with brain dysfunction: 1) the most common pattern is *scatter* in either or both the Verbal and Performance Scales; 2) the second most frequent is that in which the verbal I.Q. is 15 to 40 points higher than the Performance; 3) the least frequent pattern is that in which the Performance I.Q. is 10 to 30 points higher than the Verbal.

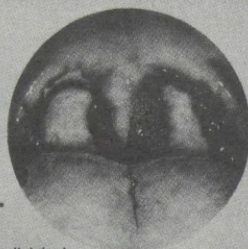
Neurologic evaluation: 1. Extension of arms, eyes closed: Abnormal — wide divergence of arms, convergence of arms, wide difference in arm levels, choreiform movements, mild choreoathetoid movements, lordosis.

2. Passive rotation of head, eyes closed: Abnormal — wide divergence of arms; convergence till overlap; flexion of occipital arm; drop of chin arm; body rotates at shoulders or hips, or entire body "whirls" to delicate passive turning of head; extreme rigidity or resistance; mild choreoathetoid movements.

3. Coordination: Heel walk, toe walk, walk a line, hop on one foot, skip, stand on one foot, catch an object. Observe for gait (spastic, ataxic, awkward), tonus (plastic, hypertonic), synkinesia, overshooting, nonspecific awkwardness in movements.

4. Perceptual-motor tasks: Writing, picture drawing, Bender Visual Motor Gestalt. Note synkinesia.

Preventive measures have virtually eliminated one of these diseases...



diphtheria

but the other remains



nutritional iron deficiency

In 1900, in New York City, there were 2,068 deaths from diphtheria. In 1960 there were none.¹ An active immunization program has largely been responsible.

In Cincinnati, it was reported in 1957, the incidence of iron deficiency in the second year of life was 25 to 30%. This was as high as it had been 20 years earlier.² Today it is still the most common nutritional deficiency of infants and children.³

Nutritional iron deficiency is easily preventable

Similac With Iron®

12 mg ferrous iron per quart of feeding
to help maintain your standards of excellence in infant feeding **ROSS**

References: 1. Private communication, Epidemiology Department, New York Department of Health, Oct. 25, 1965. 2. Guest, G.M., and Brown, E.W.: A.M.A. J. Dis. Child. 93:480, 1957. 3. Clement, D.H.: Pediatrics 34:117, 1964.

5. Cranial Nerves: Test for nystagmus; pupillary reflex; equality of pupils; III, IV, and VI—look for slight, transient strabismus and difficulty of convergence (observe for inability to exclude head movements while executing eye movements); VII, XII—position on extension, fasciculation, speech (describe any deviation in detail).

6. Deep tendon reflexes: Note symmetry.

7. Cutaneous reflexes: Abdominal; presence of Oppenheim; plantar—(a) dorsiflexion of great toe with plantar flexion of other toes, (b) dorsiflexion of great toe with fan reflex or fan reflex alone, (c) irregular dorsiflexion.

8. Other tests and manifestations: Rhomberg; dysdiadochokinesia (two hands, then one—observe for synkinesia); finger-nose; fingers-thumb opposition; astereognosis; athetoid or choreiform movements.

9. Reading test: Use a different form from that used in the psychological evaluation.

10. Right-left confusion (this knowledge normally established by age 7 or 8): (a) Place right hand on left ear, (b) insert diversional test here, e.g., finger agnosia, (c) place left hand on right knee.

11. Mixed laterality: Hand, foot, eye preference (use peep-hole card—note which eye winks more easily); ambidexterity (by observation and questions regarding writing, throwing, batting, combing, wiping, etc.).

12. Finger agnosia: Hands placed palms up (doctor touches various fingers and asks patient to name or indicate which one).

13. Unusual anatomical proportions, asymmetry, other stigmata.

Among the most frequently seen "equivocal" neurologic signs are: choreoathetoid movements of trunk, dysdiadochokinesia, poor coordination of fingers, mixed and confused laterality (the former refers to the use of hand, foot, or eye, and the latter to the ability to distinguish right from left), speech defect (a history of slow speech development or defect), transient strabismus and general awkwardness.

EEG findings—In spite of the lack of agreement in this field, the high frequency of borderline or abnormal records reported for these children is felt to be significant.

TREATMENT AND MANAGEMENT

A surprising and significant number of children with minimal brain dysfunction can be handled by a combination of drugs and infrequent counseling. The drugs found most helpful in reducing hyperactivity and irritability and in increasing attention span are dextroamphetamine, methylphenidate hydrochloride (Ritalin®), thioridazine hydrochloride (Mellaril®) and captodiamine hydrochloride (Suvren®). Each child responds differently to the various drugs and dosages. Often a period of experimentation is necessary to reach the best prescription for a given child.

The parents are given an "organic" interpretation of the learning or behavioral problems and are then advised as to home and educational management. The relief they feel and the lessening of guilt feelings associated with the possibility of being "bad" parents is obvious; they usually become more understanding of their children. Depending on their attitudes toward the child, they are generally advised to administer

firm, short, *nonnegotiable* discipline, but without scolding or belittling.

These children often require an individualized teaching program geared to their specific learning deficits and allowing for a slower pace of acquiring knowledge. Those whose grade placement is well above their reading level should have a large part of their lessons read to them so that they will not fall behind in the informational part of their courses. The teacher and principal should know the child's diagnosis, his limitations and that a program of treatment has been started.

The greatest difficulty is with those children of average intelligence who have some degree of dyslexia or dyscalculia, or sufficient hyperactivity to make them a problem in regular classes. Many of these children fall victim to the practice of "social passing" or are placed in a special instruction class containing frankly mentally retarded children. They then often become educational, social and emotional casualties.

If dyslexia is the major learning problem, the child should have several hours per week of specialized remedial reading instruction in a very small group. If special classes of this kind are not available, arrangements for a private tutor should be made. As a last resort, a parent can be instructed in a few basic principles of remedial reading.

There are, of course, some children with organic learning and behavior disorders who, in addition to drug therapy and specialized education, also need psychotherapy in the more conventional manner, i.e., for the child, his parents or both.

FURTHER CONSIDERATIONS

1) Some children in whom a brain-damage history cannot be firmly established have symptoms and perceptual defects similar to those of children and adults with known brain damage.

2) Statistical studies^{1,4} show a positive correlation between complications of pregnancy and the incidence of later appearing learning and behavioral symptoms.*

3) Studies^{5,6} show that there is a hereditary basis for some dyslexia.

4) There is a high ratio of boys to girls for hyperactivity, dyslexia, impulsive acts, etc. This could be on the basis of a "normal" developmental lag in boys, making them more susceptible to the disorganizing effects of brain damage and stresses during the years critical for learning to use literal and numerical symbols and for acquiring self-inhibitory patterns.

5) In identifying the brain-damaged child one must consider that innumerable siblings reared under comparable conditions do not show these particular learning and behavioral symptoms. In addition, countless children reared under psychopathogenic conditions from the mildest to the most severe do not develop the kind of learning and behavioral symptoms associated with brain dysfunction.

1. Clements, S.D., and Peters, J.E.: Arch. Gen. Psychiat. 6:185, 1962.

2. Clements, S.D.: Journal-Lancet 86:121, 1966.

3. Kawi, A.A., and Pasamanick, B.: J.A.M.A. 166:1420, 1958.

4. Pasamanick, B.; Rogers, M.E., and Lilienfeld, A.M.: Amer. J. Psychiat. 112:613, 1956.

5. Hallgren, B.: Acta Psychiat. Scand., Suppl. 65, 1959.

6. Hermann, K.: Reading Disability, Springfield, Ill., Charles C. Thomas, 1959.

*Feelings, Vol. 5, No. 6, 1963 (Neuropsychiatric Disorders: Influence of Pre- and Perinatal Trauma)

CASE HISTORIES OF MINIMAL BRAIN DYSFUNCTION

HYPERACTIVE CHILD

A.G., age 6 years

Presenting Complaint: Child is confused as to whether he is right-handed or left-handed. He continually

switches back and forth between the two. Parents have tried many measures to force a choice of hand, including letting him "work it out," bribery and insistence on the use of one hand exclusively.

Appearance and manner: A. G. is pleasant and cooperative. He is extremely tense and easily distracted, and his attention span is short for his age.

Perinatal, developmental and medical history: No abnormalities during pregnancy or delivery. Mother had previous spontaneous abortion, and was given hormones during early months of pregnancy. Began walking at 15 months, talked in sentences at 1½ years. No childhood illnesses, but some hay fever.

Family: A. G.'s parents are in their mid-thirties, upper middle class, professional family. Younger brother, 2½ years old.

School and testing: Attended nursery and kindergarten. Achievement in school was below average, but I.Q. score on the California Mental Maturity Test was 135 and score on a reading readiness test was high normal. Teacher described child as variable in mood and extremely hyperactive, with extreme lack of self-control, short attention span; confusion as to right- or left-handedness, poor eye-hand coordination, no meaningful concept of symbols and easily distracted by other children.

Wechsler Intelligence Scale for Children: Verbal I.Q. of 142 and Performance I.Q. of 105; obvious difficulties in other visual-motor tasks, notably drawing.

Neurological: Squint of the right eye (divergent) and ambidexterity.

EEG: Generalized dysrhythmia.

Impressions and Comments: Minimal brain dysfunction. Parents were counselled on the need for special education as a means of getting the boy well grounded in basic reading skills. Because the mother found this a difficult diagnosis to accept, several interviews were necessary to allay her fears about the boy.

Disposition: The boy was placed in a special school, but one not equipped to handle children with learning problems. He was given *Suvren*® in varying dosages over the next year and a half with only slight improvement. A repeat Bender-Gestalt, at the age of 7, indicated A. G. was still distractible, with short attention span, and still confused as to handedness. Reading test showed he knew only three words from Kanner's first grade level material, and he had no useful grasp of phonics. A change to a private school and of medication (to *Mellaril*®) resulted in noticeable improvement in learning and in decrease in hyperactivity. After four years of school and three summers of summer school, A. G. was reading at 1½ years above his grade level and was calculating above his grade level. He was then taken off medication and tried in public school. After an initial adjustment he continued to improve, so that at the end of the sixth grade he had no further need for close medical supervision or special academic supervision.

HYPOACTIVE CHILD

George C., age 8 years, 10 months

Presenting complaint: He dawdles, resists directions; he is shy, hesitant, restless and slow in school. Parents checked the following on a list: fearful, restless, shy, prefers younger children, can't seem to concentrate, bedwetting, doesn't follow through with directions, temper tantrums.

Appearance and manner: George is large, stocky, placid, hesitant, slow to answer questions, without initiative in the interview, unsmiling, but not angry or fearful.

Perinatal development and medical history: Spotting during third month of pregnancy, low forceps delivery, good color, birth weight 7 lb. 4 oz. Early developmental milestones normal. Still wets bed occasionally. History of asthma, frequent sore throats, age 3 to 6. History of hay fever.

Family: One sister, age 12, attractive; also asthmatic. George depends on his sister for decisions. Mother, age 36, somewhat worried looking, speaks in hesitant, uncertain voice; preoccupied with details such as teeth and manners. Father, age 35, is a "chief engineer," has high educational expectations for his children.

School and testing: In his first year in school received spanking and wouldn't talk at school. At mid-year was moved back to kindergarten where he talked and related better to children. At age 7 a group intelligence test scored an I. Q. of 86. At age 8½ achieved an I. Q. of 83 on the Stanford-Binet. The school examiner wrote — "It was difficult to hold his attention and he was easily distracted by extraneous stimuli, or by his own ideas." His teacher wrote — "He is not a child that upsets a room or causes the teacher trouble. Our concern is that we are not able to reach him. Works well with one child, but becomes irritable or withdrawn in a group." Described as "having no will to participate, shows no interest." Both felt that his capacity was greater than his achievement.

Wechsler Intelligence Scale for Children at Age 8 years, 10 months: Verbal I.Q. — 90, Performance I.Q. — 96.

Bender-Gestalt: Large scrawls, circles for dots, verticalization, absent angles — all suggesting CNS deviation.

Reading: At lower limits of second grade.

Arithmetic: First grade level.

Special neurologic at Age 13½: Slight choreoathetoid movements of body, arms and fingers when standing with arms extended. Increased latent period in speech responses. Parallel associated movements of fingers of opposite hand on fingers-thumb test not usual for his age. Slow and awkward in movement. An EEG was read as "within normal limits."

Impressions and Comments: This child was diagnosed as having minimal brain dysfunction. The diagnosis was based on the scatter in WISC, average I. Q., reading and arithmetic disability, and the perceptual-motor disability shown on the Bender. Repeat testing at age 13½ showed reduced scatter in the WISC and some improvement in Bender figures.

George is described as restless rather than hyperactive. When required to concentrate, his attention wanders and he becomes squirmy, sighs, yawns and fiddles with pencil or paper.

The most typical elements in children with minimal brain damage are short attention span and learning disabilities. The level of activity may vary from the most phlegmatic to the most hyperactive.

Disposition: George was placed in a private special school equipped to give him remedial work in reading and arithmetic, where he made satisfactory progress. He was given *Dexedrine*®, and his teachers reported increased attention span. When he started, in the third grade, his reading achievement was 1.8. In the sixth grade he rated as follows: Reading — 7.8, spelling — 5.5, and arithmetic — 6.1. Comprehension was at grade level. At end of sixth grade he was transferred to a special class for children with learning disabilities in the public schools, and at the end of that year he was prepared to enter the eighth grade.

[To be published in Medical Tribune, Summer, 1967, Section on Consultant]

QUESTIONS AND ANSWERS RE MINIMAL BRAIN-DAMAGED CHILD

(Consultant: Dr. John E. Peters, Professor and Associate Chairman, Department of Psychiatry; Director, Child Psychiatry, University of Arkansas Medical Center, Little Rock, Ark.; Research Consultant, North Little Rock V.A. Hospital, North Little Rock, Ark.)

Questioner: Dr. JAMES G. COLDWELL, pediatrician, Tulsa, Okla. Please comment on the efficacy of specific exercise programs that are designed to improve the neurologic integrity of the child with minimum brain dysfunction. Do these programs increase learning ability, and if so, what program do you recommend and why?

Answer: This is an area of intensive research and thought at this time and reports vary from uncertain to enthusiastic. If given an option, I would prefer that many children under my care be given the motor and perceptual training as contained in the publications of Kephart, Getman, Frostig, and others. An important consideration is the age and maturity of the child. It is a reasonable assumption that culturally deprived children age 5 to 7 could benefit by such programs, especially in learning to attach specific words to perceptual and motor concepts and in learning to follow directions of graduated complexity. In learning to learn they would earn a precious bonus beyond content itself. The same rationale holds true for children with CNS maturational lags. They commonly lack concepts and words for concepts dealing with direction, body space, body control, sequence, sensory discrimination, foreground-background, and the formation of wholes from parts. For a child with brain dysfunction or even what might be called simply "minimal cerebral difference", it is essential to assess the current status of his profile of deficits and strengths. In some cases teaching the "thing itself" (reading or arithmetic) in an individualized way is sufficient; i.e., using enriched detours via modalities where the child has strengths. In other cases it would be advisable to start with the precursors of reading and arithmetic; i.e., direction, sequence, forms, motor control, auditory and visual discrimination. Another important dimension of alleviation, especially where there is emotional lability and hyperactivity, is that of behavior shaping by selective reinforcement. Returning to your question, I deplore the cult atmosphere which has grown up around certain programs of creeping and crawling—these have proven to be costly in time and money, and thus far, not impressive under scientific scrutiny.

Questioner: Dr. RICHARD L. MILLER, general practitioner, Xenia, Ohio. What would you suggest as basic office procedures to screen the so-called minimal brain-damaged child? What would be your drugs of choice in treating the hyperactive child between ages 6-12 with minimal brain dysfunction?

Answer: At the present time there is no agreed upon office procedure for screening the child with minimal brain dysfunction. Let me explain the meaning of MBD, which has great heuristic and practical value: I refer to a profile of deficits and strengths in intellect, emotion, attention, and impulse control sufficiently divergent from the average to pose a problem for learning and adjustment in a given environment and culture. The environment itself is made up of a specific profile of demands and expectations which does not well match the profile of deficits and talents in our child case. I hypothesize that the child's profile of deficits and strengths is set by rather extreme genetic variations in particular kinds of intellectual, motor and temperamental modalities, by perinatal or early brain damage, and by severe interpersonal and cultural deprivations in critical periods. I see the spikes and valleys of his profile as being accentuated or alleviated by the quality of match and interaction between the child and his particular environment. To gain an adequate understanding of what constitutes deficits, you should spend time observing and working in a child guidance or development clinic. We consider the following an adequate work-up: perinatal and developmental history, behavior history, school history, the Wechsler Intelligence Scale for Children, the Bender Gestalt test, an individual reading test, and a special neurological examination of motor integrity. The newer perceptual and achievement tests and researches on behavioral and neurological assessment hopefully will lead to simple screening devices.

Questioner: Dr. NATALIE H. SCHUCKMELL, pediatrician, Anaheim, Calif. Are psycho-maturational levels of "school failure" complemented by such drugs as methylphenidate or imipramine or amphetamines in those hyperactive children

who have intellectual deficit as well as those with emotional or perceptual problems?

Answer: In my experience the child who has a mild or severe specific learning disability with or without distractability but does not have hyperactivity, emotional lability, or excess aggressiveness may be helped by small doses of dextroamphetamine (2.5 to 10 mg. b.i.d.). I have not tried methylphenidate or imipramine for this kind of child. Where there is hyperactivity with or without perceptual deficits, but with emotional problems, I would suggest larger doses of dextroamphetamine or methylphenidate. In many cases I use phenothiazines alone or in combination with the above drugs. Children are highly individual in response to these drugs; dosage should be adjusted carefully over a period of time. I regard current drug choices as tentative; much research is needed. Perhaps I should add that, in general, tutoring or small class teaching with appropriate methods takes precedence in my thinking over the use of medications.

Minimal Brain Dysfunction in Children

Terminology and Identification
Phase One of a Three-Phase Project

COURTESY OF:
DEPARTMENT OF PSYCHIATRY
University of Arkansas Medical Center
Little Rock, Arkansas 72205

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE • Public Health Service

Minimal Brain Dysfunction in Children

Terminology and Identification
Phase One of a Three-Phase Project

by SAM D. CLEMENTS, Ph. D.
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Little Rock, Arkansas

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1966

Foreword

Deviations in nervous system function may lead to a wide variety of disabilities. These range in severity from the most subtle alteration of complex thought process to the grossest mental and motor disability. Their nature depends upon the individual's basic inheritance, the impact on his nervous system of any deleterious prenatal or postnatal factors, and the age at which such factors may have been operative. The effect of such deviations is markedly influenced by interaction of the child with his physical and social environment and by his training and education.

This report is the first of a series on the special medical and educational needs of that group of children whose dysfunction does not produce gross motor or sensory deficit or generalized impairment of intellect, but who exhibit limited alterations of behavior or intellectual functioning. The early recognition and adequate evaluation of such children is important because they require special forms of management and education if they are to develop to their fullest potential.

Richard L. Masland

RICHARD L. MASLAND, M.D.,
Director, National Institute of
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Public Health Service

JANUARY 1966

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I. Introduction to the Problem

A large number of individuals within our population show deviations of intellect and behavior of such a nature as to require special resources for their management and education. The concept of brain dysfunction as a primary causative factor in these learning and behavioral disorders of children has received increasing attention over the past 20 years. This concept has attained particular prominence in the fields of medicine, psychology, education, and the language specialties.

The current extensive concern for, awareness of, and interest in children with minimal brain dysfunction is not restricted to the professional groups who work with and for children. Indeed, the stirrings of discontent have been intensified by parents of such children. Parents alone, or more recently through organized local, State, and National groups, have demanded increased public and professional acknowledgment of this host of handicapped youngsters. Parents want services to aid each such child to develop to his potential; they have appealed for specialized academic training for professional groups, to give such services effectively.

Few subject areas have occasioned such wide multidisciplinary concurrence and collaboration while simultaneously provoking professional disjunction and discord. In fact, the role of brain injury within this broad constellation of physical, intellectual, and behavioral deviations has not been determined with precision.

The educators and, in particular, the elementary classroom teachers must provide programs for such individuals, regardless of the exact cause of their disability. In some instances this situation has led to hastily conceived public school programing, involving a considerable expenditure of money, with inadequate provisions and criteria for student selection, teacher training requirements, program supervision, and evaluation.

Educators cannot defer dealing with the educational disabilities of these children or the behavioral disturbances they frequently display pending scientific clarification of the issues.

The rise in the number of so-called "children with minimal brain dysfunction" may, in part, be explained on the basis of one or more of the following factors:

1. The increased refinement in diagnostic techniques and skills over the last several years.

2. The growing necessity for more precise classification of the learning and behavioral disorders of children. The usefulness of statistical data for such purposes as reporting to central agencies, program planning, and research depends on precise classification. This is particularly true of outpatient child guidance clinics. In these clinics, there is a general agreement that the standard psychiatric nosology as outlined in the Diagnostic and Statistical Manual of the American Psychiatric Association (1952), is unsatisfactory and, for the most part, inappropriate for use with children. (It was developed mainly for the classification of adult disorders.)

3. An apparent increase in the number of children compromised by neurologic dysfunctions, which, unfortunately, is often the unintentional aftermath of advances in medical knowledge and care.

4. A growing dissatisfaction on the part of many medical workers with children with purely psychogenic and interpersonal explanations for any disorganized or poorly understood behavior.

A commonly expressed concern of both professionals and parents is the general lack of knowledge, understanding, and agreement in the broad area of minimal brain dysfunction among the clinicians who are accountable for the diagnosis and treatment of deviating children.

The concept of minimal brain dysfunctions in children and the implications for child psychiatry, child

psychology, education, legislative action, neurology, pediatrics, rehabilitation, and research, have top priority with parents and professional persons. The National Institute of Neurological Diseases and Blindness, and the National Society for Crippled Children and

Adults, Inc., provided the initiative for clarification of the issues involved and the development of a blueprint for action.

The following document presents one segment of this collaborative effort.

II. History and Blueprint of the Project

On August 22, 1963, a steering committee meeting to develop a symposium on the "Child with Minimal Brain Dysfunction" was held in Washington, D.C. It was sponsored by the National Society for Crippled Children and Adults, Inc., in cooperation with the Neurological and Sensory Diseases Service Program of the Division of Chronic Diseases, U.S. Public Health Service.

The group was in accord that considerable thought and planning must precede a high-level symposium on this complex subject. It was agreed that small groups (task forces) should meet to work on specific aspects of the general subject of the child with minimal brain dysfunction. Suggestions included a subcommittee on terminology and identification, a classification of criteria for diagnosis, a survey of the magnitude of the problem, and a listing of available facilities for diagnosis, therapy, education, and rehabilitation. Various methods of financing such a project were discussed.

On October 10, 1963, a meeting of the Committee on Task Forces was held in Chicago, Ill., sponsored by the National Society for Crippled Children and Adults, Inc. The following individuals attended: Edward Lis, M.D.; Helmer Myklebust, Ed. D.; Ward Halstead, Ph. D.; Meyer Perlstein, M.D.; Ralph H. Kunstader, M.D.; William Gellman, Ph. D.; Miss Jayne Shover. The purpose of the session was to delineate the objectives of the task forces as recommended at the Washington conference and to consider their membership.

The task forces were profiled as follows:

Task Force I—Terminology and Identification

- Define problem.
- Suggest nomenclature.
- Identify child.
- Delineate relationship of this problem to other handicaps.
- Outline diagnostic criteria.

Task Force II—Services

- Extent of need:
- For medical diagnosis and treatment.
- For identification of educational capabilities and methods of educating afflicted children.
- Availability: In medical centers? In public schools?
- What services from a practical viewpoint should be made available?
- What should a public information program include to acquaint the community with the problem?

Task Force III—Research

- Applied research.
- Basic research.

In July 1964, the National Society for Crippled Children and Adults, Inc., and the National Institute of Neurological Diseases and Blindness, of the National Institutes of Health, agreed to cosponsor Task Forces I and III. The Society and the Neurological and Sensory Disease Service Program are cosponsoring Task Force II in cooperation with the Office of Education.

These members of the Task Force I Committee and a Project Director were named in August 1964:

- Richmond S. Paine, M.D., Children's Hospital and George Washington University School of Medicine, Washington, D.C.—Committee Chairman.
- Herbert G. Birch, M.D., Ph. D., professor of pediatrics, Albert Einstein College of Medicine, New York, N.Y.
- Raymond L. Clemmens, M.D., Department of Pediatrics, University of Maryland School of Medicine, Baltimore, Md.
- Leon Eisenberg, M.D., professor of child psychiatry, Johns Hopkins University, Baltimore, Md.
- Ralph H. Kunstader, M.D., chairman, Professional Advisory Council, National Society for Crippled Children and Adults, Inc., Chicago, Ill. (ex officio).
- Edward Lis, M.D., professor of pediatrics, University of Illinois, Chicago, Ill.
- Richard L. Masland, M.D., Director, National Institute of Neurological Diseases and Blindness, National Institutes of Health, Bethesda, Md.
- Helmer Myklebust, Ed. D., director, Institute for Language Disorders, Northwestern University, Evanston, Ill.

Beale Ong, M.D., consultant in pediatric neurology, Neurological and Sensory Disease Service Program, U.S. Public Health Service, Washington, D.C.

John E. Peters, M.D., professor of psychiatry, University of Arkansas Medical Center, Little Rock, Ark.

Miss Jayne Shover, associate director, National Society for Crippled Children and Adults, Inc., Chicago, Ill. (ex officio).

Sam D. Clements, Ph. D., associate professor, Departments of Psychiatry and Pediatrics, University of Arkansas Medical Center, Little Rock, Ark.—project director.

A grant from the Easter Seal Research Foundation to cover the expenses of the Committee members of Task Force I was awarded for administrative handling to George Washington University, Washington, D.C. The project director was appointed a consultant to the National Institute of Neurological Diseases and Blindness.

October 1, 1964, was the target date for the official launching of the project.

III. A Brief History of the Concept of Minimal Brain Dysfunction

The literature on minimal brain dysfunction prior to 1920 is sparse and is generally concerned with observations on individuals who sustained damage to the brain after reaching adulthood.

Several early references describe "nervous conditions" in children which affect learning and behavior (1, 2).

Many papers appearing during the period between the two World Wars can be considered as the descriptive forerunners of certain aspects of minimal brain dysfunction. Of particular importance are the contributions of Kramer and Pollnow (3); Kahn and Cohen (4); Bender (5, 6); Goldstein and Scheerer (7); Goldstein (8); Orton (9). A large number of references are devoted to the linkage between specific etiologic agents and resultant changes in behavior and learning abilities (10-21).

The early work of Gesell and Amatruda (22); Werner and Strauss (23); Werner and Thuma (24); Werner and Weid (25); Strauss and Werner (26); Strauss (27) sets the stage for the concepts of brain dysfunction in children and the child with minimal brain dysfunction as they are presently constituted. The classic work of Strauss and Lehtinen (28) became the first comprehensive presentation on the topic and is the reference most frequently cited by subsequent

authors. As is the case with many pioneering works, it represented the essence of 20 years of foregoing study. In the light of the subsequent expansion of the concepts the study may appear fragmentary. Mindful of this, and perhaps anticipating reproving response, Strauss and Kephart acknowledged the need for alterations in theories and applications as new data accumulated (29).

Nonetheless, few single volumes have been so influential in the production of fresh considerations in the areas of pathology, diagnosis, education, and investigation of children with learning and behavioral disabilities. It refocused attention on the neglected area of *individual differences* among children. It also is an excellent illustration of the usefulness of collaboration on a problem area.

Since 1950, the literature has become increasingly loaded with clinically oriented articles and studies of the disabilities under the general concept of minimal brain dysfunction in children.

The recent volume edited by Birch (30); the comprehensive review of mental subnormality by Masland, Sarason, and Gladwin (31); and recent standard texts of child psychology, neurology, pediatrics, and psychiatry obviate an extensive review of the literature for this particular paper.

IV. Toward Clarification of Central Issues

Several basic issues impede agreement on the concepts of "brain dysfunction" and the "child with minimal brain dysfunction." They come from our incomplete knowledge of the human organism, our communication failures, and our personal biases. Any serious attempt at solution must at least acknowledge these issues.

THE ORGANICITY-ENVIRONMENT OBSTACLE

One issue is the age-old dilemma: Organicity vs. environment. This conflict, which is reminiscent of the heredity-environment controversy, represents an updating and expansion of its predecessor.

The concept of organicity has been broadened to include all factors which originate in or are inherent in pathology, including genetic variations, biochemical irregularities, perinatal brain insults, or the results of illnesses and injuries sustained during the years critical for the normal development and maturation of the central nervous system.

Included in the organicity concept is the proposition that any condition which alters normal functioning can manifest itself as learning and behavioral irregularities. These irregularities depend upon such factors as causes, loci of the assault, developmental stage of embryo, fetus, or child, and diffuseness or discreteness of the damage to the central nervous system (CNS).

The concept of environment would consider all factors related to the normal life experiences inherent in the social-economic-cultural milieu of the individual, his interpersonal relationships, and his personal psychological traumata and stresses. Included is an appreciative regard for the part such elements could play in the production of learning and behavioral irregularities.

Assuming agreement that the two major determinants of learning and behavior are organicity and environment, the diagnostic team must determine, as accurately as possible, the amount of impairment each

is contributing to the chief complaints about the child and to his clinical symptoms.

If the "whole child" approach to diagnosis is deemed essential to the earnest understanding of a "difficult" youngster, then equal weight, in terms of symptom antecedents and investigatory priority, must be given to both organicity and environment.

Although organicity is often recognized as a contributor to symptomatology, it is frequently ignored in the final diagnosis of the child, and in the treatment planning, unless it is grossly obvious. The justification offered is our inability to ascertain exactly the extent of its contribution.

TWO DIFFERING POINTS OF VIEW

A second clouded issue reflects uncertainty regarding the very existence of a condition such as "minimal brain dysfunction" in the *types of children with which we are dealing*. For convenience, the extreme views will be categorized and labeled according to the sentiments of their proponents.

1. The purist point of view is that "minimal brain dysfunction" is in most instances an unproven presumptive diagnosis. Therefore, the concept can have little meaning and acceptance until such time as our knowledge is greatly increased and our diagnostic skills remarkably refined. Brain dysfunctioning can only be inferred until physiologic, biochemical, or structural alterations of the brain are demonstrated.

2. The pragmatic case might be presented in the following manner: With our limited validated knowledge concerning relationships between brain and behavior, we must accept certain categories of deviant behavior, developmental dyscrasias, learning disabilities, and visual-motor-perceptual irregularities as valid indices of brain dysfunctioning. They represent neurologic signs of a most meaningful kind, and reflect disorganized central nervous system functioning at the

highest level. To consider learning and behavior as distinct and separate from other neurologic functions echoes a limited concept of the nervous system and of its various levels of influence and integration.

We cannot afford the luxury of waiting until causes can be unquestionably established by techniques yet to be developed. We cannot postpone managing as ef-

fectively and honestly as possible the large number of children who present chronic differences we feel are more related to organicity variables than others.

The above two views represent the extreme versions of the situation. If clinicians' viewpoints could be plotted, the result would most likely take on the shape of a bimodal distribution with overlapping.

V. Nomenclature

Nomenclature is essential to facilitate communication. Its purpose is to engender mutual understanding. To this end, terminology must define accurately and, in so doing, distinguish clearly one condition from another. To be understood readily, the term must describe the condition.

The task of terminology selection might be simplified if endorsement were required by one group only, e.g., pediatric neurologists. In the case of children with minimal dysfunction the designation must attempt to satisfy the diverse demands of at least four groups:

1. The clinicians (usually involving several disciplines) who diagnose, outline, and execute treatment.
2. The researchers who are concerned with descriptive accuracy, validity, and preciseness of the CNS deviations.
3. Other professional groups who deal with the children and fulfill portions of the treatment plan, e.g., educators.
4. Parents and others who are personally involved with the child.

Disagreement has developed over the use of the term "minimal brain dysfunction" as either a diagnostic or descriptive designation. Historically, the terms "brain-crippled," "brain-injured," and "brain-injured child," were selected by Strauss, Werner, Lehtinen, and others, to describe and account for particular learning and behavioral aberrations in certain children. Other writers, in contributing to or expanding the concept or in describing the condition, used such transitional terms as "brain damage," "brain-damaged child," "brain dysfunction," or "cerebral dysfunction."

Judging from frequency of appearance in the literature, "brain damage" and "brain-damaged child" seem to be the most popular. Although these two terms are the most widely employed, most writers agree that they are unfortunate in that they connote specific demonstrable brain alterations, are unclear,

erroneous, too inclusive, or represent a "limited" Straussian view. A proposal for the resolution of the terminology problem was offered several years ago by Stevens and Birch (32).

Over the years, the designation "brain-damaged" has been applied to most children determined to be in the "organic" classifications regardless of responsible agents or symptoms. Thus, if the major overt manifestations of a dysfunctioning brain appear in the motor areas (the cerebral palsies); sensory areas (visual or auditory impairments); mentation or intellect (the mental subnormalities); or as seizures (the epilepsies); the "brain-damaged" label has frequently been applied to the child, especially when related specific learning and behavioral deviations accompany the other primary symptoms. This situation has given rise to the frequent complaint that the term has evolved into an all-embracing "wastebasket" designation.

The problem compounds itself when one considers a partial list of other diverse characteristics which have been attributed to brain variations: infantile autism; childhood schizophrenia; superior intellect; specific talents and abilities in music, art, language, athletics; the aphasia; specific dyslexia; or early and superior reading ability.

In an attempt to establish a continuum of dysfunctioning in any of the areas of brain function, and to distinguish severity of symptoms in one or a combination of these areas, many later authors prefixed the adjective "minimal" to the terms "brain damage," "brain dysfunctions," or "cerebral dysfunction." In the main, these terms were used by their authors to describe milder, borderline, or subclinical abnormal manifestations of motor, sensory, or intellectual function, and to indicate specific kinds of learning, thinking, and behavioral sequelae.

Of major significance is the use of "minimal brain dysfunction" to designate a large group of children whose neurologic impairment is "minimal" (as on a continuum), subtly affecting learning and behavior,

without evident lowering of general intellectual capacity.

Strauss and Lehtinen (28, p. 108 and p. 128) use the terms "minor brain damage," and "minimal brain injury," for this same condition, stating: "Behavior and learning, it is now beginning to be recognized, may be affected by minimal brain injuries without apparent lowering of the intelligence level." The volume by Strauss and Kephart (29) is primarily devoted to this group of youngsters. Gesell and Amatruda (22, p. 240), using the term "minimal cerebral injury," describe the counterpart in infants and young children.

These terms have been criticized by Birch (30, p. 5). Yet the authors using "minimal brain damage" or "minimal brain dysfunctions" apparently have done so in an honest effort to characterize categories of children. These children are *different* in certain learning and behavioral patterns, but when tested individually and comprehensively achieve within the near average, average, or above average ranges of intellectual functioning. The vital implication is that educational programing and rehabilitation for these children must be different than for the brain-damaged mentally subnormal groups.

Response to the cardinal questions: "What shall it be called?" and "Whom shall it include?" will depend upon the acceptance of two basic premises:

1. Brain dysfunction can manifest itself in varying degrees of severity and can involve any or all of the more specific areas, e.g., motor, sensory, or intellectual. This dysfunctioning can compromise the affected child in learning and behavior.

2. The term *minimal brain dysfunction* will be reserved for the child whose symptomatology appears in one or more of the specific areas of brain function, but in mild, borderline, or subclinical form, without reducing overall intellectual functioning to the subnormal ranges. (Note: The evaluation of the intellectual functioning of the "culturally disadvantaged" child, though perhaps related, represents an equally complex, but different problem.)

A review of selected literature revealed a total of 38 terms used to describe or distinguish the conditions grouped as minimal brain dysfunction in the absence of findings severe enough to warrant inclusion in an established category, e.g., cerebral palsies, mental subnormalities, sensory defects. Several methods of grouping these terms are possible, such as:

Group I—Organic Aspects

- Association Deficit Pathology (33)
- Organic Brain Disease (5, 34)
- Organic Brain Damage (35)

- Organic Brain Dysfunction (36)
- Minimal Brain Damage (38)
- Diffuse Brain Damage (39)
- Neurophrenia (40)
- Organic Drivenness (4)
- Cerebral Dysfunction (41)
- Organic Behavior Disorder (42)
- Choreiform Syndrome (43)
- Minor Brain Damage (28)
- Minimal Brain Injury (28, 44)
- Minimal Cerebral Injury (22)
- Minimal Chronic Brain Syndromes (45)
- Minimal Cerebral Damage (46)
- Minimal Cerebral Palsy (47)
- Cerebral Dys-synchronization Syndrome

Group II—Segment or Consequence

- Hyperkinetic Behavior Syndrome (48)
- Character Impulse Disorder (49)
- Hyperkinetic Impulse Disorder (50)
- Aggressive Behavior Disorder (51)
- Psychoneurological Learning Disorders (52)
- Hyperkinetic Syndrome (53 and others)
- Dyslexia (54 and others)
- Hyperexcitability Syndrome (43)
- Perceptual Cripple (55)
- Primary Reading Retardation (56)
- Specific Reading Disability (57)
- Clumsy Child Syndrome (58)
- Hypokinetic Syndrome (59 and others)
- Perceptually Handicapped
- Aphasoid Syndrome
- Learning Disabilities
- Conceptually Handicapped
- Attention Disorders
- Interjacent Child

With few exceptions, the most striking omission throughout the literature was the lack of attempt at a definition of the terms used or the condition discussed. Although there is a more than ample supply of terminology and characteristics, there is a shortage of interpretative elucidation.

Notable among so-stated definitions is that of Strauss and Lehtinen (28). Others have approached definition by extensive description (5, 30, 35, 37, 40, 44, 45, 46, 55, 59).

MINIMAL BRAIN DYSFUNCTION SYNDROME DEFINITION

The term "minimal brain dysfunction syndrome" refers in this paper to children of near average, average, or above average general intelligence with certain learning or behavioral disabilities ranging from mild to severe, which are associated with deviations of function of the central nervous system. These deviations may manifest themselves by various combinations of impairment in perception, conceptualization, lan-

guage, memory, and control of attention, impulse, or motor function.

Similar symptoms may or may not complicate the problems of children with cerebral palsy, epilepsy, mental retardation, blindness, or deafness.

These aberrations may arise from genetic variations, biochemical irregularities, perinatal brain insults or other illnesses or injuries sustained during the years which are critical for the development and maturation of the central nervous system, or from unknown causes.

The definition also allows for the possibility that early severe sensory deprivation could result in central nervous system alterations which may be permanent.

During the school years, a variety of learning disabilities is the most prominent manifestation of the condition which can be designated by this term.

The group of symptoms included under the term minimal brain dysfunction stems from disorders which may manifest themselves in severe form as a variety of well-recognized conditions. The child with mini-

mal brain dysfunction may exhibit these minor symptoms in varying degree and in varying combinations.

Classification Guide, Brain Dysfunction Syndromes

<i>Minimal (minor; mild)</i>	<i>Major (severe)</i>
1. Impairment of fine movement or coordination.	1. Cerebral palsies.
2. Electroencephalographic abnormalities without actual seizures, or possibly subclinical seizures which may be associated with fluctuations in behavior or intellectual function.	2. Epilepsies.
3. Deviations in attention, activity level, impulse control, and affect.	3. Autism and other gross disorders of mentation and behavior.
4. Specific and circumscribed perceptual, intellectual, and memory deficits.	4. Mental subnormalities.
5. Nonperipheral impairments of vision, hearing, haptics, and speech.	5. Blindness, deafness, and severe aphasia.

VI. Symptomatology—Identification of the Child

In a search for symptoms attributed to children with minimal brain dysfunctioning, over 100 recent publications were reviewed.

Many different terms were used to describe the same symptom, e.g., excessive motor activity for age might be referred to as any one of the following: hyperactivity, hyperkinesis, organic drivenness, restlessness, motor obsessiveness, fidgetiness, motor disinhibition, or nervousness.

A large number of terms were too broad for other than limited value, e.g., "poor academic achievement"; others were more specific, e.g., "reading ability two grade levels below grade placement." A few are mentioned one time only, e.g., "inclined to have fainting spells." Others are too general (or judgmental) to classify, e.g., "often good looking." Opposite characteristics are common: "physically immature for age"—"physically advanced for age"; "fearless"—"phobic"; "outgoing"—"shy"; "hyperactive"—"hypactive."

These examples represent some of the difficulties encountered in developing a scheme for classification of the symptoms, and indicate the variety of syndromes contained within the primary diagnosis of minimal brain dysfunctioning. The following represents an attempt to classify some of the descriptive elements culled from the literature.

PRELIMINARY CATEGORIES OF SIGNS AND SYMPTOMS

A. Test Performance Indicators

1. Spotty or patchy intellectual deficits. Achievement low in some areas; high in others.
2. Below mental age level on drawing tests (man, house, etc.).
3. Geometric figure drawings poor for age and measured intelligence.
4. Poor performance on block design and marble board tests.

5. Poor showing on group tests (intelligence and achievement) and daily classroom examinations which require reading.
6. Characteristic subtest patterns on the Wechsler Intelligence Scale for Children, including "scatter" within both Verbal and Performance Scales; high Verbal—low Performance; low Verbal—high Performance.

B. Impairments of Perception and Concept-formation

1. Impaired discrimination of size.
2. Impaired discrimination of right-left and up-down.
3. Impaired tactile discriminations.
4. Poor spatial orientation.
5. Impaired orientation in time.
6. Distorted concept of body image.
7. Impaired judgment of distance.
8. Impaired discrimination of figure-ground.
9. Impaired discrimination of part-whole.
10. Frequent perceptual reversals in reading and in writing letters and numbers.
11. Poor perceptual integration. Child cannot fuse sensory impressions into meaningful entities.

C. Specific Neurologic Indicators

1. Few, if any, apparent gross abnormalities.
2. Many "soft," equivocal, or borderline findings.
3. Reflex asymmetry frequent.
4. Frequency of mild visual or hearing impairments.
5. Strabismus.
6. Nystagmus.
7. High incidence of left, and mixed laterality and confused perception of laterality.
8. Hyperkinesis.
9. Hypokinesis.
10. General awkwardness.
11. Poor fine visual-motor coordination.

D. *Disorders of Speech and Communication*

1. Impaired discrimination of auditory stimuli.
2. Various categories of aphasia.
3. Slow language development.
4. Frequent mild hearing loss.
5. Frequent mild speech irregularities.

E. *Disorders of Motor Function*

1. Frequent athetoid, choreiform, tremulous, or rigid movements of hands.
2. Frequent delayed motor milestones.
3. General clumsiness or awkwardness.
4. Frequent tics and grimaces.
5. Poor fine or gross visual-motor coordination.
6. Hyperactivity.
7. Hypoactivity.

F. *Academic Achievement and Adjustment* (Chief complaints about the child by his parents and teachers)

1. Reading disabilities.
2. Arithmetic disabilities.
3. Spelling disabilities.
4. Poor printing, writing, or drawing ability.
5. Variability in performance from day to day or even hour to hour.
6. Poor ability to organize work.
7. Slowness in finishing work.
8. Frequent confusion about instructions, yet success with verbal tasks.

G. *Disorders of Thinking Processes*

1. Poor ability for abstract reasoning.
2. Thinking generally concrete.
3. Difficulties in concept-formation.
4. Thinking frequently disorganized.
5. Poor short-term and long-term memory.
6. Thinking sometimes autistic.
7. Frequent thought perseveration.

H. *Physical Characteristics*

1. Excessive drooling in the young child.
2. Thumb-sucking, nail-biting, head-banging, and teeth-grinding in the young child.
3. Food habits often peculiar.
4. Slow to toilet train.
5. Easy fatigability.
6. High frequency of enuresis.
7. Encopresis.

I. *Emotional Characteristics*

1. Impulsive.
2. Explosive.

3. Poor emotional and impulse control.
4. Low tolerance for frustration.
5. Reckless and uninhibited; impulsive then remorseful.

J. *Sleep Characteristics*

1. Body or head rocking before falling into sleep.
2. Irregular sleep patterns in the young child.
3. Excessive movement during sleep.
4. Sleep abnormally light or deep.
5. Resistance to naps and early bedtime, e.g., seems to require less sleep than average child.

K. *Relationship Capacities*

1. Peer group relationships generally poor.
2. Overexcitable in normal play with other children.
3. Better adjustment when playmates are limited to one or two.
4. Frequently poor judgment in social and interpersonal situations.
5. Socially bold and aggressive.
6. Inappropriate, unselective, and often excessive displays of affection.
7. Easy acceptance of others alternating with withdrawal and shyness.
8. Excessive need to touch, cling, and hold on to others.

L. *Variations of Physical Development*

1. Frequent lags in developmental milestones, e.g., motor, language, etc.
2. Generalized maturational lag during early school years.
3. Physically immature; or
4. Physical development normal or advanced for age.

M. *Characteristics of Social Behavior*

1. Social competence frequently below average for age and measured intelligence.
2. Behavior often inappropriate for situation, and consequences apparently not foreseen.
3. Possibly negative and aggressive to authority.
4. Possibly antisocial behavior.

N. *Variations of Personality*

1. Overly gullible and easily led by peers and older youngsters.
2. Frequent rage reactions and tantrums when crossed.
3. Very sensitive to others.

4. Excessive variation in mood and responsiveness from day to day and even hour to hour.
5. Poor adjustment to environmental changes.
6. Sweet and even tempered, cooperative and friendly (most commonly the so-called hypokinetic child).

O. Disorders of Attention and Concentration

1. Short attention span for age.
2. Overly distractible for age.
3. Impaired concentration ability.
4. Motor or verbal perseveration.
5. Impaired ability to make decisions, particularly from many choices.

Several authors note that many of the characteristics tend to improve with the normal maturation of the central nervous system. As the child matures, various complex motor acts and differentiations appear or are more easily acquired.

Variability beyond that expected for age and measured intelligence appears throughout most of the signs and symptoms. This, of course, limits predictability and expands misunderstanding of the child by his parents, peers, teachers, and often the clinicians who work with him.

Ten characteristics most often cited by the various authors, in order of frequency:

1. Hyperactivity.
2. Perceptual-motor impairments.
3. Emotional lability.
4. General coordination deficits.

5. Disorders of attention (short attention span, distractibility, perseveration).
6. Impulsivity.
7. Disorders of memory and thinking.
8. Specific learning disabilities:
 - a. Reading.
 - b. Arithmetic.
 - c. Writing.
 - d. Spelling.
9. Disorders of speech and hearing.
10. Equivocal neurological signs and electroencephalographic irregularities.

The "sign" approach can serve only as a guideline for the purpose of identification and diagnosis.

The protean nature of the disability is the obvious conclusion from the approach to symptomatology and identification taken above.

The situation, however, is not as irremediable as it might appear. Order is somewhat salvaged by the fact that certain symptoms *do* tend to cluster to form recognizable clinical entities. This is particularly true of the "hyperkinetic syndrome," within the broader context of minimal brain dysfunctioning. The "hypokinetic syndrome," primary reading retardation, and to some extent the aphasias, are other such examples.

Recognition and acceptance of these specific symptom complexes as subcategories, within the general category of minimal brain dysfunctioning, would facilitate classification and the development of appropriate management and education procedures.

VII. Diagnostic Evaluation and Criteria

The purposes of the diagnostic evaluation are to demonstrate the existence or absence of minimal brain dysfunction, to determine the causative factors of the past or present environment responsible for this condition, to define the specific limitations of physical or intellectual capabilities present, and thus to establish the basis for a logical program of medical and educational remediation.

Diagnostic confusions have developed from a lack of recognition that differences exist in the objectives of the "medical diagnosis" as opposed to the "educational diagnosis." The objective of the medical diagnosis is to demonstrate the existence of any causative factors of disease or injury capable of amelioration or prevention. The educational diagnosis involves the assessment of performance and capabilities. Its objective is to make possible the establishment of appropriate remedial programs of management and education.

Since the nature and objectives of these two forms of examination are different, the following guidelines for examination include a separate section for each.

GUIDELINES FOR THE DIAGNOSTIC EVALUATION OF DEVIATING CHILDREN

A. MEDICAL EVALUATION

1. HISTORIES:

a. *Medical.*—To include pre-, peri-, and post-natal information. Details of all childhood illnesses should be obtained, including age of child at time of illness, symptoms, severity, course, and care (such as physician in attendance, hospitalization).

b. *Developmental.*—To include details of motor, language, adaptive, and personal-social development.

c. *Family-Social.*—To involve parents, child, and others as indicated. The family-social history should include detailed information regarding family constellation, acculturation factors, spe-

cific interpersonal family dynamics, emotional stresses, and traumata.

2. PHYSICAL EXAMINATION:

a. *General.*—To evaluate general physical status and to search for systemic disease. The physical examination should be done as part of the current evaluation of the child, and not obtained at a previous time for some other purpose, e.g., routine preschool checkup or in conjunction with a previous illness. Many child study clinics obtain a report on the "physical status" of the child from the family physician or pediatrician as a part of the referral policy. It is not uncommon, however, for the physician simply to fill out the requested form from his records on the child without conducting a current examination.

b. *Neurologic.*—To evaluate neurological function and to search for specific disorders of the nervous system. The developmental aspects of neurologic integration assume primary importance for this examination, especially with reference to integrated motor acts as opposed to simple reflexes.

3. SPECIAL EXAMINATIONS:

a. *Ophthalmologic.*—To include visual acuity, fields, and fundi examinations.

b. *Otologic.*—To include audiometric and otoscopic examinations.

4. ROUTINE LABORATORY TESTS:

a. *Serologic.*

b. *Urinalysis.*

c. *Hematologic.*

5. SPECIAL LABORATORY TESTS (Only When Specifically Indicated):

a. *Electroencephalographic.*—To include wake, sleep, and serial tracings.

b. *Radiologic.*

c. *Pneumoencephalographic.*

d. *Angiographic.*

e. *Biochemical.*

f. *Genetic assessment: Chromosome analysis.*

B. BEHAVIORAL ASSESSMENT

1. **ACADEMIC HISTORY.**—To involve child's teachers and principal, with their observations regarding school behavior as well as academic progress and achievement. The child's school records, including samples of schoolwork and test results, should be available to the diagnostic team.
2. **PSYCHOLOGICAL EVALUATION.**—The following items represent the core of the psychological evaluation:
 - a. Individual comprehensive assessment of intellectual functioning.
 - b. Measures of complex visual-motor-perceptual functioning.
 - c. Behavioral observations in a variety of settings.
 - d. Additional indices of learning and behavior as indicated.
3. **LANGUAGE EVALUATION.**—Detailed assessment of speech and language behavior. To include audiometric screening; assessment of articulation, voice quality, and rate; and the expressive and receptive aspects of language.
4. **EDUCATIONAL EVALUATION.**—An educational diagnostician should conduct detailed analyses of academic abilities, including achievement assessment for details of levels and methods of skill acquisition; e.g., reading, number concepts, spelling and writing.

A child has not had the benefit of a complete diagnostic evaluation unless he has had both a medical and a behavioral assessment. The medical evaluation is essential to prevent the development or continuation of unsuspected disease processes. The behavioral assessment provides the basis for a logical management and educational program.

Since various types of diagnosis are involved, a given child may appropriately receive several diagnoses. Additional confusion stems from the present lack of a multidisciplinary approach. The diagnosis which receives emphasis may reflect a number of variables including the following:

1. The diagnostician—his discipline, training, experience, clinical talents; his knowledge and attitudes regarding causes in the production of learning and behavior problems in children.
2. The diagnostic setting—academic or clinical; community child guidance center, community all-purpose mental health clinic, medical center child psychiatry clinic, medical center pediatric clinic, or

private practice. Clinic orientation might emphasize teaching-training, service, or research.

3. The diagnostic procedure—including such aspects as thoroughness and excellence, in terms of time, number, and varieties of techniques and measures utilized and uni- or multiple-disciplinary approach.

Unfortunately, at the present time a lack of scientific knowledge may make it impossible to provide a precise medical or educational diagnosis. Resort must be made to broad and imprecise diagnostic categories. The development of multidisciplinary diagnostic programs and the continuing increase of scientific knowledge will do much to dispel these existing disturbing uncertainties.

We are dealing with a complex and extensive work-up. Few existing clinics are prepared to provide all the services required by this group of children. There are great advantages in consolidation of effort and concentration of facilities in a single environment.

A more detailed consideration of the means by which these needs are to be met and of the specific management and educational programs which will be required is the subject of a further study to be carried out by Task Force II of this mission. The mission of this task force has been defined as follows:

Task Force II will be responsible for consideration of services including those necessary and desirable to diagnose the medical and health-related problem and to identify the methods of determining educational performance capability and ways of educating afflicted children. The two aspects of the problem are education, and medical and health-related services.

1. Relative to the educational aspects of the problem, the task force will concern itself with problems of educational identification, assessment and evaluation, teaching of children with minimal brain dysfunction, educational techniques and methodologies involved, preparation and certification of teachers, responsibility of the public school system for educating these children, guidance of parents in managing children at home, and public education as it relates to the introduction into society of children with minimal brain dysfunction.

2. Relative to the medical and health-related aspects, the task force will concern itself with methods of identification of children with minimal brain dysfunction, diagnostic services required for obtaining adequate knowledge of the child's ability to perform, and the development of guidelines to be used by appropriate professional persons in conducting and carrying out services necessary to proper management of the child with minimal brain dysfunction.

VIII. Bibliographies

SECTION BIBLIOGRAPHIES

References 1 through 31 are cited in Section III, A Brief History of the Concept of Brain Damage.

1. BURR, C. W. The nervous child, N.Y. Med. J., 114: 205, 1921.
2. MILES, R. S. Common nervous conditions of children. Arch. Pediat., 38: 664, 1921.
3. KRAMER, F., and POLLNOW, H. Über eine hyperkinetische erkrankung im kindesalter, Monatschr. f. Psychiat. u. Neuro., 82: 1-40, 1932.
4. KAHN, E., and COHEN, L. H. Organic drivenness—a brain-stem syndrome and an experience, N. Eng. J. Med., 210: 748-756, 1934.
5. BENDER, L. Psychological problems of children with organic brain disease, Amer. J. Orthopsychiat., 19: 404-441, 1949.
6. BENDER, L. Psychopathology of Children with Organic Brain Disorders. Charles C Thomas, 1959.
7. GOLDSTEIN, K., and SCHEERER, M. Abstract and concrete behavior, Psychol. Monogr., 53: No. 2, 1941.
8. GOLDSTEIN, K. Aftereffects of Brain-Injuries in War. Grune and Stratton, 1942.
9. ORTON, S. Reading, Writing, and Speech Problems in Children. W. W. Norton & Co., 1937.
10. BLAU, A. Mental changes following head trauma in children, Arch. Neurol. Psychiat., 35: 723-769, 1937.
11. BOND, E. Postencephalitic, ordinary and extraordinary children, J. Pediat., 1: 310-314, 1932.
12. HOHMAN, L. B. Postencephalitic behavior disorders in children, Johns Hopkins Hosp. Bull., 33: 372-375, 1922.
13. JOHNSON, E. A study of psychological findings of 100 children recovering from purulent meningitis, J. Clin. Psychol., 16: 55-58, 1960.
14. LURIE, L. A., and LEVY, S. Personality changes and behavior disorders of children following pertussis—report based on study of 500 problem children, J.A.M.A., 120: 890-894, 1942.
15. RIMLAND, B. Infantile Autism—The Syndrome and its Implications for a Neural Theory of Behavior. Appleton-Century-Croft, 1964.
16. MONEY, J. Cytogenetic and psychosexual incongruities with a note on space-form blindness, Am. J. Psychiat., 119: 820-827, 1963.
17. PASAMANICK, B., and KNOBLOCH, H. Brain damage and reproductive casualty, Amer. J. Orthopsychiat., 30: 299-305, 1960.
18. SHAFER, J. A specific cognitive deficit observed in gonadal aplasia (Turner's syndrome), J. Clin. Psychol., XVIII: 403-406, 1962.
19. SHERMAN, M., and BEVERLY, B. I. The factor of deterioration in children showing behavior difficulties after epidemic encephalitis, Arch. Neuro. Psychiat., 10: 329-343, 1923.
20. THURSTON, D., MIDDLEKAMP, J., and MASON, E. The late effects of lead poisoning, J. Pediat., 47: 413-423, 1955.
21. WAGENHEIM, L. The effect of childhood disease on IQ variability, J. Consult. Psychol., 18: 354, 1954.
22. GESELL, A., and AMATRUDA, C. Developmental Diagnosis, Paul B. Hoeber, Inc., 1941.
23. WERNER, H., and STRAUSS, A. Pathology of figure ground relation in the child, J. Abnorm. Soc. Psychol., 36: 58-67, 1941.
24. WERNER, H., and THUMA, B. A deficiency in the perception of apparent motion in children with brain injury, Amer. J. Psychol., 55: 58-67, 1942.
25. WERNER, H., and WEID, A. The figure-ground syndrome in the brain-injured child, Int. Record of Med. Gener. Pract. Clinics, 169: 362-367, 1956.
26. STRAUSS, A. A., and WERNER, H. Disorders of conceptual thinking in the brain-injured child, J. Nerv. Ment. Dis., 96: 153-172, 1942.
27. STRAUSS, A. A. Ways of thinking in brain-crippled deficient children, Amer. J. Psychiat., 100: 639-647, 1944.
28. STRAUSS, A. A., and LEHTINEN, L. Psychopathology and Education of the Brain Injured Child. Grune & Stratton, 1947. Serves as vol. I.
29. STRAUSS, A. A., and KEPHART, N. Psychopathology and Education of the Brain Injured Child: Vol. II, Progress in Clinic and Theory. Grune & Stratton, 1955. Cataloged under Strauss and Lehtinen.
30. Brain Damage in Children—The Biological and Social Aspects; ed. by Herbert G. Birch. Williams and Wilkins Co., 1964.
31. MASLAND, R., SARASON, S., and GLADWIN, T. Mental Subnormality. Basic Books, Inc., 1958.

References 32 through 59 are cited in Section V, Nomenclature.

32. STEVENS, G. D., and BIRCH, J. W. A proposal for clarification of the terminology used to describe brain-injured children, Except. Children, 23: 346-349, 1957.

33. ANDERSON, C., and PLYMATE, H. Management of the brain damaged adolescent, *Amer. J. Orthopsychia.*, 32: 492-501, 1962.
34. SILVER, A. Diagnosis and prognosis of behavior disorder associated with organic brain disease in children, *J. Insurance Med.*, 6: 38-42, 1951.
35. BRADLEY, C. Characteristics and management of children with behavior problems associated with organic brain damage. *Pediatric Clinics of North America*, pp. 1049-1060, November 1957.
36. BURKS, H. The effect on learning of brain pathology. *Except. Child.*, 24: 169-172, 1957.
37. CLEMENTS, S. D., and PETERS, J. E. Minimal brain dysfunctions in the school-age child, *Arch. Gen. Psychiat.*, 6: 185-197, 1962.
38. CLEMMENS, R. Minimal brain damage in children—an interdisciplinary problem, *Children*, 8: 179-183, 1961.
39. DARYN, E. Problems of children with diffuse brain damage. *Arch. Gen. Psychiat.*, 4: 299-306, 1961.
40. DOLL, E. A. Behavior syndromes of CNS impairment, in *The Exceptional Child*, ed. by J. Magary and J. Eichorn, Holt, Rinehart, and Winston, Inc., 1960.
41. LAUFER, M. W. Cerebral dysfunction and behavior disorders in adolescents. *Amer. J. Orthopsychiat.*, 32: 501-507, 1962.
42. MILMAN, D. Organic behavior disorder: behavior characteristics of brain-damaged children, *A.M.A. J. Diseases Child.*, 91: 521-528, 1956.
43. PRECHTL, H. F. R., and STEMMER, C. The choreiform syndrome in children, *Dev. Med. Child Neuro.*, 4: 119, 1962.
44. EISENBERG, L. Psychiatric implications of brain damage in children, *Psychiat. Quart.*, 31: 72-92, 1957.
45. PAINE, R. Minimal chronic brain syndromes in children, *Dev. Med. Child Neuro.*, 4: 21-27, 1962.
46. KNOBLOCH, H., and PASAMANICK, B. Syndrome of minimal cerebral damage in infancy, *J.A.M.A.*, 170: 1384, 1959.
47. WIGGLESWORTH, R. Minimal cerebral palsy, *Cer. Pal. Bull.*, 3: 293, 1961.
48. DENOFF, E., LAUFER, M., and HOLDEN, R. The syndromes of cerebral dysfunction, *J. Okla. State Med. Assoc.*, 52: 360-366, 1959.
49. FROSCH, J., and WORTIS, S. A contribution to the nosology of the impulse disorders, *Am. J. Psychiat.*, 111: 132, 1954.
50. LAUFER, M., and DENOFF, E. Hyperkinetic behavior syndrome in children, *J. Ped.*, 50: 463-474, 1957.
51. MORRIS, H., ESCOLL, P., and WEXLER, R. Aggressive behavior disorders of childhood: a follow up study, *Am. J. Psychiat.*, 112: 991, 1956.
52. MYKELBUST, H., and BOSHE, B. Psychoneurological learning disorders in children, *Arch. Pediat.*, 77: 247-256, 1960.
53. OUNSTED, C. The hyperkinetic syndrome in epileptic children, *Lancet*, 2: 303-311, 1955.
54. PARK, G. Mirror and reversed reading, *J. Pediat.*, 42: 120-128, 1953.
55. SILVER, A. A. Behavioral syndrome associated with brain damage in children, *Pediatric Clinics of North America*, pp. 687-698.
56. RABINOVITCH, R., DREW, A., DE JONG, R., INGRAM, W., and WITHEY, L. A research approach to reading retardation, *Res. Publ. Assoc. for Res. Nerv. Ment. Dis.*, 34: 363, 1954.
57. HERMANN, K. Reading Disability. Charles C Thomas, Publishers, 1959.
58. WALTON, J., ELLIS, E., and COURT, S. Clumsy children: a study of developmental apraxia and agnosia, *Brain*, 85: 603-612, 1962.
59. CLEMENTS, S. D., LEHTINEN, L. E., and LUKENS, J. E. Children with minimal brain injury—a symposium. National Society for Crippled Children and Adults, Inc., 1964.

References Not Cited in Article

60. ANDERSON, C. M. Early Brain Injury, *J. Amer. Women's Med. Assoc.* 11: 113-119, 1956.
61. ANDERSON, C. M., and PLYMATE, H. B. Management of the brain-damaged adolescent, *Amer. J. Orthopsychiat.*, 32: 492-501, 1962.
62. BAKER, H. J. Introduction to Exceptional Children. Macmillan Co., 1959.
63. BAKWIN, R. M. Diagnostic approach to behavior disorders in children, *J. Amer. Women's Med. Assoc.*, 14: 786-791, 1959.
64. BAKWIN, H., and BAKWIN, R. M. Clinical management of behavior disorders in children. W. B. Saunders Co., 1953.
65. BELMONT, I., and BIRCH, H. G., KLEIN, D., and POLLACK, M. Perceptual evidence of CNS dysfunction in schizophrenia, *Arch. Gen. Psychiat.*, 10: 395-408, 1964.
66. BENTON, P. C. Organic behavior disorders in children, *J. Okla. State Med. Assoc.*, 54: 481-485, 1961.
67. BIRCH, H. G. (ed.) Brain Damage in Children—the Biological and Social Aspects, Williams and Wilkins Co., 1964.
68. CHES, S. Diagnosis and treatment of the hyperactive child, *N.Y. State J. Med.*, 60: 2379-2385, 1960.
69. CHILDERS, A. T. Hyperactivity in children having behavior disorders, *Amer. J. Orthopsychiat.*, 5: 227-243, 1935.
70. CLARK, R. M. Language and behavior of children with unsuspected brain injury, *Logos*, 5: 22-24, 1962.
71. COHEN, L. Perception of reversible figures after brain injury, *Arch. Neuro. and Psychiat.*, 81: 765-775, 1959.
72. CROWELL, D. H. Children with brain pathology, *Clinical Psychology of Exceptional Children*, ed. Louttit, C. M., Harper, 1936.
73. CRUICKSHANK, W. M., BONTZEN, F. A., RATEBURY, F. H., and TANNHAUSER, M. T. A Teaching Method for Brain Injured and Hyperactive Children. Syracuse University Press, 1961.
74. DOLL, E. A. Neurophrenia, *Amer. J. Psychiat.*, 108: 5053, 1951.
75. DUNN, L. M. Educable Mentally Retarded Children, Exceptional Children in the Schools, Holt, Rinehart, and Winston, 1963.
76. EISENBERG, L. Dynamic considerations underlying the management of the brain-damaged child, *GP*, 14: 101-106, 1956.

77. ELIZUR, A. A combined test used for the diagnosis of organic brain condition, *Arch. Neuro. and Psychiat.*, 81: 776-789, 1959.
78. EWALT, J. R. Organic behavior problems, *Texas Reports on Biol. and Med.*, 3: 247-252, 1945.
79. FOURACRE, M. H. Learning characteristics of brain-injured children, *Except. Children*, pp. 210-211, January 1958.
80. FREIDUS, E. S. New approaches in special education of the brain-injured child, *New Jersey Assoc. for Brain Injured Children*.
81. GOLDBERG, H. K. The ophthalmologist looks at the reading problem, *Amer. J. Ophthalmology*, 47: 67, 1959.
82. GOLDBERG, H., MARSHALL, C., and SIMS, E. The role of brain damage in congenital dyslexia, *Am. J. Ophthalmology*, 50: 586-590, 1960.
83. HAMMOND, J. E. Learning and behavior problems of children, *Virginia Med. Monthly*, 89: 379-385, 1962.
84. INGRAM, T. T. S. A characteristic form of overactive behavior in brain damaged children, *J. Ment. Sci.*, 102: 550-558, 1956.
85. KALISKI, L. Specific problems in arithmetic in the brain-injured child, *Bull. Orton Soc.*, XI: 1961.
86. KALISKI, L. The brain-injured child—learning by living in a structured setting, *Amer. J. Ment. Def.*, 63: 688-695, 1963.
87. KARLIN, I. W. Aphasia in children, *Am. J. Diseases of Children*, 87: 752, 1954.
88. KENNARD, M. Value of equivocal signs in neurologic diagnosis, *Neurology*, 10: 1960.
89. KENNARD, M. Behavior problems and the brain injured child, *Northwest Med.*, 58: 1535-1541, 1959.
90. KNOBEL, M. A syndromic approach to acting-out children, *Diseases of the Nerv. System*, XX 1(2): 80, 1959.
91. KNOBEL, M., WOLMAN, M. B., and MASON, E. *Arch. Gen. Psychiat.*, 1: 310-321, 1959.
92. KRUPP, G. R., and SCHWARTZBERG, B. The brain-injured child—a challenge to social workers, *Social Casework*, February 1960.
93. LAUFER, M. W. Problems of cerebral dysfunctions, *New York Assoc. for Brain-injured Children*.
94. LAUFER, M. W., DENHOFF, E., and SOLOMONS, G. Hyperkinetic impulse disorder in children's behavior problems, *Psychosom. Med.*, 19: 38, 1957.
95. LAWRENCE, M. M. Minimal brain injury in child psychiatry, *Comprehensive Psychiat.*, 1: 360, 1960.
96. LEVY, S. Postencephalitic behavior disorder—a forgotten entity, a report of 100 cases, *Am. J. Psychiat.*, 115: 1062, 1959.
97. LEWIS, R. S., STRAUSS, A. A., and LEHTINEN, L. E. The other child, *Grune and Stratton*, 1960.
98. LURIE, L. A. The medical approach to the study of behavior disorders of children, *Am. J. Psychiat.*, 91: 1379, 1935.
99. McHUGH, E. E. The brain-injured child with impaired hearing, *Laryngoscope*, 71: 1034, 1961.
100. MILLER, B. J. A parent's view, *The Child with Brain Damage, Assoc. for Aid of Crippled Children*, 1959.
101. MONEY, J. (ed): *Reading Disability—Progress and Research Needs in Dyslexia*, The Johns Hopkins Press, 1962.
102. MYKELBUST, H. *Training Aphasic Children*, The Volta Bureau.
103. MYKELBUST, H., and JOHNSON, D. Dyslexia in children, *Except. Children*, 29: 15, 1962.
104. NORTH, H. M. The nervous child, *Med. J. of Australia*, 1: 612, 1953.
105. ORTON, S. *Developmental Apraxia*, Bull. Orton Society, IV: 1954.
106. PACELLA, B. L. Behavior problems in children, *Med. Clinics of No. Amer.*, 1948.
107. PAINE, R. S. Contributions of neurology to the pathogenesis of hyperactivity in children, *Clin. Proceedings of Children's Hospital, Washington, D.C.*, 19: 235, 1963.
108. PAINE, R. S. Symptomatology of unrecognized chronic brain syndromes of children, *J. Maine Med. Assoc.*, 53: 84, 1962.
109. PAINE, R. S. Minimal chronic brain syndromes in children, *Dev. Med. and Child Neuro.*, 4: 21, 1962.
110. PRECHTL, H. F. R. The mother-child interaction in babies with minimal brain damage (a followup study), presented at Tavistock Study Group, London, Sept. 5, 1961.
111. ROBB, P. Neurological aspects of reading disabilities, in *Reading for Effective Living*, ed. by J. A. Figurel. International Reading Association Conference Proceedings, vol. 3, pp. 116-119, 1958.
112. RUSSELL, J. A. The hyperactive child, *Am. J. Diseases of Children*, 63: 94, 1942.
113. SCHNEIDER, W. F. Psychiatric evaluation of the hyperkinetic child, *J. Ped.*, 26: 559, 1945.
114. SCHROEDER, P. L. Behavior difficulties in children associated with the results of birth trauma, *J.A.M.A.*, 92: 110, 1929.
115. SCHWADE, E. D., and GEIGER, S. G. Abnormal electroencephalographic findings in severe behavior disorders, *Diseases Nervous System*, 17: 307, 1956.
116. SIEGEL, E. *Helping the Brain Injured Child*, N.Y. Assoc. for Brain Injured Children, 1961.
117. SILVER, A. A., and HAGIN, R. Specific reading disability: Delineation of the syndrome and relationship to cerebral dominance, *Comprehensive Psychiat.*, 1: 126, 1960.
118. STRAUSS, A. A., and WERNER, H. The mental organization of the brain injured mentally defective child, *Am. J. Psychiat.*, 97: 1194, 1941.
119. THELANDER, H. E., PHELPS, J. K., and KIRK, E. W. Learning disabilities associated with lesser brain damage, *J. Ped.*, 53: 405, 1958.
120. TIMME, A. R. The choreiform syndrome, *Calif. Med.*, 68: 154, 1948.
121. WOOD, NANCY E. Evaluation of language disorders in children of school age, *Speech and Language Therapy with the Brain-Damaged Child*, ed. Daley, Catholic Univ. of America Press, 1962.
122. WOOD, N. E. Language disorders: Major barriers to communication, *School Life*, June 1961.
123. WORTIS, J. A note on the concept of the "brain-injured child," *Am. J. Ment. Defic.*, 61: 204, 1956.
124. WYLLIE, W. G. Behavior problems and the backward child, *Lancet*, 224: 1247, 1933.

[Telegram]

SALEM, OREG., June 27, 1967.

Senator WAYNE MORSE,
U.S. Senate, Washington, D.C.:

As legislative chairman for the Council of Exceptional Children, Oregon Federation, am speaking for the State membership. I solicit your support for Senate bills 1125 and 1126. Our organization is vitally concerned that the handicapped amendment along with Teacher Corp training bill will become a reality and the proposed facilities and programs will be facilitated.

GERALD BUCHAN,
Legislative Chairman,
CEC, Oregon Federation.
KNUTE ESPESETH,
President, CEC,
Oregon Federation.

[Telegram]

PORTLAND, OREG., June 28, 1967.

Senator WAYNE MORSE,
U.S. Senate, Washington, D.C.:

We encourage your continued support on the amendments to the handicapped child bill. A regional resource center would provide for a tremendous impact on this area's educational programs for handicapped children.

KEITH H. LARSON,
Coordinator, Special Education Programs.

[Telegram]

EUGENE, OREG., June 27, 1967.

Senator WAYNE MORSE,
New Senate Office Building,
Washington, D.C.:

Congratulations regarding the amendment for education of the handicapped. Support for the development of educational resource centers is of specific import. Educational resource center located at the University of Oregon would provide a significantly improved base for serving the handicapped programs of our area. Please let us know when action is confirmed on the bill so we can move ahead as rapidly as possible in this direction.

Dr. MELTON V. MARTINSON,
University of Oregon,
Director of Materials Center.

APPENDIX G

Publications of the Office of Education, 1967

Prepared by Bobbie Doud
Publications Division

U.S. Department of Health, Education, and Welfare

JOHN W. GARDNER, *Secretary*

OFFICE OF EDUCATION

HAROLD HOWE II, *Commissioner*

Printed March 1962

Reprinted May 1962

Revised June 1963

Revised June 1966

Revised May 1967

FOREWORD

This catalog identifies all Office of Education publications currently available for purchase from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Other publications available for limited free distribution are listed in the back. Single copies of the free Publications are available on request from the Publications Distribution Unit, Office of Education, Washington, D.C. 20202.

The list contains approximately 524 titles. Included are many new ones, as well as recent editions of surveys which the Office of Education has been conducting annually since 1869 to provide data and projections on finance, enrollment, staff, curriculum, and facilities of public schools, colleges, and universities for the benefit of persons interested in the status of education.

Through these publications the Office seeks to fulfill an important part of its responsibilities for describing the condition and needs of education throughout the United States.

L. V. GOODMAN

Assistant Commissioner for Public Information

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PUBLICATIONS
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1957

A series of publications have been issued by the Office of Education, Department of the Interior, Bureau of Indian Affairs, for the purpose of providing information to the public regarding the activities of the Bureau. These publications are available for sale at a nominal price and are intended to be of interest to all who are concerned with the welfare of the Indian people.

The first publication in the series is a booklet entitled "The Indian Child Welfare Act of 1956". This booklet is intended to provide information to the public regarding the provisions of this Act and the role of the Bureau of Indian Affairs in its implementation.

The second publication in the series is a booklet entitled "The Indian Education Act of 1956". This booklet is intended to provide information to the public regarding the provisions of this Act and the role of the Bureau of Indian Affairs in its implementation.

The third publication in the series is a booklet entitled "The Indian Health Act of 1956". This booklet is intended to provide information to the public regarding the provisions of this Act and the role of the Bureau of Indian Affairs in its implementation.

GENERAL PUBLICATIONS

13000-13999

Adult Education

FS 5.3:958/11

Education on the Aging. Betty Arnett Ward. 1958. 145 p. 60¢

An annotated bibliography of references helpful in developing an understanding of the needs and interests of older adults, and of professional development and other educational programs and services.

FS 5.213:13000

Adult Education in Public Schools, 1940-1956: Data on Enrollment, Instructional Personnel, and Expenditures. Marthine V. Woodward. 1960. 14 p. 20¢

Draws on previously published statistics such as the Biennial Survey of Education in the United States.

FS 5.213:13009

Statistics of Public School Adult Education, 1958-59. Marthine V. Woodward. 1961. 49 p. 40¢

A survey of adult education programs administered by local public school systems. Contains data on enrollment, group activities, personnel, funds, and co-sponsorship with other community institutions.

FS 5.213:13017

Literacy and Basic Elementary Education for Adults: A Selected Annotated Bibliography. Betty Arnett Ward and Edward Warner Brice. 1961. 126 p. 55¢

A list of publications on adult fundamental and literacy education programs in the United States and abroad.

FS 5.213:13029

Educationally Deficient Adults: Their Education and Training Needs. 1965. 60 p. 40¢

Findings of a study of educational and training needs of educationally deficient adults, conducted jointly by the Information and Training Services, a Division of McGraw-Hill, Inc., and the U.S. Office of Education, Division of Vocational and Technical Education.

FS 5.213:13032

Curriculum Guide to Adult Basic Education: Beginning Level. 1966. 352 p. \$2.25

Suggested basic course in reading, writing, spelling, listening, speaking, and arithmetic and enrichment materials. Intended for use by teachers, supervisors, and administrators in initiating or developing instructional programs for adults who wish to acquire the basic educational skills.

14000-14999

International

FS 5.3:957/2

Austrian Teachers and Their Education Since 1945. Helen C. Lahey. 1957. 82 p. 35¢

Describes the reconstruction of schools and teacher education in Austria following World War II.

FS 5.214:14034-67

Information on Education around the World, Educational Data: Cuba. Charles C. Hauch. 1933. 18 p. 15¢

A brief report showing changes made or projected in the educational system since the beginning of the new administration.

FS 5.214:14034-74

Information on Education Around the World, Educational Data: Algeria. Anne N. Forrester and Charles C. Hauch. 1964. 13 p. 15¢

Discusses the Algerian educational system under the French administration and changes that have been made in the system since Algeria became an independent state.

FS 5.214:14034-75

Information on Education Around the World, Educational Data: Swiss Confederation. 1964. 19 p. 15¢

Describes types of schools and subjects offered at elementary, secondary, and university levels. Includes sections on vocational, teacher, and adult education.

FS 5.214:14034-77

Burma, Educational Data. Kenneth L. Neff. 1965. 14 p. 15¢

A brief report of the educational system prior to the country's independence and the present system of education.

FS 5.214:14034-78

Sweden, Educational Data. Margaret L. King and George A. Male. 1965. 35 p. 20¢

History of the country's education, from preschool to vocational, teacher, and adult education.

FS 5.214:14034-79

Education in Spain, Educational Data. Ellen M. Doherty and George A. Male. 1966. 36 p. 20¢

Explores the education system in Spain. Tables give information about the curriculum at all levels of education and hours per week, by subject and course. Tables also give enrollment data.

FS 5.214:14037

Soviet Education Programs. William K. Medlin, Clarence B. Lindquist, and Marshall L. Schmitt. 1960. 283 p. \$1.25

Reports the findings of three specialists sent to the U.S.S.R. by the Office of Education in 1959 to study teaching methods, facilities, and student performance in certain areas of the Soviet school system, particularly science, mathematics, and polytechnical instruction in the general schools. Includes a section on teacher education.

FS 5.214:14038-63

Teaching About the United Nations in the United States: January 1, 1960 through December 31, 1963. 1964. 110 p. 50¢

Covers teacher training, the treatment of the UN in textbooks and teaching materials, and suggestions for class and extracurricular activities to encourage teachers and other leaders to improve and intensify their work in the international sphere.

FS 5.214:14039

Education for Africans in Tanganyika. Betty George. 1960. 97 p. 40¢

Discusses a projected expansion of educational facilities in the trust territory scheduled for self-government.

FS 5.214:14046-63

The Technical Assistance Training Program in Education, Fiscal Years 1961, 1962, 1963. 1965. 134 p. \$1

Summarizes training activities of foreign countries participating in this program, administered by the U.S. Office of Education in cooperation with the International Cooperation Administration.

FS 5.214:14052

National Higher Technical Education in Indonesia: Recent Trends. Kenneth L. Neff. 1961. 67 p. 45¢

Traces the development of higher technical education from the Dutch colonial period to the present. Compares the attitudes of students under free-study and guided-study programs at institutions of higher education.

FS 5.214:14066

International Education Exchange: A Selected Bibliography. Thomas E. Cotner. 1961. 117 p. 50¢

Lists bibliographies in related fields and publications concerning international fellowships, scholarships, and exchange-of-person programs, as well as publications useful in counseling and program planning for foreign visitors.

FS 5.214:14071

Selected Bibliography on Education in Southeast Asia. Kenneth L. Neff. 1963. 16 p. 15¢

All materials listed are in a Western language, and many are available for sale or loan in the United States. Included are annual reports of education ministries when made available to the compiler.

FS 5.214:14078

Brazil: Education in an Expanding Economy. Augustus F. Faust. 1959; reprinted 1962. 142 p. 50¢

The author, who lived in Brazil for 3 years, characterizes the new dimensions of the country's educational system.

FS 5.214:14079

Soviet Training Programs for Africa. Seymour M. Rosen. 1963. 13 p. 15¢

A brief description of three types of program, plus a table showing the 6-year curriculum for Specialty in Eastern Languages and Literature, Institute of Eastern Languages, and excerpts from an account of these training programs by the Africa Institute in Moscow.

FS 5.214:14080

The Current Situation in Latin American Education. Charles C. Hauch. 1963. 30 p. 15¢

A review of current information on the needs, problems, and progress of education in Latin America, in an historical setting.

FS 5.214:14082

Higher Education in Poland. Part 1: Organization and Administration. Seymour M. Rosen and Nellie Apanasewicz. 1963. 37 p. 20¢

Designed, like its forthcoming sequel, *Studies and Students*, to supply basic current information, the publication is based in part on the authors' visit to Poland in 1961. An appendix lists institutions of higher education and their faculties.

FS 5.214:14085

Fine Arts Education in the Soviet Union. Mayo Bryce. 1963. 74 p. 50¢

A report based on impressions gathered by the author in visits to schools in Moscow and Leningrad specializing in fine arts education, and through interviews with Soviet officials, educators, and artists. Tables show programs of study in the various arts available in general and special schools.

FS 5.214:14087

Education in the Rumanian People's Republic. Randolph L. Braham. 1963. 229 p. \$1

An analysis of the country's educational system. Statistical tables show changes in Rumanian education between 1959-60 and 1961-62.

FS 5.214:14089

Education in Yugoslavia and the New Reform. Vera Tomich. 1963. 146 p. 60¢

Outlines how the General Law on Education of 1958 altered and expanded the country's educational system. Tables give data on illiteracy, adult education, enrollment, and curriculums, including vocational training; charts show how schools are administered at national and republic levels.

FS 5.214:14093

Educational Research in Norway in the Twentieth Century. Jons Sandven. 1963. 31 p. 20¢

Describes the evolution of education into an area of serious research at the university level.

FS 5.214:14094

Structure and Decision-Making in Soviet Education: Studies in Comparative Education. Herbert C. Rudman. 1964. 64 p. 25¢

A report based on data gathered by the author while in the Soviet Union in 1962. Explains the functioning of the Soviet system of higher education and how decisions are made at the ministerial level.

FS 5.214:14097

Welcome, Stranger! 1964. 7 p. 10¢

Offers suggestions for schools and communities receiving visiting educators from abroad.

FS 5.214:14098

Progress and Trends in Italian Education. Anthony A. Scarangelo. 1964. 35 p. 20¢

Provides informative background on the early history of Italian education, and describes the efforts of the government and educators to reestablish a modern education system following World War II.

FS 5.214:14099

Higher Education in Poland, Part II: Rules of Admission, Student Activities, and Curriculums. Seymour M. Rosen and Nellie Apanasewicz. 1964. 81 p. 40¢

Explains the functioning of higher institutions, the control of the Ministry of Higher Education and of other ministries, and enumerates significant plans for reform in the higher education system.

FS 5.214:14100

Half-Work, Half-Study Schools in Communist China. Robert D. Barndsen. 1964. 56 p. 25¢

Presents information concerning experimentation with self-supporting half-work, half-study schools at two academic levels in Communist China.

FS 5.214:14101

Soviet Education: A Bibliography of English-Language Materials. Nellie Apanasewicz and Seymour M. Rosen. 1964. 42 p. 20¢

Includes 281 titles within 78 subject categories to provide researchers, analysts, teachers, and advanced students interested in Soviet education with a body of reference materials.

FS 5.214:14102

Spare-Time Education for Workers in Communist China: Studies in Comparative Education. Paul Harper. 1964. 29 p. 20¢

An exploratory analysis of the industry-centered, spare-time school system. This study is part of a continuing research program designed to contribute to a clearer understanding of educational developments in Communist China.

FS 5.214:14103

Education in Uganda. David Scanlon. 1964. 115 p. 50¢

Describes various levels and types of education in Uganda with emphasis upon curriculum and course content.

FS 5.214:14105

Education in New Zealand: Studies in Comparative Education. Marcia T. Berrien. 1964. 87 p. 35¢

The country's educational scene and system, from preprimary education to technical, vocational, and adult education.

FS 5.214:14106

Moscow in May 1963. Oliver J. Caldwell and Loren R. Graham. 1964. 49 p. 25¢

Represents an interchange of American and Soviet ideas on education, programed learning, cybernetics, and the human mind.

FS 5.214:14107

Soviet Teaching and Research in Economics: Studies in Comparative Education. Ralph H. Blodgett and Martin Schnitzer. 1964. 28 p. 15¢

Describes the Soviet Russian economists and their work in research, teaching, and consulting.

FS 5.214:14109

Educational Developments in the Congo (Leopoldville). Betty George. 1966. 196 p. 70¢

Deals with education in the Republic of the Congo (Leopoldville). Describes the educational system developed for Congolese during the colonial period and reviews postindependence educational developments that will affect the course of events in the country's future.

FS 5.214:14010

The Development of Education in Nepal: Studies in Comparative Education. Hugh B. Wood. 1965. 78 p. 30¢

This study was drawn from the author's personal experience and research while in Nepal as an Educational Adviser for six years after the new government was created.

FS 5.214:14111

Chile—Education and Social Change. Clark C. Gill. 1966. 143 p. 55¢

Field study on recent Chilean educational developments. Seeks to interpret them against a broad background of social and economic change.

FS 5.214:14102

Significant Aspects of Soviet Education. Seymour M. Rosen. 1965. 23 p. 15¢

A brief overall view of the Soviet education system, plus particular elements of the system about which U.S. educators have expressed specific interest.

FS 5.214:14113

Part-Time Education in the U.S.S.R. Seymour M. Rosen. 1965. 141 p. 55¢

Reports the findings of a three-member team sent to the U.S.S.R. by the U.S. Office of Education in 1963 to study the system of part-time education, to discuss the program with working education officials, and to visit schools and classrooms.

FS 5.214:14114

Overseas Chinese Education in Indonesia: Studies in Comparative Education. Marilyn W. Clark. 1965. 56 p. 25¢

Traces the development of educational facilities for the Chinese minority in Indonesia from the Dutch colonial period to the early 1960's. Demonstrates the extent to which education has been instrumental in and responsive to the economic, political, and social roles of the "overseas" Chinese community.

FS 5.214:14115

Education in Bulgaria: Studies in Comparative Education. Nellie Apanasewicz and Seymour M. Rosen. 1965. 27 p. 15¢

Shows the change and expansion in types of schooling in Bulgaria from the early 20th century to the revision and reorganization along Soviet lines following World War II.

FS 5.214:14119

Higher Educational Reforms in the Republic of Korea: Studies in Comparative Education. Don Adams. 1965. 63 p. 30¢

Focuses on the changes of organizational structure and instructional programs in the field of higher education in the Republic of Korea since the fall of the Rhee government in the spring of 1960.

FS 5.214:14122

Higher Educational Institutions in Taiwan. Robert D. Barendsen. 1966. 31 p. 20¢

Presents an up-to-date picture of the status of higher educational institutions and their structure in Taiwan.

FS 5.214:14123

Textbooks for Soviet Schools. Nellie Apanasewicz and Seymour M. Rosen. 1966. 14 p. 15¢

Bibliography of textbooks used in Soviet schools. Useful for researchers interested in making comparative curriculum studies.

FS 5.214:14124

Social Science in Soviet Secondary Schools: Syllabus of the New Course. 1966. 23 p. 15¢

Part I of the report provides a brief background on the development of the course, its aims and political significance, and requirements for the ideological indoctrination of teachers. Part II represents the English translation of the original text of the course syllabus as published by the Soviet Government.

FS 5.214:14125

Israel: A Modern Education System. Randolph L. Braham. 1966. 186 p. 70¢

Provides an overview of the educational system of modern Israel in its historical, societal, and cultural setting with emphasis on secondary and teacher education.

FS 5.214:14126

Final Examination in the Russian Ten-Year School. Nellie Apanasewicz and Seymour M. Rosen. 1966. 20 p. 15¢

This publication may be of special interest to persons who are concerned with testing methods and standards of achievement and to students of comparative education.

15000-15999

Library Services

FS 5.215:15022

Statistics of Libraries: An Annotated Bibliography. John Carson Rather and Nathan M. Cohen. 1961; reprinted 1963. 50 p. 25¢

Published sources of recurring surveys: 44 with regional or national coverage, by type of library; 112 that are confined to one State, by State. A detailed index serves as a guide to the contents of the publications.

FS 5.215:15025

The Public Library for Lifelong Learning. Helen E. Wessels. 1961; reprinted 1963. 36 p. 20¢

Answers some questions often raised about how the American public library serves as an educational agency.

FS 5.215:15031-60

Library Statistics of Colleges and Universities, 1959-60. Part 2: Analytic Report. Barbara Denison and Doris C. Holladay. 1962. 40¢

The first of a series of analytic summaries of management and salary data on libraries of higher education institutions, by type of institution and control, by enrollment size and control, and by salaries for individual library positions. Intended as an aid in administering and developing libraries.

FS 5.215:15042

The School Library as a Materials Center. Mary Helen Mahar, ed. 1963. 84 p. 50¢

Report of a conference which considered new requirements for the training of librarians and teachers in organizing and using the school library as a materials center.

FS 5.215:15048

Survey of School Library Standards. Richard L. Darling. 1965. 181 p. \$1.25

Provides an up-to-date compilation of school library standards and an analysis of trends.

FS 5.215:15049

Statistics of Public School Libraries, 1960-61, Part 1, Basic Tables. Mary Helen Mahar and Doris C. Holladay. 1964. 90 p. 60¢

Report continues the series of periodic general surveys of public school libraries in the United States. Data include aspects of school library service—school library supervision and centralized processing services administered by boards of education.

FS 5.215:15050

Library Facilities for Elementary and Secondary Schools. James L. Taylor, Mary Helen Mahar, and Richard L. Darling. 1965. 43 p. 40¢

Information on school library programs and facilities, and suggestions to assist educators in planning functional facilities for expanded school library services.

FS 5.215:15051

Statistics of Public Libraries, Part 1. Henry T. Drennan and Doris C. Holladay. 1965. 47 p. 35¢

First of a two-part study of the comprehensive 1962 public library survey; presents institutional data for public libraries serving 35,000 persons and above.

FS 5.215:15055

School Library Supervision in Large Cities. 1966. 91 p. 50¢

Report of a conference held at the U.S. Office of Education, September 23-25, 1964, to examine and suggest solutions for problems connected with school library service.

FS 5.215:15061

Library Manpower (Occupational Characteristics of Public and School Librarians). Henry T. Drennan and Richard L. Darling. 1966. 29 p. 30¢

Provides data on the number and qualifications of public and school librarians in the United States. Includes more than 20 tables covering educational background, sex, salary, and field of specialization.

10000-10999**Miscellaneous****FS 1.1:960-66**

Annual Report 1965—U.S. Department of Health, Education, and Welfare. 262 p. 75¢

An account of the activities of the Social Security Administration, Public Health Service, Office of Education, Food and Drug Administration, Office of Vocational Rehabilitation, Saint Elizabeths Hospital, American Printing House for the Blind, Gallaudet College, and Howard University.

Also available:

- 1962. 433 p. \$1.25
- 1961. 418 p. \$1.25
- 1966. 441 p. \$1.25

FS 5.210:10001-66

Education Associations, 1965-66. Part 4, Education Directory. Bobbie Doud. 1966. 134 p. 55¢

A compilation of national, regional, and State education associations; foundations, religious and international organizations; honor societies. Gives addresses, chief officers, and publications.

Also available:

- 1964-65. 117 p. 50¢
- 1962-63. 109 p. 50¢
- 1961-62. 122 p. 50¢
- 1960-61. 117 p. 50¢

FS 5.210:10003-58

Statistical Summary of Education, 1957-58. Rose Marie Walker and W. Vance Grant. 1962. 50 p. 35¢

An abstract of statistics covering the entire field of education from kindergarten through graduate school, drawing in part on other chapters of the biennial survey. Shows national totals for 1957-58 and depicts the growth of education in this country from 1869-70. Contains tables for several new fields.

FS 5.210:10004-63

Report on the National Defense Education Act, Fiscal Year 1963: A Summary of Programs Administered by the Office of Education under Public Law 85-864. 1964. 104 p. 70¢

An evaluative account of operations under the various titles of the act during the 5th and 6th years of its existence.

FS 5.210:10005-66-A

Progress of Public Education in the United States of America, 1965-66. 1966. 71 p. 50¢

Serves as the report of the Office of Education to the 29th International Conference on Public Education at Geneva, Switzerland, June 27-July 9, 1966, sponsored by UNESCO and the International Bureau of Education. *Also available:*

—1964-65. 63 p. 30¢

—1963-64. 73 p. 30¢

FS 5.210:10010

A Federal Education Agency for the Future: Report of the Committee on Mission and Organization of the U.S. Office of Education. 1961; reprinted 1963. 56 p. 25¢

Report of the committee charged by the Commissioner of Education to draw up a statement of Office mission over the next decade and an appropriate table of organization.

FS 5.210:10014-A

The Constitution of the United States. 43 p. 10¢

A pocket-size booklet presenting the Constitution and all amendments in their original form.

FS 5.210:10015

The Declaration of Independence and

Its Story. R. L. Hunt and others. Revised 1953. 37 p. 10¢

A pocket edition containing full text with background history, biographical notes, and suggestions for its study in secondary schools.

FS 5.210:10016

Education for Freedom and World Understanding: A Report of the Working Committees of the Conference on the Ideals of American Freedom and the International Dimensions of Education. Richard D. Poll. 1962; reprinted 1963. 62 p. 30¢

The report of a committee of 140 American educators which met to define the common core of ideals which should command the allegiance of all Americans and to discover ways to give those ideals more effective expression in education.

FS 5.210:10018

Education and the Development of Human Technology. Kenneth L. Neff. 1962. 34 p. 20¢

A conceptual consideration of the use of planned educational growth to promote economic development as applicable to problems of underdeveloped countries.

FS 5.210:10021

The Impact of Urbanization on Education: Summary Report of a Conference, May 28-29, 1962. 1962. 12 p. 10¢

Brief outline of problems identified at a conference of spokesmen for the 15 largest city school systems and key Federal urban planners, called by the Office of Education to establish much-needed channels of communication between educators and urban planners.

FS 5.210:10024-66

Digest of Educational Statistics. 1966. 124 p. \$1

A compilation of the more significant statistical material available in the Office of Education on schools, enrollments, teachers, graduates, educational attainment, finances, and Federal programs in the field of education in the United States. Data were sometimes regrouped or retabulated.

Also available:

—1964. 175 p. 65¢

—1965. 182 p. 70¢

FS 5.210:10025

Federal Government, 1962-63. Part 5. Education Directory. Martha Walpole. 1963. 61 p. 25¢

The first issue in the Directory series to list key educational personnel in the various U.S. Government departments and independent agencies. Assembled in an organizational format.

FS 5.210:10027

National Development Through Social Progress: The Role of Education. Kenneth L. Neff. 1963. 15 p. 15¢

Suggests a theoretical framework for relating education to social, economic, and political progress and cites some implications for U.S. programs of technical assistance.

FS 5.210:10030-66

Projections of Educational Statistics to 1975-76. Kenneth A. Simon and Marie G. Fullam. 1966. 113 p. \$1

Supplies projections of the main areas of statistics such as enrollment, graduates, teachers, and expenditures for elementary and secondary schools and institutions of higher education.

FS 5.210:10032

NDEA at a Glance. 1965. 5¢

A leaflet describing the National Defense Education Act of 1958, as amended by Congress in 1964.

FS 5.210:10033

Background Readings in American Education. 1965. 81 p. 35¢

An historical anthology of important writings. Printed for use at The White House Conference on Education, July 20-21, 1965, Washington, D.C.

FS 5.210:10034

Contemporary Issues in American Education. 1965. 158 p. 60¢

Eighteen consultants' papers prepared for use at The White House Conference on Education, July 20-21, 1965, Washington, D.C.

FS 5.210:10035

The White House Conference on Education (reprinted from *American*

Education, July-August 1965). 1965. 16 p. 25¢

Reports the highlights of The White House Conference on Education, held in Washington, D.C., July 20-21, 1965.

FS 5.210:10040

Land-Rich or Land-Poor Schools (reprinted from *American Education*, November 1965). 1966. 4 p. 10¢

Contains information about the Open-Land Space Program, part of the Housing Act of 1961, and describes how schools may participate in the program.

FS 5.210:10045

A Thousand Partnerships (reprinted from *American Education*, June 1966). Gene E. Bradley. 1966. 4 p. 15¢

Describes the School-to-School Program, one in which U.S. school children, teachers, and parents raise money to help others in foreign countries build schools.

FS 5.210:10046

A Heritage to Discover (reprinted from *American Education*, July-August, 1966). George B. Hartzog, Jr. 1966. 5 p. 15¢

Tells about the training program for the National Park Service rangers, naturalists, and historians. Discusses the activities of the National Park Service and its work to improve the Nation's park system.

FS 5.210:10047

Education . . . Everybody's Business. Harold Howe II. 1967. 33 p. 20¢

Remarks on four aspects of the contemporary educational scene.

11000-11999**OE PROGRAMS, GENERAL**

American Education. 32 p. Subscription: domestic, \$3.75 a year; foreign, \$4.75; single copy 45¢

Official journal of the U.S. Office of Education, published ten times a year. Reports on Office planning and action, legislation and Federal activities, and programs affecting education; includes statistical information of national interest.

FS 5.211:11000E

Publications of the Office of Education, 1967. Revised by Bobbie Doud

An annotated list of publications in stock or in press as of May 1967 and available for sale to the public through the U.S. Government Printing Office.

FS 5.211:11002B

Handbook, Office of Education. 1963. 37 p. 25¢

Historical background, function and organization, activities of the various divisions. Includes a statement of career opportunities.

FS 5.211:11006

Education '65: A Report to the Profession. 1966. 100 p. 70¢

Catalogs Federal programs designed to help American educators carry on the work of education.

FS 5.211:11009

OE 100. 1967. 30 p. 45¢

This booklet commemorating the Centennial of the U.S. Office of Education highlights the progress of American education and includes sketches suggesting the flavor of schooling in our past and predictions of what schooling may be like in the future.

FS 5.211:11010

Report on Federal Money for Education, 1967 (reprinted from *American Education*, February 1967). 1967. 5 p. 15¢

Factsheet of programs financed by Federal money and administered by the U.S. Office of Education during the fiscal year 1967.

FS 5.211:11012

Report on Federal Money and Recent Legislation for Education, 1967 (reprinted from *American Education*, February 1967). 1967. 11 p. 15¢

Describes the amendments to the Elementary and Secondary Education Act of 1965. Discusses the Desegregation Guidelines and the International Education Act of 1966. Also gives a complete guide to Office of Education programs.

12000-12999**Research****Research in Education.**

Subscription: domestic, \$11 a year; foreign, \$13.75 a year; single copy, \$1

A monthly abstract journal reporting to the people on new and completed educational research projects supported by the Federal Government through the Office of Education. Directed to school administrators, teachers and supervisors, school board members, commercial and industrial organizations, and the public.

FS 5.212:12004-62

Cooperative Research Projects, Fiscal 1962. Karen Leyonmark. 1963. 64 p. 45¢

Contains brief descriptions of basic and applied research projects initiated under the Cooperative Research Program (Office of Education) during fiscal 1962. Shows the problem under investigation, objectives, procedures used, the contracting institution, investigation, and duration of project.

Also available:

—Fiscal 1961. 92 p. 45¢

—Fiscal 1960. 112 p. 30¢

FS 5.212:12014-64

National Defense Language Development Research and Studies, Fiscal years 1963 and 1964. 1964. 42 p. 30¢

Describes the contracts negotiated by the Office of Education under the Language Development Program in its fifth and sixth years of operation to improve instruction in modern foreign languages, commonly taught and "neglected."

Also available:

—Fiscal 1961. 27 p. 25¢

—Fiscal 1962. 24 p. 20¢

FS 5.212:12015

Research Projects of the Cooperative Research Program: A Five-Year Summary (July 1, 1956—September 30, 1961). 1962. 79 p. 45¢

Lists all the projects initiated since the program began, by serial number, name of director, institution title, contract dates. The projects are indexed by name of director, by State and institution, and by subject.

FS 5.212:12016-65**Completed Research, Studies, and Instructional Materials in Modern Foreign Languages. 50¢**

Lists the studies so far produced under the Language Development Program (National Defense Education Act) under contract with the Office of Education, with instructions for ordering copies. See OE-12011, OE-12014, OE-12014-62, and OE-12014-64 for descriptions of the studies.

Also available:

—1964. 74 p. 45¢

—1963. 52 p. 35¢

FS 5.212:12023**How to Put Two and a Half Tons of Research into One Handy Little Box (reprinted from *American Education*, February 1966). Lee**

G. Burchinal and Harold A. Haswell. 1966. 4 p. 10¢

Gives information about the Educational Research Information Center (ERIC) of the U.S. Office of Education, created in May 1964, to facilitate and coordinate information storage and retrieval of efforts in all areas of educational research.

FS 5.212:12024**Program Evaluation and Review Technique—Applications in Education. Desmond L. Cook. 1966. 100 p. 45¢**

The purpose of this monograph is to disseminate to the educational community the basic concepts and principles of a recently developed project-management information system entitled Program Evaluation and Review Technique—or PERT.

ELEMENTARY AND SECONDARY EDUCATION

23000-23999

Administration, Staff, Salaries

FS 5.223:23006A

Elementary School Administration and Organization. Stuart E. Dean. 1960; reprinted 1963. 126 p. 55¢

The findings of a national survey of policies, practices, and trends submitting a comprehensive status report on what the schools are actually doing.

FS 5.223:23007

Characteristics of Administrative Handbook for School Staff Personnel. John F. Staehle. 1960. 50 p. 25¢

The handbooks of 72 medium-sized and large school systems throughout the country were reviewed with regard to school agencies and personnel, instruction and supplementary services, facilities and equipment, and community relations.

FS 5.223:23009

The Beginning Teacher: Status and Career Orientations. Ward S. Mason. 1961. 196 p. \$1.25

Further analysis of data published in 1958 on the social, professional, and economic status of beginning teachers; their aspirations, values, and attitudes, as indicated by a study undertaken in 1957.

Also available:

—A survey of New Teachers in the Public Schools, 1956-57. 1958. 56 p. 40¢. FS 5.4:510.

FS 5.223:23023

Local School Boards: Organization and Practices. Alpheus L. White. 1962; reprinted 1963. 103 p. 50¢

Prepared in the belief that the local school board is a key agency in school improvement, on the basis of a questionnaire survey. Discusses selection of members, size of board, term of office, special and standing committees, meetings, and compensation of members.

FS 5.223:23026

Merit Salary Programs in Six Selected School Districts. James P. Steffen. 1962. 63 p. 30¢

Examines practices and procedures in administering a merit salary policy as a means to improve teacher salary structure, in terms of the experience of some school districts prominent in the field.

FS 5.223:23030

Selected State Programs in Migrant Education. George E. Haney. 1963. 38 p. 25¢

A survey of seven State programs, regular and summer school, their organization at local and State levels, their solution to some of the problems of administration, with guidelines for new programs.

FS 5.223:23031

Preparation in School and College Personnel Work: Programs and Course Offerings, Summer 1963, Academic Year 1963-64. Leonard M. Miller and Roland G. Ross. 1963. 196 p. \$1.25

The listing, by State and institution, serves as a directory to guide a student in selecting institutions with which to correspond.

FS 5.223:23035

Pupil Accounting for Local and State School Systems, Handbook V. John F. Putnam and George G. Tankard, Jr. 1965. 133 p. 60¢

Basic guide for items to be included in pupil accounting in U.S. local and State school systems. It is the result of 4 years of cooperative work by 10 national education associations and the Office of Education.

FS 5.223:23038

State Education Structure and Organization. Robert F. Will. 1964. 156 p. \$1.25

Study is primarily concerned with the State administrative agencies in the United

States that have major responsibilities for public education at the elementary and secondary levels. Presents, State by State, basic data as of January, 1963, on the State education agencies responsible for elementary and secondary education programs, including vocational education programs.

FS 5.223:23039

Staff Accounting for Local and State School Systems. Allan R. Lichtenberger and Richard J. Penrod. 1965. 174 p. 65¢

Identifies and defines items about school staff members which must be collected and maintained by local and State school systems.

FS 5.223:23040

Research in State Departments of Education. John E. Bean. 1965. 155 p. 50¢

Reports the current status of educational research in State departments of education.

FS 5.223:23044

State Law on Compulsory Attendance. August W. Steinhilber and Carl J. Sokolowski. 1966. 103 p. 55¢

A survey of compulsory school attendance laws by state, plus a historical review and an analysis of pertinent judicial rulings. A bibliography of other important publications is included.

FS 5.223:23045

Scope of Pupil Personnel Services. Louise Omwake Eckerson and Hyrum M. Smith. 1966. 95 p. 35¢

Describes pupil personnel services as they now exist and the forward look of professional concepts and some creative approaches to these services. Provides information which will be helpful to school administrators and teachers as well as pupil personnel specialists.

FS 5.223:23047

Improving State Leadership in Education. 1966. 145 p. 60¢

Deals with the initial impact of title V of the Elementary and Secondary Education Act of 1965, and related federally sponsored programs, upon the professional development of 54 of the Nation's State and territorial education agencies.

34000-34999

Audiovisual Aids

FS 5.234:34002-11

Research Reports, Title VII—New Educational Media, Eighth Special Edition. 1965. 14 p. 15¢

Abstracts of research grants and contracts approved under part A of title VII of the National Defense Education Act.

FS 5.234:34003-63

Key Audiovisual Personnel in Public School and Library Systems in States and Large Cities and in Large Colleges and Universities, 1962-63. Eloyse Grubles. 1963. 94 p. 35¢

Names some 1,000 persons, compared to the 38 identified in the first of these annual compilations issued in 1952-53.

Also available:

—1960-61. 101 p. 35¢

—1959-60. 94 p. 35¢. FS 5.234:34004

FS 5.234:34004

Radio and Television: A Selected Bibliography. Patricia Beall Hamill. 1960. 39 p. 25¢

An annotated list of publications reporting findings of research and experimentation on the educational applications of radio, television, and motion pictures.

FS 5.234:34006-63

U.S. Government Films for Public Educational Use, 1960. Seerley Reid and others. 1964. 532 p. \$3

A catalog of motion pictures and filmstrips available for use in the United States through agencies of the executive, judicial, and legislative branches of the Federal Government, as of July 1, 1963. Prepared with the Library of Congress.

Also available:

—1960. 205 p. \$2.75.

FS 5.234:34010

Teaching by Machine. Lawrence M. Stolurow. 1961; reprinted 1963. 173 p. 65¢

An illustrated survey of mechanical teaching devices prepared by the University of Illinois. Discusses the current experiments in programing and some implications of the use of autoinstructional devices.

FS 5.234:34016-63

Educational AM and FM Radio and Educational Stations by State and City. Gertrude G. Broderick. 1963. 29 p. 25¢

The listing shows call letters, frequency power or channel, licensees, and general managers and program directors.

FS 5.234:34018

Technology in American Education, 1650-1900. Charnel Anderson. 1962; reprinted 1963. 53 p. 25¢

Technological developments in instruction with emphasis on the 19th century. Illustrations from contemporary catalogs. Projection and recording will be the subject of a separate study, in a series prepared by the National Education Association.

FS 5.234:34020

New Teaching Aids for the American Classroom. 1960; reprinted 1962. 173 p. \$1.25

Papers presented at a symposium on the state of research in instructional television and tutorial machines, convened November 13-14, 1959, by the Office of Education and the Institute for Communication Research, Stanford University.

FS 5.234:34022

The Use of Programed Instruction in U.S. Schools, 1961-62. 1963. 83 p. 35¢

A report based on replies of 2,000 school superintendents (about 13 percent of those queried) to three questionnaires, "Nonuser," "User," and "Individual Program Usage." The second half of a survey conducted by The Center for Programed Instruction, Inc., part one being an annotated catalog of available materials (OE-34015-63).

FS 5.234:34025

Survey of Educational Media Research in the Far East. Benjamin C. Duke. 1963. 181 p. 70¢

Describes the results of research and experimentation abroad in the field, as an aid in resolving related problems in the U.S.

FS 5.234:34036

Educational Television the Next Ten Years. 1965. 375 p. \$1.25

Report and summary of major studies on the problems and potential of educational

television, conducted under the auspices of the U.S. Office of Education. This volume was put together to make it possible for educators, television people, and everyone else interested in the future of educational television to share the thoughts of specialists concerning what ETV can be and do.

FS 5.234:34038

Research Activity Report, April 1965. 1965. 15 p. 10¢

Explains the loan service of captioned films for the deaf. Covers a summary of some of the contracts dealing with this program.

FS 5.234:34040

Television in Medical Teaching and Research. James W. Ramey. 1965. 155 p. \$1

Report covers the medical section of a study of the use of television in medical and dental education and research under title VII, part B, of the National Defense Education Act for which the U.S. Office of Education provided support.

FS 5.234:34041

Research in Instructional Television and Films. 1967. 216 p. \$1.25

Report of about 350 research studies concerned with instructional television and film. Categorized for easy reference and use by researchers, school administrators, curriculum directors, classroom teachers, and media specialists.

21000-21999**Buildings, Equipment****FS 5.51:6**

Administrative Facilities in School Buildings. James L. Taylor. 1957. 52 p. 45¢

Specifications of school plant elements such as principal's office, teachers' room, conference rooms, guidance facilities, health clinic, and storage space.

FS 5.51:5

The Secondary School Plant: An approach for Planning Functional Facilities. James L. Taylor. 1956. 60 p. 45¢

An outline of principles, techniques, and procedures applied successfully in a number of communities. Sample specifications are included.

FS 5.221:21004

School Insurance: Managing the Local Program. R. N. Finchum and N. E. Viles. 1959. 97 p. 50¢

Prepared to assist local school officials and State department of education insurance consultants in planning, organizing, and administering the local school district insurance program.

FS 5.221:21005

School Plant Management: Administering the Custodial Program. R. N. Finchum. 1961. 97 p. 40¢

Gives the school administrator's view of the problems involved in providing adequate building services, with an outline of procedures used with success in various parts of the country. Included are sections on personnel requirements and policies, custodial duties and work schedules, training programs, and supplies and equipment.

FS 5.221:21006

Functional Schools for Young Children. James L. Taylor, Lillian L. Gore, and Hazel F. Gabbard. 1961. 81 p. 65¢

Data gathered in a survey of newly constructed or remodeled elementary schools, with special attention to programs and facilities for children 3 to 8 years old, as an aid to school administrators in preparing specifications for nursery schools, kindergartens, and primary grades 1, 2, and 3. Illustrated.

FS 5.221:21020

School Sites: Selection, Development, and Utilization. James L. Taylor. 1958; reprinted 1962. 91 p. 75¢

A study for the use of school boards, planners, and designers in determining where to build, based on an assumption that the school site is an educational tool. Illustrations of school plants and site layouts.

FS 5.221:21022

Loans for Laboratory and Other Special Equipment for Science, Mathematics, and Modern Foreign Languages. 1962. 8 p. 10¢

Answers questions frequently asked about the loan program for private nonprofit schools (for which 12 percent of these loans

is reserved), as provided in section 305 of title II of the National Defense Education Act.

FS 5.221:21022-B

Loans to Nonprofit Private Elementary and Secondary Schools. 1966. 15 p. 10¢

Explains how loans made under title III of the National Defense Education Act of 1958, as amended, strengthen instruction in critical subjects in elementary and secondary schools.

FS 5.221:21027

School Building Maintenance Procedures. R. N. Finchum. 1964. 175 p. \$1.25

Deals with school plant management problems; identifies, describes, shows the function of, and outlines maintenance procedures for many components of school buildings.

FS 5.221:21029

Fire Insurance Economies Through Plant Management. R. N. Finchum. 1964. 81 p. 30¢

Relates fire insurance costs to plant management practices to suggest procedures that will enable school districts to arrange for adequate and economical fire insurance protection.

FS 5.221:21031

Schoolhouses for Big Cities (Reprinted from *American Education*, February 1965). William W. Chase. 1965. 25¢

An article concerning the progress and trends toward modern construction, design, and planning in urban schools.

FS 5.221:21033-65

Condition of Public School Plants. George J. Collins and William L. Stormer. 1965. 38 p. 35¢

Objectively identifies conditions of some school facilities in the area of crowded or unsatisfactory classrooms. Prepared to stimulate a demand for more detailed information on schoolhousing.

FS 5.221:21034

Planning Preschool Facilities (reprinted from *American Education*, Dec. 1966-Jan. 1967). William W.

Chase and Minnie P. Berson.
1966. 5 p. 10¢

Discusses the planning of preschool facilities for public preschool classes with funds provided under the Elementary and Secondary Education Act of 1965.

FS 5.221:21036

The One-Room Schoolhouse and How It Grew (reprinted from *American Education*, May 1967). William Chase. 1967. 5 p. 15¢

Discusses school building designs of a century ago, and ways in which progressive planners of today are designing buildings that will fill immediate school needs and at the same time remain sufficiently adaptable to accommodate tomorrow's programs.

26000-26999

Careers

FS 5.226:26007

Careers in Engineering, Mathematics, Science, and Related Fields: A Selected Bibliography. A. Neal Shedd, Anita K. Scott, and James M. McCullough. 1961. 39 p. 25¢

Lists 385 free or inexpensive publications about careers in the sciences—agriculture, biological sciences, engineering, forestry, the health professions, mathematics, and the physical sciences.

FS 5.226:26014-A

Teaching as a Career. 1944; revised 1965. 32 p. 20¢

Practical advice for young people inquiring about the opportunities and drawbacks of work in education.

FS 5.226:26015

Geography as a Professional Field. 1966. 95 p. 35¢

Various geography area specialists describe the application of geography to careers in field such as cartography, urban and rural planning, location of industries, marketing, climatology, transportation, military operations, and economic development. The publication is intended for high school students.

37000-37999

Disadvantaged

FS 5.237:37001

Catalog of Selected Documents on

the Disadvantaged: Number and Author Index. 1966. 130 p. 65¢

Compiled by the Educational Research Information Center of the Office of Education to improve the availability of educational information about the disadvantaged and to assist local education agencies to develop and implement their own programs for the disadvantaged and for all students.

FS 5.237:37002

Catalog of Selected Documents on the Disadvantaged: Subject Index. 1966. \$3

Compiled by the Educational Research Information Center of the Office of Education to improve the availability of educational information about the disadvantaged and to assist local education agencies to develop and implement their own programs for the disadvantaged and for all students.

FS 5.237:37004

National Conference on Education of the Disadvantaged. 1966. 86 p. 55¢

Report of a national planning conference in Washington, D.C., July 18-20, on education for disadvantaged children.

FS 5.237:37005

Office of Education Programs for the Disadvantaged. 1966. 19 p. 20¢

Gives information on educational programs for the disadvantaged—the kinds of activities the individual program may support and specific detail on each program regarding the authorizing legislation, purpose, eligibility, and administering unit.

FS 5.237:37007

Missionaries in the Classroom (reprinted from *American Education*, January 1967). Ron Van Doren. 1967. 4 p. 10¢

Contains information about the Teacher Corps, established under title V of the Higher Education Act of 1965. Explains how Corpsmen are recruited, selected, and trained.

FS 5.237:37006

Summer Education for Children of Poverty. 1966. 54 p. 40¢

Contains observations by seven teams of expert consultants of the voluntary summer school projects for disadvantaged children

funded by title I of the Elementary and Secondary Education Act of 1965. Includes limited statistical data.

24000-24999

Enrollment, Retention, Graduates

FS 5.224:24000

State Legislation on School Attendance. Nelda Umbeck. 1960. 33 p. 30¢

Covers legislation enacted during 1959. Includes school census and child labor information, tables on public school enrollments, and a State-by-State summary of attendance regulations.

FS 5.224:24007

Enrollment in Public and Nonpublic Elementary and Secondary Schools, 1950-60. Kenneth A. Simon. 1962. 12 p. 15¢

The projections, based on actual enrollment, 1950-60, are designed as an aid to planners in making policy decisions related to education.

FS 5.224:24012

Subject Offerings and Enrollments Grades 9-12, Nonpublic Secondary Schools, 1961-1962. Diane B. Gertler. 1965. 167 p. \$1.25

Concerns the number and variety of subjects offered in nonpublic secondary schools and the number of students enrolled in these courses.

FS 5.224: 24015-61

Subject Offerings and Enrollments in Public Secondary Schools. Grace S. Wright. 1965. 115 p. 75¢

Reports, by States, the number of pupils enrolled in different subject areas and the number of schools offering these subjects. Provides information on subject offerings by types and sizes of schools.

38000-38999

Equal Education Opportunity

FS 5.238:38000

Equality of Educational Opportunity. 1966. 33 p. 30¢

Summary report of major findings of a survey of educational opportunity conducted by the U.S. Office of Education.

FS 5.238:38001

Equality of Educational Opportunity. 1966. 737 p. \$4.25

Report of a survey of educational opportunity conducted by the U.S. Office of Education.

FS 5.238:38002

The Human Frontier. Harold Howe II. 1966. 40 p. 25¢

A compilation of four speeches concerning equality in education.

35000-35999

Exceptional Children Special Education

FS 5.20:C43

Creed for Exceptional Children. Leonard Mayo. 1955. 10¢

Poster, 18 x 12.3 in., derived from a conference on qualification and preparation of teachers of exceptional children.

FS 5.235:35000

The Retarded Child Goes to School. Harold M. Williams. 1960. 24 p. 15¢

An inquiry into the educational needs of this child and major ways in which schools are attempting to meet them.

FS 5.235:35002

Preparation of Mentally Retarded Youth for Gainful Employment. Romaine P. Mackie and others. 1959. 86 p. 35¢

Discusses the responsibility of the public schools, vocational rehabilitation; contains a conference report and outlines of several programs in operation.

FS 5.235:35006

Educating the More Able Children in Grades Four, Five, and Six. Gertrude M. Lewis. 1960. 35¢

Characterizes these children and some programs suitable to their needs.

FS 5.235:35008

Special Education Personnel in State Departments of Education. 1960. 49 p. 30¢

A report based on findings from the study "Qualification and Preparation of Teachers of Exceptional Children."

FS 5.235:35012

Education of the Severely Retarded Child. Harold M. Williams and J. E. Wallace Wallin. 1959; reprinted 1960. 25 p. 15¢

A list of 300 titles on the training and education of such a child.

FS 5.235:35014

The Forward Look: The Severely Retarded Child Goes to School. Arthur S. Hill. 1952; reprinted 1960. 54 p. 25¢

A guide for school personnel on the problems to be considered: how to identify the children to be served, how to integrate a program with community medical and social welfare services, and how to accommodate a program administratively.

FS 5.235:35015

Statistics of Special Education for Exceptional Children, 1952-53. Arthur S. Hill and Mabel C. Rice. 1954; reprinted 1960. 78 p. 30¢

Data on staff and students in public day school special education based on a polling of rural and urban districts maintaining special education programs. See also OE-35048, *Statistics of Special Education for Exceptional Children and Youth, 1957-58.*

FS 5.235:35016

The Gifted Student: Research Projects Concerning Elementary and Secondary School Students. 1960; reprinted 1963. 83 p. 35¢

A review of four studies, on IQ plus creativity, identification, classroom behavior, and motivation patterns, and an inquiry into research needs in the area.

FS 5.235:35022

Education of the Severely Retarded Child: Classroom Programs. Harold M. Williams. 1961. 82 p. 45¢

A discussion of factors to be considered in formulating a program: the characteristics and aptitudes of middle-range retarded children, curriculum planning, teacher selection, and administrative considerations.

FS 5.235:35027

Special Education Enrollments in Local Public Schools: A Directory. Romaine P. Mackie, Harold M. Williams, and Patricia Peace Robbins. 1961. 58 p. 40¢

Lists by State and by local school system the special programs reported as of February 1958 for children who are blind, partially seeing, deaf, hard of hearing, crippled, socially or emotionally maladjusted, gifted or mentally retarded, or who suffer from speech impairment or special health problems.

FS 5.235:35032

Some Problems in the Education of Handicapped Children. Romaine P. Mackie. 1952; reprinted 1961. 12 p. 15¢

A general inquiry with case histories of several crippled children in public schools.

FS 5.235:35044

Programs for the Educationally Disadvantaged. 1963. 105 p. 50¢

Describes procedures adopted by several school districts to help slow learners from culturally deprived families. A second publication will deal specifically with teaching these children to read.

FS 5.235:35048

Statistics of Special Education for Exceptional Children and Youth, 1957-1958. Romaine P. Mackie, Harold M. Williams, and Patricia P. Hunter. 1963. 55 p. 25¢

A report on enrollments in public school systems and public and private residential schools for ten areas of exceptionality. Gives comparative data for 1948 and 1958, a decade of rapid growth in the special education field.

FS 5.235:35049

Children with Speech and Hearing Impairment: Preparing to Work with Them in the Schools. Wendell Johnson. 1959; reprinted 1963. 32 p. 20¢

A survey of the problems to be met in serving the educational needs of an estimated 1.5 million school-age children with speech and hearing disability.

FS 5.235:35053

Talent Development Project, 1964. 1964. 16 p. 10¢

Gives information about the Talent Development Project launched by the Office of Education in 1961 and 1962 to identify and educate talented children and youth.

FS 5.235:35054

Personnel and Activities for Talent Development in Departments of Education in States and in Outlying Areas. 1964. 40 p. 20¢

Includes a list of the person, or persons, in each State Department of Education who is responsible for programs for the talented and a description of The Council of State Directors of Programs for the Gifted.

FS 5.235:35056

Research Trends and Needs in Educating the Gifted. 1964. 20 p. 15¢

Report of a conference sponsored by the University of Wisconsin and the University of Illinois in cooperation with the U.S. Office of Education to consider present trends and future needs in research in the education of the gifted. This publication is an outgrowth of the findings and recommendations of the conference participants.

FS 5.235:35057

The Organization and Implementation of Programs for Handicapped Children and Youth, 1964. 1964. 47 p. 30¢

Explains the expanded programs for research and service in mental health and in mental retardation available through title III of the Mental Retardation Facilities and Community Mental Health Centers Construction Act of 1963.

FS 5.235:35060

Educating Disadvantaged Children Under Six. Helen K. Mackintosh, Lillian Gore, and Gertrude M. Lewis. 1965. 26 p. 15¢

Gives information concerning the findings from programs with disadvantaged pre-primary children. It should assist schools in interpreting the needs of such children and in programing constructively for them.

FS 5.235:35061

Directory of Special Education Personnel. 1965. 18 p. 15¢

Lists special education personnel in State Departments of Education and the Division of Handicapped Children and Youth, U.S. Office of Education.

FS 5.235:35066

Educating Disadvantaged Children in the Primary Years. Helen K. Mackintosh, Lillian Gore, and Gertrude M. Lewis. 1965. 52 p. 25¢

Describes characteristics of severely disadvantaged young children as they come to school, and relates some of the things the visiting specialists found skillful teachers in 16 cities doing to help children overcome their handicaps. It will help teachers and administrators who have responsibility for planning educational experiences for these children.

FS 5.235:35068

Educating Disadvantaged Children in the Middle Grades. 1965. 47 p. 25¢

Reports on programs found useful with children approximately 9 to 11 years old. Offers suggestions which may be helpful in implementing changes which should take place.

FS 5.235:35069

Provisions for Talented Students. 1966. 61 p. 25¢

Lists State and local materials not previously publicized or widely available. It should prove useful to persons concerned with differentiated education for talented students. Teachers may consult it as a source of ideas on curriculum and methods.

FS 5.235:35070

Educational Programs for Visually Handicapped Children. 1966. 74 p. 30¢

Findings presented in this pamphlet were derived from a nationwide survey, conducted by the U.S. Office of Education, on program and placement practices in this special area.

FS 5.235:35078

Something for the Special Child (reprinted from *American Education*, September 1965. 1965. 10 p. 20¢

Discusses the education of handicapped children and the facilities needed for teaching them. Includes information about two pieces of legislation administered by the U.S. Office of Education which include provisions beneficial to handicapped children.

FS 5.235:35082

Administration of Elementary School Programs for Disadvantaged Children. Helen K. Mackintosh, Lillian Gore, and Gertrude M. Lewis. 1966. 42 p. 20¢

Reports some of the administrative problems and responsibilities involved in the operation of programs focused on the disadvantaged. Designed for elementary school administrators in school systems severely affected.

FS 5.235:35084

A Chance for a Change: New School Programs for the Disadvantaged. 1966. 65 p. 60¢

Unfolds the story of title I of the Elementary and Secondary Education Act of 1965, illustrating how local school systems across the country are utilizing their allocations imaginatively and effectively to develop special programs for disadvantaged children.

FS 5.235:35089

Office of Education Programs for the Handicapped. 1967. 16 p. 15¢

Gives information on educational programs for the handicapped—the kinds of activities the individual program may support and specific detail on each program regarding the authorizing legislation, purpose, eligibility, and administering unit.

FS 5.235:35090

Sources of Audiovisual Materials. Milbrey. L. Jones. 1967. 14 p. 15¢

Describes selected lists of materials useful to State and local school systems participating in title II of the Elementary and Secondary Education Act of 1965, title III of the National Defense Education Act of 1958, as amended, and other Federal programs which may provide for materials.

22000-22999

Finances

FS 5.30:32

Financing Public School Facilities.

Clayton D. Hutchins and Elmer C. Deering. 1959. 214 p. \$1.50

Describes State programs for assisting local school districts financially, giving detailed information about provisions for financing school buildings.

FS 5.222:22001

Statistics of Bonds Sold for Public School Purposes, October 1953-June 1959. Stanley V. Smith and E. Joan McMurray. 1959. 15 p. 20¢

Provides information for administrators concerned with public school construction and financing; contains tables and graphs of national, regional, and State totals resulting from an analysis of data covering almost 6 years.

FS 5.222:22002

Public School Finance Programs of the United States, 1957-58. Albert R. Munse and Eugene P. McLoone. 1960. 275 p. \$2

Gives State-by-State descriptions of revenue provisions for State and local financing of public education, including sources of funds, school indebtedness, assessment, budget and audit procedures, and trends in public school support.

Also available:

—1953-54. 251 p. \$1.50 FS 2.30:22

FS 5.222:22003-66

Administration of Public Laws 874 and 815: Fifteenth Annual Report of the Commissioner of Education, June 30, 1966. 1967. 210 p. \$1.50

Outlines major accomplishments of the two programs since instigation to provide financial assistance to local educational agencies in federally affected areas for current operating expenses and for school construction. Tables show receipts and disbursements for each program for fiscal year ending June 30, 1966.

Also available:

—1965. 222 p. \$1.25

—1964. 212 p. \$1.00

—1963. 167 p. \$1.00

FS 5.222:22009-66

Bond Sales for Public School Purposes, July 1, 1965-June 30, 1966. 1966. 7 p. 10¢

Seventh in a series of State-by-State summaries of new bond sales; shows the number and amount of sales with average net interest costs, by issuing agencies and by Moody ratings.

Also Available:

- 1964-65. 7 p. 10¢
- 1963-64. 7 p. 10¢
- 1962-63. 11 p. 15¢

FS 5.222:22013

Revenue Programs for the Public Schools in the United States, 1959-60. Albert R. Munse. 1961. 79 p. 55¢

Tables showing trends in State patterns of support of public education through local, intermediate, district, State, and Federal revenue.

FS 5.222:22015

Trends in Financing Public Education, 1929-30 to 1959-60. Clayton D. Hutchins and Dolores A. Steinhilber. 1961. 136 p. \$1

Information in charts and tables on population, income, and taxes; public school revenue and expenditure; Federal funds for education; school personnel; capital outlay and school debt.

FS 5.222:22017

Financial Accounting for Local and State School Systems: Standard Receipt and Expenditure Accounts. Paul L. Reason and Alpheus L. White. 1957; reprinted 1965. 235 p. \$1

The basic guide on the subject prepared in the interests of standardizing accounts and terminology as an aid to improving the accuracy of local, State, and national summaries needed by policy makers. Second of four handbooks in the State Educational Records and Reports Series prepared with the cooperation of five nationwide education associations.

FS 5.222:22019-60

Current Expenditures Per Pupil in Large Public School System, 1959-60. Gerald Kahn. 1962. 27 p. 25¢

A survey of elementary and secondary full-time day programs of 332 public school systems with an enrollment of 12,000 or more pupils. Indexes for both average daily attendance and average daily membership are used.

FS 5.222:22021

Nonproperty Taxation for Schools. Albert L. Alford. 1963. 144 p. 55¢

Presents some broad information on the possibilities of local nonproperty tax adoption and compiles in one resource document available information on local nonproperty taxes and related problems.

FS 5.222:22022

Profiles in School Support. Forrest W. Harrison and Eugene P. McLoone. 1965. 162 p. \$1.25

Study on the inequalities in the financial support of public elementary and secondary education in the United States. Compares three decades of progress in financing schools, and introduces a number of new techniques.

FS 5.222:22023

State Programs for Public School Support. Albert R. Munse. 1965. 113 p. 70¢

Offers comprehensive information about the school finance programs of the States; analyzes State school fund distribution formulas to evaluate their effectiveness and to devise improvements.

27000-27999

Foreign Languages

FS 5.227:27000

Modern Foreign Languages in High School: Prereading Instruction. Patricia O'Connor. 1960; reprinted 1963. 50 p. 25¢

Describes some techniques for introducing classes at the secondary school level, based in part on the author's experience with an English language teaching project in Japan in 1957-58.

FS 5.227:27001B

Source Materials for Secondary School Teachers of Foreign Languages. Esther M. Eaton, Mary E. Hayes, and Lynne L. Norton. 1962. 24 p. 25¢

A list of the more recent professional and instructional materials applicable to teaching foreign languages, including audiovisual aids, language laboratories, and programmed texts.

FS 5.227:27005

Modern Foreign Languages in the High School. Marjorie C. Johnston. 1958; reprinted 1960. 166 p. \$1

Papers presented at a conference held in May 1957 to consider how modern foreign language programs in high school may be re-designed to serve the additional need for foreign languages, the changing character of foreign language teaching, new objective and evaluative techniques.

FS 5.227:27007

Modern Foreign Languages in the Elementary School: Teaching Techniques. Elizabeth Keese. 1960; reprinted 1963. 65 p. 45¢

Describes a variety of teaching techniques in wide use in introducing a second language to the middle and upper grades, illustrated with sample materials for Spanish and French.

FS 5.227:27008-B

References on Foreign Languages in the Elementary School. Elizabeth Keese. 1963. 49 p. 40¢

A representative list of recent publications about foreign language teaching and sources of instructional materials, for the use of supervisors and teachers contemplating or conducting an elementary foreign language program.

FS 5.227:27013

Modern Foreign Languages in High School: The Language Laboratory. Joseph C. Hutchinson. 1961; reprinted 1963. 85 p. 35¢

Describes the state of newness, variety, and rapid growth of facilities, and offers practical guidelines for planning a laboratory and obtaining maximum educational value from equipment selected. Includes a dictionary of technical terminology and glossaries in French, German, Italian, Russian, and Spanish of expressions useful to teachers in machine drill.

FS 5.227:27018

A Handbook for Guiding Students in Modern Foreign Languages. Ilo Remer. 1963. 105 p. 45¢

Designed to provide information to guidance workers, teachers, principals, and parents advising school-age students about foreign language programs fitted to their needs and abilities.

FS 5.227:27020

Modern Foreign Languages and Your Child. Marjorie C. Johnston and Elizabeth Keese. 1964. 43 p. 25¢

Acquaints parents with the improvements being made in school programs of modern foreign language, and answers some of their questions concerning how to encourage and guide their children's language studies.

FS 5.227:27021

The Language Laboratory. Joseph C. Hutchinson. 1964. 23 p. 15¢

Discusses the improvements secondary schools have made in the teaching of modern foreign languages with the aid of language laboratories.

20000-20999**General****FS 5.34:6**

The School Lunch—Its Educational Contribution. Ruth Wood Gavian. 1944; reprinted 1963. 27 p. 25¢

A guide to managing a school-lunch program, with school-provided meals or food brought from home.

FS 5.220:20004-65

State Governments, 1964-65. Part 1, Education Directory. Madeline G. Hagermann. 1965. 97 p. 35¢

Lists professional personnel in State and Territorial departments of education (regular employees responsible to the chief State school officer whose duties are Statewide in scope), and the executive officers of State and Territorial library extension agencies. Organization of the departments is indicated.

FS 5.220:20006-67

Public School Systems, 1966-67. Part 2, Education Directory. Samuel Schloss. 1967. 183 p. \$1.50

Lists for each State (1) all intermediate administrative units and (2) local school systems with 300 or more pupils, with names of superintendents and mailing addresses in each case. Superintendents or counterparts are also given for church-related schools.

FS 5.220:20006-64

Statistical Summary of State School Systems, 1963-64. Samuel Schloss and Alma M. Clarke. 1965. 25 p. 20¢

Summarizes data from the regular biennial survey of State elementary and secondary school statistics for the school year 1963-64. Presents selected statistics for the States and territories which furnished information by August 31, 1965.

FS 5.220:20007-66

Fall 1966 Statistics of Public Schools: Pupils, Teachers, Instruction Rooms, Expenditures. Carol Joy Hobson and Samuel Schloss. 1967. 31 p. 30¢

Provides current data on the number of local school districts, enrollment by grade, high school graduates, teachers, instruction rooms, estimated expenditures, and average salaries of the instructional staff.

Also available:

- 1965. 31 p. 30¢
- 1964. 18 p. 20¢
- 1963. 35 p. 30¢

FS 5.220:20008

State and Local School Systems, 1955-56. Suburban Cities. Joel Williams and Tobia Bressler. 1960. 156 p. \$1

Statistics on the suburban school comparable to those published in series on city school systems, to meet the needs of sociologists and educators for data on the effects of suburbanization on the population.

FS 5.220:20014

Schools in Our Democracy. 1960. 26 p. 15¢

A discussion of five basic issues in American education by the Commissioner of Education, touching on character education in schools, American versus European schools, and national standards for education.

FS 5.220:20020-64

Statistics of State School Systems, 1963-64. Carol Joy Hobson and Samuel Schloss. 1967. 105 p. 75¢

Basic data on the organization, staffing, enrollment, and financing of public elementary and secondary day schools. Includes statistics for *nonpublic* regular day schools.

Shows national enrollments for (1) elementary and secondary departments of institutions of higher education, (2) Federally operated schools on Federal installations, (3) Federal schools for Indians, and (4) residential schools for exceptional children.

Also available:

- 1959-60. 108 p. 70¢
- 1961-62. 101 p. 65¢

FS 5.220:20021A

Stronger Schools. 1963. 19 p. 15¢

Briefly reviews for parents and citizens what the National Defense Education Act offers elementary and secondary schools in stronger curriculums and counseling services.

FS 5.220:20028

State Plans for Improving Statistical Services. Ivan N. Seibert, Jerry N. Waddell, and Louise R. Murphy. 1961. 173 p. 65¢

Outlines programs for improving State statistical services with the aid of Federal funds, on a matching basis, under title X of the National Defense Education Act.

FS 5.220:20031

Directory of Public Secondary Day Schools, 1958-59: Showing Accreditation Status, Enrollment, Classroom Teachers, and Other Data. Leah W. Ramsey. 1961. 163 p. \$1.25

Lists all known secondary schools by name or place with information as noted in the publication's title.

FS 5.220:20033

Implications for Elementary Education. Followup on the 1960 White House Conference on Children and Youth. 1961. 42 p. 25¢

An inquiry into what constitutes a good elementary school. An Office of Education committee reviews the pertinent White House recommendations and suggests some priorities for improving elementary education in the 60's.

FS 5.220:20036

Partners in the School Enterprise. Gene C. Fusco. 1962. 10 p. 10¢

Booklet prepared in support of American Education Week, November 11-17, describing the role of the citizen in achieving better schools. Includes a checklist for parents.

FS 5.220:20043

Nonpublic Secondary Schools: Directory 1960-61. Diane B. Gertler and Leah W. Ramsey. 1963. 106 p. 75¢

Lists all known independent and church-affiliated schools, including those without accreditation, with figures on size, classroom teachers, enrollment, and graduates, in a separate publication for the first time. Companion to *Statistics on Nonpublic Secondary Schools, 1960-61* (OE-20050).

FS 5.220:20046

The Junior High School: A Survey of Grades 7-8-9 in Junior and Junior-Senior High Schools, 1959-60. Grace S. Wright and Edith S. Greer. 1963. 96 p. 45¢

Baseline data against which future studies on school practices for early adolescence may be examined. Covers administrative, organizational, and curricular practices; pupil services; and staff qualifications.

FS 5.220:20048

Talent—A State's Resource; A State's Responsibility. J. Ned Bryan. 1963. 35¢

A survey of State programs for the gifted and discussion of outstanding problems in meeting the educational needs of this group. Includes a directory of State department personnel in the area and a bibliography of pertinent State department and Office of Education publications.

FS 5.220:20050

Statistics on Nonpublic Secondary Schools, 1960-61. Diane B. Gertler. 1963. 53 p. 40¢

An analytical report on affiliation, enrollment, graduates, and teachers, based on data not gathered since 1947-48. See also *Nonpublic Secondary Schools: Directory 1960-61* (OE-20043).

FS 5.220:20051

Pupil Marks and School Marking Systems: A Selected Bibliography. Edith S. Greer. 1963. 22 p. 20¢

List of references brought together in order to help satisfy some of the frequent requests of school people for assistance in the area of marking.

FS 5.220:20053

High School Dropouts, A 20th Century Tragedy. 1964. 5¢

First in a series of public information pamphlets on the school dropout problem. Gives some sources of help in planning community programs.

FS 5.220:20054

Educating Children in Nursery Schools and Kindergartens. Lillian L. Gore and Rose Koury. 1964. 72 p. 35¢

Provides guidelines for the establishment and evaluation of nursery schools and kindergartens, and interprets learning and growth characteristics of young children and their implications to the curriculum.

FS 5.220:20055

The Dropout. Leonard M. Miller and John F. Putnam. 1963. 15 p. 10¢

Contains two articles about dropouts; one emphasizes the importance of getting facts and the other focuses on definitions and computations.

FS 5.220:20060

The 1963 Dropout Campaign. 1964. 34 p. 20¢

Summary and analysis of the special summer program to combat school dropout, financed from the President's Emergency Fund.

FS 5.220:20064-62

Statistics of Nonpublic Elementary Schools, 1961-62. Diane B. Gertler. 1964. 48 p. 35¢

Provides data on number of pupils enrolled, number of graduates, and number of staff members; comparable figures provided for public and nonpublic enrollments in secondary schools for the year 1961-62.

FS 5.220:20065

Citizens Committees for Better Schools. Gene C. Fusco. 1964. 16 p. 15¢

Examines factors in the citizens committee movement to identify characteristics of the organization and operation of these groups and to call attention to some guiding principles which successful committees have followed to obtain their objectives.

FS 5.220:20074

Leadership Conference on Institutes.
1965. 34 p. 20¢

Report of a 4-day conference held under the auspices of the U.S. Office of Education and the College of Education of the University of Maryland. The conference was organized to look at several broad questions concerning the Equal Educational Opportunities Program.

FS 5.220:20076

The First Work of These Times (reprinted from *American Education*, April 1965). 8 p. 10¢

A description and analysis of the Elementary and Secondary Education Act of 1965.

FS 5.220:20078

A Survey of Early Elementary Education in Public Schools. 1965. 82 p. 50¢

Concerned with the status, major administrative plans, organizational patterns, and personnel provisions pertaining to the nursery school, kindergarten, and the first, second, and third grades or years in U.S. public schools. Furnishes baseline data on enrollments, class sizes, admission ages, teacher qualifications, and methods of reporting to parents.

FS 5.220:20079-66

Nursery-Kindergarten Enrollment of Children Under Six: October 1966.
Samuel Schloss. 1967. 13 p. 15¢

Deals only with the 3-, 4-, and 5-year-olds in the total population and the number enrolled in public and private nursery schools and kindergartens.

FS 5.220:20080

Improvement of Instruction Through NDEA Title III. Lee E. Wickline. 1966. 27 p. 25¢

A report on instructional improvements in science, mathematics, and modern foreign languages in public elementary and secondary schools under Title III of the National Defense Education Act of 1958.

FS 5.220:20083

Big Ideas for Small Schools (reprinted from *American Education*, July-August 1965). Ovid F. Parody. 1965. 3 p. 10¢

Discusses ways in which small schools are receiving assistance through various small school projects.

FS 5.220:20085

What We Don't Know Can Hurt Us.
Francis Keppel. 1965. 8 p. 10¢

An address by Francis Keppel, U.S. Commissioner of Education, before the Council of Chief State School Officers, Honolulu, Hawaii, November 10, 1965.

FS 5.220:20086

PACE (Projects to Advance Creativity in Education). 1966. 23 p. 20¢

Explains the provisions of title III of the Elementary and Secondary Education Act of 1965—Supplementary Centers and Services.

FS 5.220:20087

State Laws Related to Transportation and Textbooks for Parochial School Students and Constitutional Protection of Religious Freedom.
August W. Steinhilber and Carl J. Sokolowski. 1966. 45 p. 35¢

Review of State constitutional provisions, statutes, and official interpretations of the laws with respect to student transportation and textbooks for parochial school pupils, and State constitutional provisions relating to freedom of religion and conscience.

FS 5.220:20088-A

Profile of ESEA. 1967. 24 p. 15¢

Summarizes the five titles of the Elementary and Secondary Education Act of 1965, and explains that these titles are designed to support major educational tasks.

FS 5.220:20089

Survey of Research on Grouping as Related to Pupil Learning. Jane Franseth and Rose Koury. 1966. 64 p. 40¢

A comprehensive summary of elementary school grouping. Topics include: ability grouping, individualizing instruction, social and emotional development, the non-graded school, and a brief study of the teacher's role in dealing with various group situations.

FS 5.220:20095

Stepping Up With PACE (Projects to Advance Creativity in Education). 1967. 62 p. 65¢

Stories collected by Office of Education staff members in visits to operational PACE projects illustrate how typical communities are co-ordinating their resources and using a variety of imaginative approaches to bring better educational opportunities to children through PACE projects.

FS 5.220:20097

What's New in the ESEA Amendments (reprinted from *American Education* February 1967). 1967. 3 p. 10¢

Describes major amendments to the Elementary and Secondary Education Act of 1965.

25000-25999

**Guidance, Counseling,
Testing**

FS 5.225:25003

Understanding Testing: Purposes and Interpretations for Pupil Development. Kenneth F. McLaughlin, ed. 1960; reprinted 1963. 24 p. 25¢

Reprints from *School Life* on the types of tests available, the building of tests, and the administration of testing programs, with a glossary of measurement terms.

FS 5.225:25027

An Approach to Individual Analysis in Educational and Vocational Guidance. David Segel, Frank E. Wellman, and Allen T. Hamilton. 1958; reprinted 1962. 39 p. 20¢

A reappraisal of the significant steps in the measurement program of secondary schools growing out of the question "How can we improve the selection of students for vocational education?"

FS 5.225:25032

Guidance for Children in Elementary Schools. Hyrum M. Smith and Louise O. Eckerson. 1963. 22 p. 15¢

Reviews guidance practices shared by 24 programs rated outstanding by State Directors of Guidance; makes cautionary recommendations about the certification of the profession.

FS 5.225:25036-A

Directory of Counselor Educators. Hubert W. Houghton and William E. Johnston, Jr. 1964. 82 p. 50¢

Alphabetical listing of States, with counselor education institutions arranged alphabetically and with an alphabetical listing of staff members for each institution.

FS 5.225:25038

Interpretation of Test Results. Kenneth F. McLaughlin. 1964. 63 p. 30¢

Explains the uses and limitations of regularly administered tests, to enable administrators, counselors, and teachers to interpret better their meaning to parents and students.

FS 5.225:25040

Teacher Influence, Pupil Attitudes, and Achievement. 1965. 126 p. 50¢

Concerns the degree to which students' attitudes affect their subsequent achievement and the influence of different teaching methods on the development of such attitudes. Data are furnished to help those concerned with problems of teacher preparation, inservice training, supervision, and evaluation.

FS 5.225:25042

Counselor Education in Regular Session Institutes. George A. Piereson. 1965. 100 p. 35¢

Evaluates the NDEA Counseling and Guidance Institutes Program.

FS 5.225:25043

Progress Toward the Goals of Project Talent. 1965. 11 p. 15¢

This study involved the administration of a two-day battery of aptitude, ability, and achievement tests, plus a detailed inventory of background characteristics and plans for 440,000 secondary students across the Nation. One thousand school administrators and the principals and teachers in 1,853 secondary schools cooperated in this survey of a selected sample of U.S. schools.

FS 5.225:25044

Inservice Education for School Counselors. Don Twiford and Frank L. Sievers. 1965. 16 p. 15¢

Presents national conference group viewpoints regarding inservice education for school counselors.

FS 5.225:25045

Guidance Services in Elementary Schools: A National Survey. Hyrum M. Smith and Louise O. Eckerson. 1966. 143 p. 55¢

Deals with the selection of guidance personnel and their functions, and with concepts of principals regarding their schools' needs in guidance. Useful in formulating effective guidance programs.

FS 5.225:25046

Cost of Secondary School Guidance Services. O. Ray Warner. 1965. 25 p. 25¢

Presents cost data obtained from an Office of Education national study for the school year 1960-61, statistics from schools participating in title V-A programs under the National Defense Education Act during the school year 1962-63, and other related data.

FS 5.225:25050

Certification Requirements for School Pupil Personnel Workers. Hubert W. Houghton. 1967. 147 p. 60¢

Presents, for each State and outlying area concerned, the certification requirements as of January, 1966, for school counselors in secondary schools and, where they exist and are so specified, for school counselors in elementary schools.

28000-28999

Health, Physical Education, Recreation

FS 5.228:28004

Selected References on Nutrition and School Lunch. Revised 1961. 17 p. 20¢

Bibliography of publications and visual aids available from various government agencies or the Government Printing Office. Includes ordering instructions.

FS 5.228:28005

Games and Self-Testing Activities for the Classroom. Elsa Schneider. 1959; reprinted 1961. 12 p. 10¢

Describes activities involving balance, agility, strength, flexibility, endurance, and fun. Many of these games can be carried on in limited space with little or no equipment.

FS 5.228:28006

State School Laws and Regulations for Health, Safety, Driver, Outdoor, and Physical Education. Zollie Maynard and Salvatore Rinaldi. 1964. 32 p. 30¢

Presents a concise summary of State laws and regulations affecting health, physical, safety, driver, and outdoor education in elementary and secondary schools in the States and outlying areas.

FS 5.228:28007

Good Posture for Boys and Girls. 1963. 12 p. 10¢

Designed to help elementary school teachers develop a basic understanding of good posture; it describes the characteristics of good posture in some of the basic body activities of children.

FS 5.228:28008

Physical Achievement and the Schools. George J. Collins and J. Scott Hunter. 1965. 27 p. 20¢

Reports the results of a survey designed to obtain information on the status of physical development programs in elementary and secondary schools, public and private.

30000-30999

Language Arts

FS 5.230:30010

Needed Research in the Teaching of English: Proceedings of a Project English Research Conference. Erwin R. Steinberg. 1963. 134 p. 55¢

The conference was convened at Carnegie Institute of Technology, May 5-7, 1962, to identify and assign priorities to pressing research problems in the teaching of English at all levels. Included are 11 papers presented by specialists in English and English education, psychologists, and specialists in testing. A Cooperative Research Program monograph.

FS 5.230:30014

Teaching Young Children to Read. Warren G. Cutts. 134 p. 55¢

Based upon a conference on beginning reading instruction, and contains reports from Canada and England, as well as from the United States.

FS 5.230:30018

Language Ability Grades Seven, Eight, and Nine. Walter Loban. 1966. 94 p. 50¢

Concerned specifically with the children's use and control of language, their effectiveness in communication, and the relationship among their abilities in speaking, writing, listening, and reading.

FS 5.230:30019

Book Selection Aids for Children and Teachers in Elementary and Secondary Schools. Milbrey L. Jones. 1966. 16 p. 15¢

Describes some of the more useful reading lists now available to elementary and secondary school teachers, librarians, curriculum workers, and students themselves.

36000-36999**Rural Education****FS 5.236:36000**

Selected Indexes of Rural School Finance in the United States, 1955-56. Walter H. Gaumnitz. 1959. 19 p. 20¢

An inquiry into four aspects of the matter: salaries of instructional staff, total per-pupil expenditures, expenditures for pupil transportation, and the relationships between school salaries and family incomes.

FS 5.236:36001

Small Schools Are Growing Larger: A Statistical Appraisal. Walter H. Gaumnitz. 1959. 21 p. 20¢

An account of the changes being made in the small, particularly rural, school and the administrative accommodations involved.

FS 5.236:36005

Supervision in Rural Schools. Jane Franseth. Revised 1965. 57 p. 25¢

Discusses the different environments in which rural supervisors work. Highlights some of the special tasks and problems they face.

29000-29999**Science, Mathematics****FS 5.3:954/9**

Curriculum Materials in High School Mathematics. Kenneth E. Brown. 1954. 40 p. 20¢

Analyzes 135 courses of study and gives general characteristics of local and State curriculum guides; compares State guides from 1932 to 1952, and discusses methods of developing curriculum materials.

FS 5.229:29006

General Facilities and Equipment: Part I, Science and Mathematics in Public High Schools, 1958. Ellsworth S. Obourn and Kenneth E. Brown. 1960. 70 p. 30¢

Data helpful in determining shortages of facilities in public high schools of different types and sizes, and in pointing the way to effective use of funds available through the National Defense Education Act.

FS 5.229:29007-60

Analysis of Research in the Teaching of Mathematics, 1959 and 1960. Kenneth E. Brown and others. 1963. 69 p. 30¢

Summaries and analysis of research studies published to stimulate more research and more effective use of research on the teaching of high school mathematics. A series report prepared with the National Council of Teachers of Mathematics since 1952.

Also available:

—1957 and 1958. 50 p. 25¢

—1955 and 1956. 73 p. 25¢. FS 5.3:958/4

FS 5.229:29021

Offerings and Enrollments in Science and Mathematics in Public High Schools, 1958. Kenneth E. Brown and Ellsworth S. Obourn. 1961. 87 p. 35¢

An inquiry into trends in curriculum revision and enrollments, in selected public high schools. Data is given by geographic regions, size of classes, and ratio of boys to girls.

FS 5.229:29023

Science as a Way of Life. Ellsworth S. Obourn. 1961. 27 p. 15¢

A short report growing out of talks given by the author to groups of science teachers and others concerned with improving science education in elementary and secondary schools. Includes a checklist for rating a school's science program.

FS 5.229:29025-A

The Major Principles of Physics, Chemistry, and Geology of Importance for General Education. Harold E. Wise. 1961; reprinted 1962. 27 p. 20¢

FS 5.229:29026-A

The Major Principles of the Biological Sciences of Importance for General Education. W. Edgar Martin. 1948; reprinted 1962. 34 p. 25¢

Short statements of principle, listed by number under topic headings, prepared to assist in the planning of new secondary school courses.

FS 5.229:29029

Science Equipment and Materials for Elementary Schools: Suggestions for Supervisors, Administrators, and Teachers. Albert Piltz. 1961; reprinted 1963. 66 p. 30¢

Discusses criteria for selection of materials and the orientation of teachers and supervisors in their use. Equipment lists are given in five appendixes.

FS 5.229:29032

The Leadership Role of State Supervisors of Mathematics. Report prepared by Daniel W. Snader. 1962. 107 p. 35¢

The proceedings of a conference of State supervisors, June 19-23, 1961, called by the Office of Education to consider the evolving mathematics curriculum, inservice and pre-service education for teachers, and the implications of research findings in the field of mathematics teaching, as an aid in evaluating a State's program for strengthening mathematics teaching.

FS 5.229:29034

Aids for Teaching Science: A Suggested Checklist for a Science Program. 1962; reprinted 1963. 11 p. 15¢

A guide to assessing school programs, applicable at all levels and in schools of varying size.

FS 5.229:29037

Steps in Excellence: A Program To

Improve Science Teaching. 1962. 12 p. 15¢

A suggested statewide program of 7-step pilot projects, aimed at stimulating local school authorities to use public funds increasingly available to them for improving science instruction.

FS 5.229:29039

Supervision for Quality Education in Science. 1963. 171 p. 65¢

Explores new concepts and materials related to the teaching of various fields of elementary and secondary science, and offers guidelines for strengthening the supervision of science education, at State and local levels. Includes summaries of papers presented at the 1962 State Science Supervisor's Meeting.

FS 5.229:29042

Elementary School Mathematics: New Directions. Edwina Deans. 1963. 116 p. 50¢

A description, including samples of content, of the new programs in process of development for elementary grades and their rationale.

FS 5.229:29043

Supervision for Quality Education in Science. Reprint from *School Life*, October 1962. 1963. 35 p. 25¢

Briefs of papers presented at a working conference of State science supervisors and consultants, held in June 1962 under the auspices of the Office of Education. A preliminary report.

FS 5.229:29045

Science and Mathematics Teachers in Public High Schools. Ellsworth S. Obourn and Kenneth E. Brown. 1963. 37 p. 20¢

A report on the current size of the teaching force in the two fields to aid inservice education programers. Teachers of one class and of four or more classes; teachers of both subjects; inexperienced teachers. Teacher turnover.

FS 5.229:29046

Science Publications: An Annotated Guide to Selected Listings. Albert Piltz. 1963. 65 p. 40¢

Contains a representative sampling of the

numerous lists of materials available, grouped in six categories, by publisher.

FS 5.229:29047

Modern Mathematics and Your Child. 1963. 28 p. 20¢

Answers to the questions "What is modern mathematics?" and "Why the change?" and also "How can parents help?"

FS 5.229:29048

Modern Science and Your Child. Albert Piltz and William J. Gruver. 1963. 40 p. 25¢

Describes what is new in science education, primarily with parents in mind who have children considering science careers. Includes a checklist and a reading list.

FS 5.229:29049

Science Equipment and Materials: Science Kits. Albert Piltz and William J. Gruver. 1963. 26 p. 15¢

A guide to evaluating and using these newly abundant packaged materials.

FS 5.229:29056

Inservice Mathematics Education. Veryl Schult and Theodore L. Abell. 1964. 129 p. 50¢

Contains the reports delivered by the State supervisors who attended a national conference sponsored by the U.S. Office of Education in Washington, D.C., March 7-8, 1963.

FS 5.229:29058

Space-Oriented Mathematics for Early Elementary Grades. Edwina Deans. 1964. 46 p. 30¢

Presents a series of mathematics lessons closely related to space age science, with teaching suggestions for each. Developed primarily for the use of State supervisors of mathematics and spacemobile lecturers of the National Aeronautics and Space Administration.

FS 5.229:29060

Emerging Twelfth-Grade Mathematics Programs. Lauren G. Woodby. 1965. 40 p. 20¢

Provides examples of promising practices in selected high schools. Source of ideas for mathematics teachers and school ad-

ministrators concerned with the nature of 12th-grade mathematics programs.

FS 5.229:29061

The Low Achiever in Mathematics. Lauren G. Woodby. 1965. 96 p. 35¢

Report of a conference held in Washington, D.C., March 1964, sponsored jointly by the U.S. Office of Education and the National Council of Teachers of Mathematics, to consider the sociological and psychological factors in low achievement and to study existing practices that appear promising.

FS 5.229:29063

Elementary Arithmetic and Learning Aids. Patricia M. Spross. 1965. 134 p. \$1

Points out some fundamentals to the use of learning aids, and suggests specific examples for the use of visual and manipulative devices in elementary classroom presentations. Designed to help teachers in their inservice programs to acquire the knowledge and skills necessary for the effective teaching of modern mathematics.

FS 5.229:29064

Mathematics Instruction and Supervision. Veryl Schult. 1966. 62 p. 30¢

Information was collected through visits during 1963 and 1964 to 22 large cities which have ongoing programs and are introducing new practices and methods in mathematics. The summary should be helpful to teachers, administrators, curriculum workers, and supervisors.

FS 5.229:29066

The Lively Third R (reprinted from *American Education*, June 1966). Edwina Deans, Kenneth E. Brown, and Veryl Schult. 1966. 5 p. 15¢

Provides information about new trends in mathematics education.

FS 5.229:29067

Science Teaching in the Public Junior High School. Lola Eriksen Rogers. 1967. 57 p. 45¢

Includes information on overall school organization as well as on procedures, practices, and conditions affecting science instruction in public junior high schools.

31000-31999

Social Studies

FS 5.231:31000

Social Studies in the Elementary School Program. Wilhelmina Hill. 1960. 110 p. 50¢

Shows how the new curriculums are reflecting our age of aerospace and international cooperation.

FS 5.231:31004

Teaching about Human Rights. Wilhelmina Hill and Howard C. Cummings. 1965. 10¢

Suggests ways in which elementary and secondary pupils can study about human rights throughout the year.

FS 5.231:31007

School Social Work, A Service of Schools. 1964. 65 p. 30¢

Deals with school social work. Discusses current problems in American education, pupil personnel services, present practices in school social work, State level leadership, administration, and financial support.

FS 5.231:31009

Conservation Experiences for Children. Effie G. Bathurst and Wilhelmina Hill. 1964. 192 p. 75¢

Tells how U.S. children are learning to conserve the Nation's reserves of soil, water, forests, fish, wildlife, minerals, and other natural resources. This bulletin is to serve as a source of good practices—to be consulted for ideas and not necessarily to be read chapter by chapter.

33000-33999

Other Subjects and Activities
General Teaching Methods

FS 5.3:951/2

Culloden Improves Its Curriculum: New Enterprises in Education Series. Lucille McGraw Richmond. 1951. 24 p. 15¢

Tells how pupils and staff of this elementary school, after a critical look at its unsatisfactory program, evolved a curriculum designed to meet home and community needs.

FS 5.34:7

Teaching Nutrition in the Elementary School. Ruth Wood Gavian and others. 1955. 32 p. 25¢

Contains suggestions for developing an effective program in the elementary schools, and lists up-to-date sources of nutrition information—bulletins, articles, and books.

FS 5.233:33007

Drama with and for Children. Winifred Ward. 1960. 30¢

Offers guidance in how to introduce children to creative dramatics and how to establish a community theater for children.

FS 5.233:33022

Improving Industrial Arts Teaching: Conference Report, June 1960. Marshall L. Schmitt. 1962; reprinted 1963. 67 p. 60¢

Papers, discussion highlights, and recommendations for the profession, as presented at a conference called by the Commissioner of Education, June 20-21, 1960.

FS 5.233:33025

What High School Pupils Study: A National Survey of the Scholastic Performance of Pupils of Various Abilities. Edith S. Greer and Richard M. Harbeck. 1962. 146 p. 60¢

Gives data on programs completed in 1958 showing, in terms of school size, pupil ability, class rank, and sex: average credits per pupil in specific areas; average graduation credits per pupil; percentage of pupils receiving various amounts of credit in selected areas; overall program patterns of pupils; types of curriculums; and education beyond high school.

FS 5.233:33028

State Curriculum Guides for Industrial Arts, 1951-61. Marshall L. Schmitt and Albert L. Pelley. 1962. 23 p. 15¢

An annotated bibliography of instructional materials currently used by the States. Revises a 1958 publication of the same title.

FS 5.233:33030

Core Program: Unpublished Research, 1956-62. Grace S. Wright. 1963. 58 p. 40¢

Summaries of 57 doctoral dissertations and State and university studies completed in this period, and analysis of the findings under the headings; initiation and development, teacher education, instructional practices, and evaluation of effectiveness.

FS 5.233:33031

Why the Industrial Arts. Marshall L. Schmitt. 1963. 8 p. 10¢

Describes how industrial arts make a contribution at all levels of public education.

FS 5.233:33033

Music in Our Schools, A Search for Improvement. Claude V. Palisca. 1964. 61 p. 30¢

Report of the Yale University Seminar on Music Education. Attempts to set down the thoughts of 31 musicians, scholars, and teachers intent on improving elementary and secondary school music.

FS 5.233:33034

Industrial Arts Courses, Preliminary Report. Marshall L. Schmitt. 1964. 4 p. 5¢

Gives statistical information concerning industrial arts courses in public schools, grades 7-12.

FS 5.233:33038

Industrial Arts Education: A Survey of Programs, Teachers, Students, and Curriculum. Marshall L. Schmitt and Albert L. Pelley. 1966. 138 p. \$1.

Provides, for the first time, a comprehensive review of the industrial arts program in the public secondary schools of the United States as of school year 1962-63.

FS 5.233:33042

Pliés Please (reprinted from *American Education*, June 1966) Caryl Conner. 1966. 15¢

Discusses an Office of Education grant project which is developing a comprehensive graded curriculum for dance at the Philadelphia Dance Academy.

FS 5.233:33043

Sonata for Two Clarinets (reprinted from *American Education*, Feb. 1967). Harold W. Arberg and Charles S. Carleton. 1967. 4 p. 10¢

Shows the results of a cooperative research contract which the Office of Education awarded to Manhattanville College of the Sacred Heart, Purchase, N.Y., to study selected unique or experimental music programs in the Nation's elementary and secondary schools.

FS 5.233:33044

High School and the Cultural Illiterate (reprinted from *American Education*, Nov. 1966). Glendy Culligan. 1967. 5 p. 15¢

Concerns innovations in the arts and humanities in high schools throughout the Nation and their promise of a widening horizon for many students who will never get to college.

HIGHER EDUCATION

53000-53999

Administration, Faculties, Salaries

FS 5.253:53000-64

Faculty and Other Professional Staff in Institutions of Higher Education, Fall Term 1963-64. Ralph E. Dunham and Patricia S. Wright. 1966. 100 p. 60¢

Provides information on faculty and other professional staff in institutions of higher education. Fifth separate circular issued by the Office of Education on the subject; it is based on a national survey conducted in the fall of 1963.

Also available:

- 1961-62. 98 p. 60¢
- 1959-60. 80 p. 55¢
- 1957-58. 68 p. 45¢

FS 5.253:53002

Administration of Higher Education: Bibliography. Walter Crosby Eells and Ernest V. Hollis. 1960. 410 p. \$1.50

A listing of 2,798 items published between 1950 and 1959 covering organization, Federal relations, students, curriculum, public relations, administration of faculty.

FS 5.253:53004-61

Higher Education Planning and Management Data, 1960-61: Salaries, Tuition and Fees, Room and Board. W. Robert Bokelman. 1961. 91 p. 50¢

Included are comparisons for private and public institutions and charts of salary ranges.

Also available:

- 1959-60. 104 p. 70¢

FS 5.253:53005

State Boards Responsible for Higher Education. S. V. Martorana and Ernest V. Hollis. 1960. 254 p. \$1.50

A factual State-by-State description of arrangements made by the States for governing and coordinating their programs of higher education.

FS 5.253:53006

Student Financial Aid in Higher Education: An Annotated Bibliography. Walter C. Eels and Ernest V. Hollis. 1960; reprinted 1962. 87 p. 35¢

A list of 451 titles of published materials on scholarships, fellowships, loans, assistantships and other part-time employment, and foreign study.

FS 2.253:53007

Advance Planning to Meet Higher Education Needs: Recent State Studies, 1956-59. S. V. Martorana and James C. Messersmith. 1960. 33 p. 30¢

Reviews 153 joint institutional studies of varying character initiated by State legislative action or by boards of regents, higher education councils, governors' committees and commissions, and State boards of education.

FS 5.253:53008

The College Presidency, 1900-1960: An Annotated Bibliography. Walter Crosby Eells and Ernest V. Hollis. 1961. 143 p. 60¢

A list of 700 publications on the college president—his duties and responsibilities for special phases of administration; selection, qualifications, personal factors; biographies.

FS 5.253:53009

Job Motivations and Satisfaction of College Teachers. Ruth E. Eckert and John E. Stecklein. 1961. 96 p. 35¢

A report by professors at the University of Minnesota on factors influencing its faculty in choosing college teaching as a career, the nature of their background and training, their present job responsibilities, and their ideas for attracting qualified candidates to the field.

FS 5.253:53010

Trends in Higher Education Planning and Management Data, 1957-58 to 1959-60; An Analysis of Changes in Salaries, Tuition and Fees, Room and Board. W. Robert Bokelman and Louis A. D'Amico. 1961. 19 p. 25¢

An analysis of data over a 3-year period, by institutional type and control, size of enrollment, and region.

FS 5.253:53011

Guide to College and University Business Management. Paul K. Nance and Leslie F. Robbins. 1965. 196 p. 60¢

Discusses nine major functions for which the chief business officer is usually responsible. A number of other functions for which he shares responsibility are also listed.

FS 5.253:53012

Internal Structure: Organization and Administration of Institutions of Higher Education. Archie R. Ayers and John H. Russel. 1962. 123 p. 45¢

A survey and analysis of institutional organization to aid planners in evaluation and modification, based on current organization charts of 608 institutions. Discusses problems and issues of reorganization.

FS 5.253:53015-64

Higher Education Salaries, 1963-64. Louis A. D'Amico. 1965. 66 p. 40¢

Salaries are shown by faculty rank, and for four ranks combined. (Data for junior colleges are reported for the combined ranks only.) Includes salaries for deans and administrative positions. Data analyzed by control (public or private), region, type of institution, and enrollment, with separate tables for faculty on 9-10- and on 11-12-month schedules.

Also available:

—1962-63. 70 p. 50¢

FS 5.253:53016

Sabbatical Leave in American Higher Education: Origin, Early History, and Current Practices. Walter Crosby Eells and Ernest V. Hollis. 1962. 77 p. 30¢

A definitive history of early practices based on primary sources, and a description of current practices in 72 institutions. Prepared in part with the young college teacher in mind who will need advanced inservice graduate study.

FS 5.253:53017-58

Statistics of Higher Education, 1957-58; Faculty, Students, and Degrees. Edith M. Huddleston, Henry G. Badger, and Bronson Price. 1962. 165p. \$1.25

Data are presented primarily for historical reference but include materials not given elsewhere for 1957-58; analyses by type, control, and size of institutions; analyses relating enrollments to population, and analyses of types of enrollment and types of faculty positions.

FS 5.253:53018

Instructional Staff in Institutions of Higher Education, Projected to 1970-71. Kenneth A. Simon and Louis H. Conger. 1963. 9 p. 10¢

The projections—on staff for resident degree-credit courses—rest on the assumption that total college enrollment will increase to 7 million by 1970 and the student-staff ratio, to 14 to 1.

FS 5.253:53019

What Standards Do We Raise? Winslow R. Hatch. 1963. 28 p. 15¢

Proposes 21 criteria of excellence in standards of higher education related to instruction practices, student selection, program planning, and staffing. No. 12 in the New Dimensions of Higher Education series.

FS 5.253:53020

Case Studies in the Liberal Arts College, Academic Administration. John H. Russel and Archie R. Ayers. 1964. 184 p. 70¢

Report of a study by the U.S. Office of Education, in cooperation with nine privately controlled or church-related liberal arts colleges. Provides suggestions and guidelines for institutional self-study and evaluation in the area of academic administration.

FS 5.253:53021

Church-Related Boards Responsible for Higher Education. James C. Messersmith. 1964. 230 p. \$1

Constitutes a description of the organization and functions of denominational boards and related agencies having governing, coordinating, supervisory, or other working relationships with groups of church-related colleges and universities. Designed to satisfy the need for more adequate and current information on interinstitutional coordination and control of nonpublic higher education.

FS 5.253:53022

Teaching Faculty in Higher Education, 1962-63: Primary Teaching Areas and Contract Salaries, Preliminary Report. Ralph E. Dunham and Patricia S. Wright. 1964. 23 p. 20¢

Reports on the number and percent of teaching faculty in primary teaching areas in higher education classified by type, control, and faculty size of employing institution. Also included are contract salaries, 1962-63, of teaching faculty in higher education, classified by primary teaching field, contract period, geographical region, rank, type, control, and faculty size of employing institution.

FS 5.253:53024

College and University Endowment, Status and Management. D. Kent Halstead. 1965. 81 p. 60¢

Presents the findings of the Office of Education's Endowment Survey for fiscal year 1963, plus related historical data derived from the biennial surveys of Financial Statistics of Higher Education.

FS 5.253:53025

Business Management in Selected Colleges and Universities. Paul K. Nance. 1966. 125 p. 50¢

A case study report of actual business management operations in selected colleges and universities. Includes not only descriptions of practices but also judgments of the business officers as to evaluations and determinants of effectiveness.

FS 5.253:53027

Business Management: Survey of Chief Business Officers of Colleges and Universities. Leslie F. Robbins and Paul K. Nance. 1966. 18 p. 30¢

Ascertains from a sample study of three types of institutions (universities, liberal arts

colleges, and junior colleges) some of the characteristics of the position of chief business officer and of the people who held that position in May of 1965.

FS 5.253:53028

Staffing American Colleges and Universities. James F. Rogers. 1967. 220 p. 65¢

Study of the demand for faculty and other professional staff in institutions of higher education in the United States. The findings of this study should be meaningful to all concerned with staffing our colleges and universities during the present decade and beyond.

54000-54999

**Admission, Enrollment,
Degrees, Retention,
Graduates**

FS 5.254:54000-63

Resident, Extension, and Other Enrollments in Institutions of Higher Education: Fall 1963. Mabel C. Rice. 1965. 88 p. 65¢

Detailed data for individual institutions in the aggregate United States. Includes summary data on veterans and on students enrolled in correspondence courses, short courses.

Also available:

1959. 64 p. 50¢

FS 5.254:54001-62

Junior Year Science and Mathematics and Foreign Language Students, First-Term 1962-63. Wayne E. Tolliver. 1964. 85 p. 55¢

A nationwide survey of resident junior year college and university majors in the biological sciences, physical sciences, and mathematics to serve in estimating probable future supplies of scientific manpower. Includes figures on enrollment and degrees in these fields.

Also available:

—1959. 73 p. 45¢

FS 5.254:54003-65

Opening (Fall) Enrollment in Higher Education, 1965. 1966. 90 p. 50¢

Gives total and first-time fall degree-credit enrollment, by sex and institution. The twentieth annual survey, incorporating information reported by more than 2,000 institutions of higher education.

Also available:

- 1964. 83 p. 50¢
- 1963. 68 p. 40¢
- 1962. 35 p. 30¢
- 1961. 34 p. 25¢
- 1960. 35 p. 30¢

FS 5.254:54006-63

Engineering Degrees, 1962-63, and Enrollments, Fall 1963. Ralph E. Dunham and Harold A. Foecke. 1965. 64 p. 40¢

Gives data for the 1962-63 school year in text and tables with comparisons with previous years. Includes detailed tables showing enrollments and degrees by level, curriculum, State, and institution, for 1961. The 13th in an annual series prepared with the American Society for Engineering Education.

Also available:

- 1961. 45 p. 35¢
- 1960. 44 p. 35¢

FS 5.254:54007-60

Opening Fall Enrollment in Higher Education, 1960: Analytic Report. Edith M. Huddleston. 1961. 43 p. 35¢

A count early in the school year of resident or extension students enrolled in courses creditable toward bachelor's or higher degrees, with analysis of trends and interrelationships revealed by the data.

FS 5.254:54010-65

Summary Report on Bachelor's and Higher Degrees Conferred During the Year 1963-64. 1966. 9 p. 15¢

Includes information from all of the 1,474 institutions of higher education which granted bachelor's or higher degrees in the aggregate United States (the 50 States, District of Columbia, and outlying areas) during 1963-64.

FS 5.254:54013-64

Earned Degrees Conferred, 1963-64: Bachelor's and Higher Degrees. Patricia Wright. 1966. 283 p. \$1.75

Data are given by field of study, degree level, sex, institutional type and control, and by individual institution, and are analyzed for trends in particular fields of study and

in broad areas or groups of fields. The 17th survey in a series.

Also available:

- 1962-63. 280 p. \$1.75
- 1961-62. 235 p. \$1.50

FS 5.254:54016

Doctoral Study: Fellowships and Capacity of Graduate Schools. John L. Chase. 1961; reprinted 1963. 65 p. 45¢

A study based on a survey of 139 doctorate-granting institutions in 1959 to ascertain the Nation's capacity to train its urgently needed college teachers.

FS 5.254:54019-64

Enrollment for Master's and Higher Degrees, Fall 1964. 96 p. 70¢

Presents data obtained by the Office of Education in a nationwide survey of students enrolled for advance degrees. The purpose of the survey is to meet the need for data bearing on the flow of graduate students into the world of employment.

Also available:

- 1965. 265 p. \$1.50
- 1961. 197 p. \$1.25

FS 5.254:54023

Factors Related to College Attendance. Robert H. Beeber and Howard F. Hjelm. 1961; reprinted 1963. 42 p. 20¢

Selected findings of statewide surveys conducted in Arkansas, Indiana, and Wisconsin which attempted to identify the distinguishing characteristics in the lives of academically talented students who either did or did not enroll in college.

FS 5.254:54025

Total Enrollment in Institutions of Higher Education, First Term, 1959-60: Basic Data. Hazel C. Poole, Mabel C. Rice, and others. 1962. 69 p. 55¢

Gives descriptive data on the various types of enrollment, shown separately for publicly and privately controlled institutions and for 4-year institutions and junior colleges. Institutional and State data are also shown. Based on a biennial survey, it complements the annual opening (fall) enrollment survey.

FS 5.254:54029

Degrees in the Biological and Physical Sciences, Mathematics and

Engineering. Clarence B. Lindquist. 1963. 35 p. 35¢

Analysis of figures given for an 11-year period. Intended in part for those considering manpower problems related to the national welfare.

FS 5.254:54031

Earned Degrees by Field of Study and Level Projected to 1975. Marie G. Fullam and Frances E. Ryan. 1964. 32 p. 20¢

Presents projections of the number of degrees that will be earned in the United States at each level in selected fields of study through 1975.

FS 5.254:54032

Comprehensive Report on Enrollment in Higher Education, First Term 1961-62, and Summer Sessions 1961. Edith M. Huddleston and Naomi A. Sulkin. 1964. 85 p. 60¢

Contains basic data on student enrollment in the Nation's colleges and universities. Total enrollment figures representing all institutions are furnished for all enrollment categories. Totals for publicly and privately controlled 4-year institutions and totals for publicly and privately controlled junior colleges are included.

FS 5.254:54034

College Applicants, Entrants, Drop-outs. Robert E. Iffert and Betty S. Clarke. 1965. 88 p. 35¢

Explores causes of college dropout and failure of high school graduates to enroll in institutions of higher education which have accepted them. Valuable to anyone concerned with who attends college, who does not, and why.

51000-51999

Buildings, Equipment

FS 5.251:51002-61

New Construction and Rehabilitation on College Campuses, 1959-60 and 1960-61. W. Robert Bokelman. 1963. 54 p. 40¢

A detailed analysis of progress in the area is given, by aggregate gross dollars, public and private control, functional type of fa-

cility, geographic region, source of funds, per-student expenditure, and per-square-foot cost.

Also available:

—1951-59. 57 p. 40¢

FS 5.251:51003

Casebook on Campus Planning and Institutional Development: Ten Institutions—How They Did It. John B. Rork and Leslie F. Robbins. 1962. 162 p. \$1.25

Ten factual reports on a diversity of campus planning undertakings, written from different professional points-of-view. Intended to give encouragement and specific advice to campus planners.

FS 5.251:51005

Motion Picture Production Facilities of Selected Colleges and Universities. Don G. Williams and Luella V. Snyder. 1963. 345 p. \$1.25

Report of a survey, prepared by the University Film Foundation, showing the production potential of university film units—their staff resources, physical facilities, services, administrative support, and record of performance.

FS 5.251:51006

College and University Facilities Survey, Part 4: College and University Enrollment and Facilities Survey, 1961-65. Leslie F. Robbins and W. Robert Bokelman. 1964. 112 p. 75¢

Summarizes data provided by colleges and universities showing how they planned and financed capital facilities during 1960-61 and how they proposed to do so through 1965-66.

FS 5.251:51007

College and University Facilities Survey, Part 3. E. Eugene Higgins and Mary B. Fuller. 1965. 573 p. \$3.50

Presents a census of college and university plants and related data. It describes the amount of space institutions have, its use, type of construction, date of initial occupancy, and condition. The data should be found valuable in the administration of Title II of the Higher Education Facilities Act of 1963 (Grants for Construction of Graduate Academic Facilities).

FS 5.251:51009

College and University Facilities Survey, Part 5: Enrollment and Facilities of New Colleges and Universities Opening Between 1961 and 1965. Leslie F. Robbins and W. Robert Bokelman. 1965. 50 p. 35¢

Information compiled in this survey of 181 new institutions and branch campuses opening between 1961 and 1965 brings into focus the plans of new and existing institutions to accommodate the greatly increased enrollments expected in the future.

FS 5.251:51011

New Construction and Rehabilitation on College Campuses, 1961-62, 1962-63, and 1963-64. Leslie F. Robbins. 1966. 79 p. 50¢

Data in this report are analyzed by several categories: by control, public and private; by region and State; by primary function of facility; by cost per gross square foot; by source of funds; and by category "new construction" or "rehabilitation."

FS 5.251:51012

The Campus Landscape (reprinted from *American Education*, May 1966). Jay Du Von. 1966. 7 p. 15¢

Shows how the provision of Government grants and loans made available through the Higher Education Act of 1965 has improved college campuses.

FS 5.251:51013

New Shapes for Ivory Towers (reprinted from *American Education*, November 1966). 1966. 4 p. 10¢

Gives information about the Design Awards Program, sponsored jointly by the U.S. Office of Education, American Institute of Architects, and the Educational Facilities Laboratories.

55000-55999**Costs and Financial Assistance****FS 5.255:55011**

National Defense Student Loan Program: Student Borrowers, Their Needs and Resources. Robert C.

Hall and Stanton Craigie. 1962. 80 p. 55¢

Tables and text based on returns from students who borrowed between July 1 and November 1, 1960. An aid in assessing the extent to which the program is encouraging and assisting capable young people to continue with higher education.

FS 5.255:55014

Modern Foreign Language Fellowships, 1961-1962. 1960. 5¢

Brief outline of terms of eligibility, duration, stipends and allowances, application procedures, for study of languages approved under the National Defense Education Act.

FS 5.255:55019

National Defense Student Loan Program: A 2-Year Report. Robert C. Hall. 1961. 44 p. 35¢

Discusses basic policy determinations for institutional participation in financial aid programs, and analyzes statistical data submitted by colleges and universities from initiation of the NDEA program in February 1959 to June 1960.

FS 5.255:55020

National Defense Graduate Fellowship Program, Title IV—National Defense Education Act: A Report on the First Two Years. Robert M. Rosenzweig and Gerald W. Elbers. 1961. 12 p. 15¢

Assesses the impact of the program in preparing students for college and university teaching, by supporting new and expanded programs of graduate study and awarding 3-year fellowships.

FS 5.255:55027

Financial Assistance for College Students: Undergraduate. Compiled by Richard C. Mattingly. 1962; reprinted 1963. 360 p. \$1.25

A directory primarily for students showing programs active in 1959-60 in 1,667 institutions. Includes a table of gross summaries, by State, for institutional scholarships, undergraduate employment and loans, and loans made under the National Defense Student Loan Program.

FS 5.255:55032

Financial Aid for College Students: Graduate. Richard C. Mattingly. 151 p. 1957; reprinted 1963. 50¢

A directory showing for each institution availability of fellowships, loans, and employment for graduate students in 1955-56.

FS 5.255:55034-68

Modern Foreign Language Fellowship Program, 1967-68. 1967. 15 p. 15¢

Describes the Modern Foreign Language Fellowship Program, administered by the U.S. Office of Education. Designed to help meet the critical national need for individuals equipped with knowledge and skills in modern foreign language and related studies.

FS 5.255:55035-A

Financing an Undergraduate Education. John H. Russel. 1965. 20 p. 15¢

General guidance for the high school student in need of financial aid to attend college.

FS 5.255:55036

Financing a Graduate Education. Richard C. McKee. 1964. 17 p. 15¢

General information concerning costs, personal and family resources, types of financial assistance, and sources of financial assistance to graduate students.

FS 5.255:55038-66

NDEA Institutes for Advanced Study, Summer 1966, and during 1966-67. 1966. 81 p. 20¢

Contains specific information about the NDEA Institutes for Advanced Study. A valuable aid for those desiring to attend an Institute to determine which will fulfill needs and requirements.

56000-56999

Curriculum

FS 5.256:56003

Trends in Engineering Education, 1949 to 1959. Henry H. Armsby. 1961. 67 p. 45¢

A survey of curriculums and degrees offered, to discover which fields of engineering education are the fastest growing. Includes a section on the development of the "three-two" program and the 5-year undergraduate program.

FS 5.256:56004

Graduate Study in Public Administration: A Guide to Graduate Programs. Ward Stewart. 1961. 158 p. \$1.25

The first comprehensive description of the 145 graduate programs in public administration currently offered by 83 institutions in the United States. Discusses some distinctive postwar programs.

FS 5.256:56006

Enrollment and Degrees in Agriculture, Institutions of Higher Education, September 1960. Henry S. Brunner. 1961. 69 p. 45¢

A survey of enrollments in agricultural colleges and universities and of degrees granted in agricultural curriculums in 1959. Contains tabulations by class, sex, and area of specialization.

FS 5.256:56008

Guide to Undergraduate Programs in Mathematics. Clarence B. Lindquist. 1962. 25 p. 25¢

An outline of the kinds of programs offered by the 864 higher institutions participating in a survey conducted in 1961, in tabular form. Entries are included for special programs such as honors and digital computers on campus.

FS 5.256:56009

Summer Session Offerings in Institutions of Higher Education, 1960: A Directory. Donald F. Warner, Bernice R. Retzlaff, and Harold A. Haswell. 1962. 106 p. \$1

A listing, under 80 subject fields, of graduate, undergraduate, and nondegree courses offered by State and individual institution. For companion study, see *Summer Sessions in Colleges and Universities of the United States, 1960* (OE-56012).

FS 5.256:56012

Summer Sessions in Colleges and Universities of the United States, 1960. Donald F. Warner, Bernice R. Retzlaff, and Harold A. Haswell. 1963. 65¢

A comprehensive survey of the status of summer sessions, 1960, to aid in planning academic programs that make maximum use of college facilities at a time of mounting

enrollments. See OE-56009 for a directory of summer session offerings, 1960.

FS 5.256:56016

Language and Area Centers. Donald N. Bigelow and Lyman H. Legters. 1964. 131 p. 55¢

Covers the first 5 years of the National Defense Education Act Language and Area Centers Program, and discusses the outlook of the program.

FS 5.256:56017

NDEA Language and Area Centers Program. 1964. 16 p. 20¢

Discusses the Language and Area Centers Program and the progress that has been made under this program since the passage of the National Defense Education Act in 1958. Tabular presentation shows list of centers broken down by institution and amount of Federal support that has been directed to the center.

FS 5.256:56018

Mathematics in Colleges and Universities. Clarence B. Lindquist. 1965. 104 p. 60¢

A comprehensive survey of graduate and undergraduate programs. The appendices provide specific information about master's and doctor's programs at individual institutions. Report should be valuable not only to mathematics educators, but also to deans and others responsible for curriculum development in colleges and universities.

FS 5.256:56021

Undergraduate Curriculum Patterns (1962-63). Harold A. Haswell. 1965. 95 p. 35¢

A survey of baccalaureate programs in selected fields in 1962-63. Useful to professional educators, particularly those responsible for curriculum development in institutions of higher education.

FS 5.256:56023

University-Sponsored Executive Development Programs in the Public Service. Ward Stewart. 1966. 75 p. 45¢

Reports an analysis of the variety of executive development programs and courses being offered throughout the United States. Aimed specifically at programs to train and stimulate "mid-career" executives.

FS 5.256:56024

Voice of the Silent Stage (reprinted from *American Education*, October 1966). Ellen Ferber. 1966. 5 p. 15¢

Tells how theater adds a new dimension to the lives of deaf students at Gallaudet College in Washington, D.C.

52000-52999

Finances

FS 5.252:52005-65-I

Higher Education: Basic Student Charges, 1964-65. Louis A. D'Amico. 1965. 49 p. 35¢

Gives average charges for tuition, required fees and board and room charges (men and women) of typical full-time undergraduate students, reported by control (public or private), type of institution, enrollment, and region.

FS 5.252:52006

Costs of Attending College: A Study of Student Expenditures and Sources of Income. Ernest V. Hollis and others. 1957; reprinted 1962. 91 p. 45¢

A survey of some 15,000 full-time single undergraduate students in 110 colleges across the country.

50000-50999

General

FS 5.250:50000-66

Higher Education, 1964-65. Part 3, Education Directory. Theresa Birch Wilkins. 1966. 242 p. \$1

Lists institutions of higher education offering at least a 2-year program of college-level studies in residence, by State, and their chief officers. Gives information on accreditation, control, student body, calendar system, and enrollment.

FS 5.250:50002-63

Statistics of Land-Grant Colleges and Universities: Year Ended June 30, 1963. George Lind. 1965. 136 p. \$1

Text tables contain data on enrollments, earned degrees, faculty, and finances for each of the land-grant institutions, arranged to show a comparison with similar data for all 4-year institutions of higher education and changes over intervals since 1939-40.

Also available:

- 1962. 128 p. \$1.00
- 1961. 112 p. 70¢
- 1961. 55 p. 40¢

FS 5.250:50004-7

Reporter: Clearinghouse of Studies on Higher Education. Winslow R. Hatch and Alice L. Richard. 1965. 64 p. 40¢

An annotated list of completed research on higher education deposited in the Clearinghouse by colleges, universities, and higher education associations in behalf of its effort to keep duplication of research to a minimum and also to identify some trends in higher education. Seventh in a series.

Also available:

- 1963. 53 p. 40¢
- 1962. 40 p. 30¢

FS 5.250:50008-64

State Legislation Relating to Higher Education. 1966. 150 p. \$1

An interpretive report containing abstracts of legislation (including that introduced but not enacted) affecting colleges and universities or establishing policies in the field of post-high school education.

FS 5.250:50010

The Experimental College. Winslow R. Hatch. 1960. 13p. 15¢

A survey of experimental programs making use of independent study and other new approaches in higher education. No. 3 in the New Dimensions in Higher Education series.

FS 5.250:50011

Impact of College. Mervin B. Freedman. 1960; reprinted 1963. 27 p. 15¢

A report of recent investigations on the sociology of higher education, to assist college teachers and administrators in assessing their influence on the student, particularly in the area of character development.

FS 5.250:50012

Accredited Higher Institutions, 1960.

Theresa Birch Wilkins. 1960. 120 p. 60¢

A list of institutions of higher education accredited by nationally recognized regional and professional accrediting agencies and State agencies, as of spring 1960. Replaces a 1956 edition.

FS 5.250:50013

The Management of Learning. E. D. Duryea. 1960. 38 p. 20¢

Draws on recent published and unpublished studies to give new insights into the theory and practice of college and university administration. No. 5 in the New Dimensions in Higher Education series.

FS 5.250:50014

Study Abroad. Irwin Abrams. 1960. 21 p. 15¢

A status report on programs of group study abroad with a section on problems of evaluation. Sixth in the series New Dimensions in Higher Education.

FS 5.250:50017

To Fulfill the Promise: A Hundred Years of Growth in the Land-Grant Colleges and Universities. Henry S. Brunner. October 1960. 16 p. 15¢

A reprint from *School Life* on the record of land-grant colleges and universities.

FS 5.250:50021

The Credit System in Colleges and Universities. Lanora G. Lewis. 1961. 37 p. 20¢

An appraisal of current modifications in the credit system with a brief history of its development. Ninth in the New Dimensions in Higher Education series.

FS 5.250:50023-60

Financial Statistics of Institutions of Higher Education, 1959-60: Receipts, Expenditures, and Property. Felix H. I. Lindsay. 1964. 191 p. \$1.25

A survey of general trends in higher education finance. Includes listings on payroll and staff benefits, gifts and grants of plant assets, and a detailed analysis of private gifts and grants for non-current purposes.

FS 5.250:50030

Land-Grant Colleges and Universities, 1862-1962. Henry S. Brunner. 1962. 78 p. 35¢

Gives chronologies of land-grant institutions, procedures by which the Office of Education administers Federal funds for instruction, and Federal laws relating to these funds. Tables show scope of operations of the institutions, 1960, and allotments made to colleges of agriculture and mechanic arts, 1962.

FS 5.250:50032

Flexibility in the Undergraduate Curriculum. Charles C. Cole, Jr., and Lanora G. Lewis. 1962. 57 p. 25¢

Shows that purposeful flexibility (in rate of progress and in depth of learning) is a valuable trend in higher education. Gives examples of the uses of flexibility in 13 institutions. The 10th in the New Dimensions in Higher Education series.

FS 5.250:50033

A Survey of Federal Programs in Higher Education. J. Kenneth Little. 1962. 56 p. 25¢

A preliminary summary in three parts: (1) programs and participating institutions, (2) effects of Federal programs on higher education, and (3) observations, conclusions, and recommendations. Prepared with a view to clarifying issues that require resolution in formulating Federal policies.

FS 5.250:50034

A Fierce Commitment (reprinted from *American Education*, November 1965). 1965. 8 p. 10¢

Gives an analysis and description of the Higher Education Act of 1965.

FS 5.250:50048

The Higher Education Act of 1965: Some Questions and Answers 1966. 38 p. 20¢

Questions and answers concerning each title of the Higher Education Act of 1965.

FS 5.250:50051

A Guide to Higher Education Consortiums: 1965-66. Raymond S. Moore. 1967. 175 p. \$1.25

This guide to higher education consortiums was developed as part of a study which will be completed later under the title *An Exploratory Study of Interinstitutional Cooperation in Higher Education, 1965-66*. College staff and faculty and others concerned with higher education consortiums should find uses for this guide.

57000-57999**Junior Colleges, Community Colleges****FS 5.257:57004**

State Formulas for the Support of Public 2-Year Colleges. D. G. Morrison and S. V. Martorana. 1962. 70 p. 30¢

Examines the various formulas and patterns of support for 2-year colleges, and reviews the practices followed in the support of these colleges in each State.

FS 5.257:57005

The 2-Year Community College: An Annotated List of Unpublished Studies and Surveys, 1957-61. D. G. Morrison, Ken August Brunner, and S. V. Martorana. 1963. 41 p. 20¢

Revision of a 1953-57 bibliography prompted by the rapid expansion of this institution. Annotations are listed under broad subject headings—financing, buildings, library, administration, and programs.

FS 5.257:57006

Procedures for the Establishment of Public 2-Year Colleges. D. G. Morrison and Clinette F. Wither-
spoon. 1966. 129 p. 55¢

Gives procedures for establishing local junior colleges, State junior colleges, technical institutes, and branch colleges and extension centers.

58000-58999**Teacher Education****FS 5.258:58013**

The Teacher Corps. Caryl Conner. 1967. 6 p. 15¢

Reports the work of the Teacher Corps in schools in various parts of the United States.

VOCATIONAL EDUCATION

81000-81999

Agriculture

FS 5.123:267

Instruction in Farm Mechanics: Suggestions for Developing Training Programs in Farm Mechanics in Vocational Agriculture. A. H. Hollenberg. 1957. 63 p. 35¢

The ingredients of an instruction program are given as: power and machinery, general buildings, electrification, soil and water management, and shop work.

FS 5.281:81001

Farm Mechanics in Vocational Agriculture: A Survey. Alvin H. Hollenberg. 1959. 28 p. 15¢

A report on what programs are being offered, what their facilities are, and how they are financed.

FS 5.281:81002-63

Summaries of Studies in Agricultural Education: An Annotated Bibliography of Studies in Agricultural Education with Classified Subject Index. Supplement No. 16. 1965. 71 p. 30¢

Briefs of 144 studies completed in the 1962-63 academic year. Twenty are staff studies, 42 are doctoral dissertations, and 82 are master's theses. The studies represent investigations of vocational and technical education problems and concerns and that meet high research standards.

Also available, supplements:

- 15, 1962. 56 p. 25¢
- 14, 1961. 56 p. 25¢
- 13, 1960. 35¢
- 12, 1959. 25¢

FS 5.281:81003

Building, Equipment, and Facilities for Vocational Agriculture Education. A. H. Hollenberg and E. J. Johnson. 1960. 90 p. 45¢

A guide to planning new construction or

remodeling existing facilities, for use in farm mechanics instruction and other phases of vocational agriculture programs in public secondary schools.

FS 5.281:81008

Agricultural Education: The Preparation of Teachers—A Survey of Supervised Teaching Programs. George L. O'Kelley, Jr. 1961. 75 p. 30¢

A survey of supervised teaching programs currently operating in the 77 institutions of higher education authorized to train teachers of vocational agriculture under provisions of the Smith-Hughes and George-Barden Acts of Congress.

FS 5.281:81010

Farm Business Analysis. 1964. 19 p. 20¢

Guidelines for a suggested program in farm management. Designed for persons responsible for the administration and operation of vocational agriculture programs.

FS 5.281:81011

Objectives for Vocational and Technical Education in Agriculture. 1965. 12 p. 15¢

Designed primarily for use by vocational agriculture teachers in developing training programs that will meet the educational needs of persons engaged, or preparing to engage, in farming. Material is intended to be a guide of basic principles to be considered when preparing teaching programs.

82000-82999

Distributive Education

FS 5.123:269

Training Programs in Outside Selling. Ben Franklin Bills. 1958. 15 p. 15¢

A description of course content in a local training program of outside selling.

FS 5.282:82001**Post High School Cooperative Programs.** 1960. 11 p. 15¢

An inquiry into this increasingly important program in distributive education.

FS 5.282:82004**Training for Students in the Food Industry.** 1961. 23 p. 15¢

Constructs a high school cooperative program to coordinate on-the-job orientation and classroom instruction.

FS 5.282:82005**Educational Values in Club Programs.** 1961. 19 p. 15¢

A report growing out of proposals made at a 1959 conference called by the Division of Vocational Education, Office of Education.

FS 5.282:82006**Supervision to Improve Instruction in Distributive Education.** 1959; reprinted 1961. 19 p. 15¢

Suggestions for improving supervisory techniques in instructional programs in distribution and marketing.

FS 5.282:82007**Food Service Industry: Training Programs and Facilities.** 1961. 183 p. 65¢

Materials developed at a 1960 conference attended by representatives of hotel and restaurant associations and members of the Division of Vocational Education, Office of Education. Practical aids for waiters and waitresses, hosts and hostesses, cashiers, bus-boys serving in drive-ins, cafeterias, hotels, or restaurants.

FS 5.282:82008**Management Training for Small Business.** 1958; reprinted 1961. 62 p. 25¢

Suggested procedures for organizing a comprehensive and balanced management training program with community support.

FS 5.282:82010**Guidelines for Teacher Education Programs in Distributive Education.** Mary V. Marks and John A. Beaumont. 1962. 33 p. 30¢

Papers delivered at a conference of national leaders in distributive teacher education called by the Office of Education in Chicago, June 5-9, 1961, to assist State Boards for Vocational Education in developing programs in institutions of higher education. The first conference of its kind.

FS 5.282:82011**A Guide to Practical Research.** Natalie Kneeland. 1963. 41 p. 20¢

A handbook of criteria, in question-and-answer form, prepared to help distributive education personnel develop acceptable standards in pursuing practical research—gathering data on and finding solutions to everyday problems in the classroom and the marketplace.

FS 5.282:82012**Planning and Organizing an Export Trade Education Program.** William Winkel. 1963. 42 p. 20¢

Includes a curriculum guide for instructors in programs designed to serve businessmen, particularly small manufacturers, in entering the export trade. The publication was prompted by the success of experimental programs held in Philadelphia, Jacksonville, and Houston.

FS 5.282:82014**Seafood Merchandising, A Guide for Training Programs.** 1964. 72 p. 30¢

Suggests guidelines for the promotion and organization of training programs helpful in maintaining an orderly flow of fishery products to the consumer.

80000-80999**General and Area Programs****FS 5.280:80001****Area Vocational Education Programs: Regulations for the Administration of Title VIII, National Defense Education Act of 1958, P.L. 864, 85th Congress.** 1959. 7 p. 15¢

Quotes the amendments and new sections encompassing administration of programs in agriculture, distributive occupations, home economics, and trade and industry.

FS 5.280:80009A

Electronic Technology. 1966. 104 p.
\$1

One of a series of technical curriculums intended to provide post high school students—and teachers of post high school technical courses—with a comprehensive survey of the essentials of occupational learning.

FS 5.280:80014

Suggested Techniques for Determining Courses of Study in Vocational Education Programs: Mechanical Technology Design and Production. Clarence E. Peterson. 1962. 29 p. 25¢

FS 5.280:80016

Chemical and Metallurgical Technologies. Clarence E. Peterson. 1962. 22 p. 25¢

FS 5.280:80017A

Administration of Vocational Education. 1967. 102 p. 45¢

Includes the most recent regulations of the Office of Education applicable to vocational education supported under the provisions of the Vocational Education Act of 1963.

FS 5.280:80018

Civil and Highway Technology. Clarence E. Peterson. 1962. 20 p. 25¢

A series of guides to serve States in organizing and operating programs under title VIII of the National Defense Education Act of 1958.

FS 5.280:80021

Education for a Changing World of Work: Report of the Panel of Consultants on Vocational Education. 1963. 296 p. \$1.25

The Panel, appointed by the Secretary of Health, Education, and Welfare at the request of the President in his message to Congress, February 20, 1961, was charged with the responsibility of reviewing and evaluating the current National Vocational Education Acts. Special studies which the Panel commissioned for use in its deliberations are reproduced in Appendixes I, II, and III.

FS 5.280:80022

Appendix I: Technical Training in

the United States. Lynn A. Emerson. 1963. 170 p. \$1.25

An inquiry into technical education on the semiprofessional level—the need, facilities, programs—with recommendations for the years immediately ahead.

FS 5.280:80024

Electronic Data Processing—I. 1966. 49 p. 40¢

Outlines curriculum which is primarily designed for a 1-year post high school program. It is intended to be a guide for planning preparatory programs. Provides a sequence of interrelated courses, each designed especially for this program.

FS 5.280:80025

Appendix II: Manpower in Farming and Related Occupations. C. E. Bishop and G. S. Tolley. 1963. 51 p. 35¢

An outline of the changing structure of American agriculture and the implications for education of rural youth.

FS 5.280:80026

Appendix III: The Economic and Social Background of Vocational Education in the United States, *by* Harold F. Clark; **A Sociological Analysis of Vocational Education in the United States** *by* Wilbur Brookover and Sigmund Nosow; **The Case for Education for Home and Family Living,** *by* Bernice Milburn Moore, *and* **The Contribution to the National Economy of the Use of Resources Within and by the Family** *by* Elizabeth E. Hoyt. 1963. 91 p. 50¢

FS 5.280:80027

Report of the Secretary of Health, Education and Welfare to the Congress on Training Activities Under the Manpower Development and Training Act. 1963. 87 p. 55¢

The review includes a preliminary assessment of training program data and a discussion of immediate and long-range research needs. Appendixes contain a digest of recommendations made by an Advisory Panel of Consultants on Vocational Education, and appropriation features of the proposed Vocational Education Act of 1963.

FS 5.280:80030

Electronic Data Processing in Engineering, Science, and Business. 1964. 34 p. 30¢

Designed to provide information to help the State organize and operate programs under title VIII of the National Defense Education Act of 1958. Sixth in a series.

FS 5.280:80033

Instrumentation Technology. 1964. 119 p. 75¢

Offers suggested course outlines, sequences of technical education procedure, laboratory layouts, texts and references, and laboratory equipment lists. Designed to assist school administrators, supervisors, and teachers who will be planning and developing new programs or evaluating existing programs in instrumentation technology.

FS 5.280:80034

The Vocational Education Act of 1963. 1965. 29 p. 15¢

Gives an analysis and description of the Vocational Education Act of 1963.

FS 5.280:80036

The Vocational Education Act of 1963. 1965. 12 p. 15¢

Discusses the purpose of part A of the Vocational Education Act of 1963.

FS 5.280:80037

Scientific and Technical Societies Pertinent to the Education of Technicians. 1965. 48 p. 35¢

Listing of selected national scientific and technical societies published to assist Federal, State, and local school administrators, supervisors, department heads, teachers, librarians, and guidance personnel to better understand the services of these societies and to provide an accessible, specific guide to them.

FS 5.280:80040

Basic Planning Guide for Vocational and Technical Education Facilities. William W. Chase, Johnny W. Browne, and Michael Russo. 1965. 32 p. 20¢

Outlines major considerations and basic principles in planning facilities for vocational and technical education. Intended primarily for State and local directors of vo-

cational education and members of local, area, or regional boards of education legally responsible for schools authorized under the Vocational Education Act of 1963.

FS 5.280:80041

Civil Technology: Highway and Structural Options. 1966. 107 p. 60¢

Offers suggested course outlines, sequence of technical education procedure, laboratory layouts, texts and references, lists of laboratory equipment and its cost, and a list of scientific and technical societies. Designed to assist school administrators and supervisors.

FS 5.280:80043

Instrumentation and Automatic Control. 1966. 30 p. 25¢

Indicates how job analysis and job relationship techniques can be used to facilitate the planning of training programs. Should be useful to States in organizing and operating vocational and technical education programs for occupations in the field of instrumentation.

FS 5.280:80045

Area Vocational Schools (reprinted from *American Education*, June 1966). Michael Russo. 1966. 5 p. 15¢

Shows how federal funds provided under the Vocational Education Act of 1963 are being used to build area vocational schools throughout the country.

FS 5.280:80046

Vocational Education: An Annotated Bibliography of Selected References, 1917-1966 (Below College). Alice Songe. 1967. 39 p. 30¢

Contains pertinent and available sources of information for school personnel responsible for administering Federal, State, and local programs in vocational education below college level.

83000-83999**Home Economics****FS 5.283:83010**

Home Economics in the Public Secondary Schools. Beulah I. Coon. 1962. 156 p. \$1.25

Statistical information on enrollment, teachers, and programs based on a survey of 3,796 schools. Updates a more limited study undertaken in 1939 to assist planners in considering the complex decision-making required of today's homemaker.

FS 5.283:83015

Planning Functional Facilities for Home Economics Education. James L. Taylor and Johnnie Christian. 1965. 45 p. 45¢

Concerns functional planning and design of home economics facilities, one of a series covering specialized areas of the school plant. It is a cooperative project involving home economics educators and school facilities specialists.

87000-87999

Manpower Development and Training

FS 5.287:87001

Management Aide in Low-Rent Public Housing Projects. 1964. 11 p. 20¢

Provides resource material from which local training programs can be developed. Includes a suggested training schedule which will be useful for the development of programs that will enable women to acquire competencies having a valid wage value and needed in serving families.

FS 5.287:87003

Hotel and Motel Housekeeping Aide. 1964. 11 p. 20¢

A suggested training program. Provides resource material which will be useful for the development of local training programs that will enable women to acquire competencies having a valid wage value and needed in serving the public.

FS 5.287:87004

Supervised Food Service Worker. 1964. 13 p. 20¢

A suggested training program. Provides resource material which will be useful for the development of local training programs that will enable women to acquire competencies having a valid wage value and needed in serving families.

FS 5.287:87005

Clothing Maintenance Specialist. 1964. 13 p. 20¢

A suggested training program. Provides resource material which will be useful for the development of local training programs that will enable women to acquire competencies having a valid wage value and needed in assisting families.

FS 5.287:87006

Companion to an Elderly Person. 1964. 13 p. 20¢

A suggested training program. Provides resource material which will be useful in the development of local training programs that will enable women to acquire competencies having a valid wage value and needed in assisting families.

FS 5.287:87009

Highway Engineering Aide. 1964. 40 p. 35¢

Prepared as a 16-week training program for highway engineering aides. Designed to provide basic education and skills required for entry jobs in this area.

FS 5.287:87010

The Landscape Aide. 1964. 21 p. 25¢

A suggested training program. It is intended as a guide for teachers in developing a course of study in landscaping.

FS 5.287:87011

The Forestry Aide. 1964. 21 p. 25¢

A suggested training program. Provides resource material from which a local training program can be developed. It is a guide for a community-focused occupation which uses agricultural knowledge and skills.

FS 5.287:87015

Automotive Service Specialist. 1965. 78 p. 45¢

Suggested guide for a training course. Prepared as a reference for developing a course to be used in the preparation of the automotive service specialist.

FS 5.287:87017

Medical Laboratory Assistant. 1966. 115 p. 60¢

Outlines informational material to be presented in the classroom, together with labo-

ratory procedures to be demonstrated and then performed as direct exercises by the students.

FS 5.287:87019

An Overview of Manpower Development and Training Under Redevelopment Area Residents Program, 1963-66. 1967. 34 p.

Offers an insight regarding Manpower Development and Training under Section 241 (Redevelopment Area Residents) during fiscal years 1963 through 1966.

FS 5.287:87020

Education and Training: Expanding the Choices. 1967. 107 p. 60¢

Fifth annual report of the Department of Health, Education, and Welfare to the Congress on training activities under the Manpower Development and Training Act.

86000-86999

Office Education

FS 5.286:86001

Resources for Office Education Programs. 1961. 35 p. 25¢

A bibliography of teaching materials in the field: films and filmstrips, books, periodicals, and supplementary materials.

FS 5.286:86006

Suggested 1-Year Curriculums: Clerical and Record Keeping Occupations. 1963. 74 p. 50¢

FS 5.286:86007

Stenographic-Secretarial Occupations. 1962. 64 p. 45¢

Professional guides to training, retraining, and upgrading skills of unemployed and under-employed workers, with emphasis on skill development during supervised practice periods. Prepared and first published by McGraw-Hill Book Company, Inc., under contract to the Office of Education as part of the Manpower Development and Training Program administered by the Department of Health, Education, and Welfare.

FS 5.286:86010

Electronic Business Data Processing Peripheral Equipment Occupations. 1964. 113 p. 70¢

Suggests vocational curricula in certain electronic business data processing occupations. Designed to aid administrators, supervisors, and teachers in the promotion and development of these vocational courses.

84000-84999

Trade and Industrial Education

FS 5.284:84014

Peacetime Radiation Hazards in the Fire Service: Orientation Unit—Instructor's Guide. 1961; reprinted 1963. 42 p. 35¢

A short, intensive orientation program for firemen trainees, in two sessions, prepared jointly with the Office of Industrial Relations, Atomic Energy Commission.

FS 5.284:84015

Orientation Unit—Student Manual. 1961. 31 p. 30¢

A series of captioned illustrations.

FS 5.284:84016-61

Research in Industrial Education: Summaries of Studies, 1960-61. Merle E. Strong. 1962. 34 p. 20¢

Briefs of a selection of studies completed during the 2-year period, with statements of purpose, source of data, method of study, and major findings. Prepared for those dealing in program development or operation.

Also available:

—1956-1959. 148 p. 60¢

FS 5.284:84019

Peacetime Radiation Hazards in the Fire Service: Basic Course—Resource Manual. 1961. 120 p. \$1

A course for firemen in handling emergencies involving radioactive materials, developed with the Office of Industrial Relations, Atomic Energy Commission.

FS 5.284:84021

Basic Course—Study Guide. 1961. 31 p. 30¢

Contains 12 tear-out assignment sheets correlated with the Resource Manual and the Instructor's Guide.

FS 5.284:84022

Basic Course—22 charts to accompany. 1961. \$2

Black-and-white posters, 20x28 inches, for use by the instructor.

FS 5.284:84025

Training Programs for Fishery Occupations: Program Development Information. 1961. 58 p. 20¢

A description of programs available in various high schools and a list of institutions offering degrees or a major in fishery or related sciences; gives references and national or State associations and agencies useful as sources of information for program planners.

FS 5.284:84028-62

Preparatory Trade and Industrial Training Program in Public Schools, A Directory: 1961-62. Sam W. King. 1962. 272 p. \$1

Shows specific courses available, alphabetically by school, city, and State. Lists, in addition to day trade programs shown in the 1954 directory: part-time cooperative training programs meeting standards of State Plans for Vocational Education, and short-unit preparatory training courses regularly offered.

FS 5.284:84030

Organizing a Dental Assistant Training Program. 1965. 43 p. 35¢

Summarizes the need for formal training programs for dental assistants and offers guidelines for their establishment. For members of the dental profession, it should provide a better understanding of how dentists can work with public education authorities to narrow the gap between the number of dental assistants being trained and the number needed.

FREE PUBLICATIONS

Single copies of the free publications are available on request from the Publications Distribution Unit, Office of Education, Washington, D.C. 20202.

14000-14999

International

OE-14118

The International Teacher Development Program. 1966. 19 p.

Outlines the International Teacher Development Program which is administered by the U.S. Office of Education in cooperation with the Bureau of Educational and Cultural Affairs of the Department of State.

OE-14128

Research or Study Abroad: Overseas Projects in Education. 1966. 4 p.

Tells how grants for conducting research or study abroad in modern foreign languages and international studies are made available under the Fulbright-Hays Act.

OE-14129

Foreign Curriculum Specialists: Overseas Projects in Education 1966. 4 p.

Explains how State departments of education, large city or county school systems, and colleges and universities may obtain—under the Fulbright-Hays Act—the services of foreign curriculum specialists to help improve and strengthen their area studies and modern foreign language programs.

OE-14130

Fulbright-Hays Graduate Fellowships: Overseas Projects in Education 1966. 5 p.

Provides information on the purpose, eligibility requirements, and application procedures concerning the Fulbright-Hays Graduate Fellowships program.

OE-14131

Summer Seminars: Overseas Proj-

ects in Education. 1966. 7 p.

Gives information about a limited number of summer seminars for social studies teachers which operate in selected foreign countries with the assistance of funds appropriated to the U.S. Office of Education.

OE-14031-38

The Education of Disadvantaged Children: A Bibliography. Lois Watt. 32 p.

Lists books related to the education of children handicapped by cultural deprivation, intercultural inexperience, or with other handicaps.

OE-14031-39

Family Life and Sex Education. 1966. 7 p.

Lists publications related to family life and sex education which are available for examination at the Educational Materials Center, U.S. Office of Education.

OE-14047-68

Opportunities Abroad for Teachers, Under the International Educational and Cultural Exchange Program. 1966. 20 p.

Describes opportunities available under the International Educational and Cultural Exchange Program for qualified American teachers to teach for an academic year in elementary and secondary schools abroad and to attend summer seminars abroad in foreign languages or in social studies.

15000-15999

Library Services

OE-15058

Focus on Title II: Elementary and Secondary Education Act of 1965 (School Library Resources, Text-

books and Other Instructional Materials). 1965. 4 p.

General information concerning title II of the Elementary and Secondary Education Act of 1965 which provides funds to States for school library resources, textbooks, and other printed and published instructional materials.

OE-15059

Guidelines: Title II, Elementary and Secondary Education Act (School Library Resources, Textbooks, and Other Instructional Materials). 1966. 50 p.

Designed to clarify the regulations governing title II and to furnish a basis for common understanding of the title among local school systems, nonpublic schools, State education agencies, the U.S. Office of Education, and program reviewers and auditors.

OE-15063

Library and Information Science Research Program. 1967. 5 p.

Provides information about the research support program concerned with the user of library resources, the development of library and information services, and the training of librarians made possible through title II-B of the Higher Education Act of 1965.

10000-10999

Miscellaneous

OE-10041

Federal Money for Education (Chart). 1966.

Gives a list of the programs administered by the U.S. Office of Education, fiscal year 1966. Includes a brief description of each program and the amount of money appropriated for the fiscal year.

11000-11999

OE Programs

OE-11008

Financial Assistance Programs. 1966. 165 p.

Describes the background and purpose of programs under which Federal funds are made available to State and local governments and other types of recipients in the fields of education.

12000-12999

Research

OE-12022-66

ERIC (Educational Research Information Center). 1966. 6 p.

Tells how the Educational Research Information Center operates and gives a list of ERIC Clearinghouses.

OE-12025

Support for Research and Related Activities. 1967. 22 p.

Describes the wide range of activities which receive support administered by the U.S. Office of Education for research and related activities. Includes general application procedures.

OE-12026

Office of Education Training Programs for Educational Research. 1967. 4 p.

Contains a list of questions and answers concerning the Educational Research Training Program administered by the U.S. Office of Education.

OE-12027

Scope of the ERIC Clearinghouses. 1967. 6 p.

Gives annotations describing the scope of the subjects covered by the clearinghouses of the Education Research Information Center. Designed to help individuals and organizations send to the most appropriate clearinghouse those documents which they wish to have reviewed for inclusion in the ERIC system.

23000-23999

Staff, Salaries

OE-23029

Guide for Implementing Handbook III, Property Accounting for Local and State School Systems. Charles T. Roberts. 1966. 54 p.

Developed to serve as a suggested procedural manual for local and State school system officials seeking assistance in setting up school facilities data systems.

OE-23041

Selected References on Supervision

and Leadership. Jane Franseth. 1965. 12 p.

A list of selected references concerning supervision and leadership in schools. Compiled to assist school administrators and other education personnel.

34000-34999

Audiovisual Aids

OE-34035-B

Catalog of Captioned Films for the Deaf. Anita A. Carpenter. 1967. 102 p.

The catalog is divided into three sections—general interest films available to all registered users, educational film titles available, and films and filmstrips available for teacher training purposes.

OE-34039-66

Captioned Films for the Deaf (Fiscal Year 1967). James J. Kundert. 1967. 16 p.

Gives history of the program. Tells how application to certification may be made and how to order films.

21000-21999

Buildings, Equipment

OE-21022-B

Loans to Nonprofit Private Elementary and Secondary Schools. 1966. 15 p.

This bulletin answers questions frequently asked about the loan program for private nonprofit schools as provided by financial assistance programs.

37000-37999

Education of the Disadvantaged

OE-37008

Special Report: Summer Projects. 4 p. 1967.

Presented to help local school officials and teachers develop effective summer educational services to give the children of poverty a new chance to learn. Describes several suc-

cessful summer programs conducted under title I of the Elementary and Secondary Education Act during 1966.

24000-24999

Enrollment, Retention, Graduates

OE-24016

Nonpublic School Enrollments in Grades 9-12, Fall 1964, and Graduates, 1963-64. Diane B. Gertler. 1965. 10 p.

A summary of high school enrollment, graduates, and number of schools. Tables give total public and nonpublic school enrollment and graduates, and percent change between years.

38000-38999

Equal Education Opportunity

OE-38003

Desegregation Guidelines (reprinted from *American Education*, Feb. 1967). 1967. 2 p.

Explains the desegregation guidelines issued by the U.S. Office of Education to explain to school officials what is expected of them under title VI of the Civil Rights Act.

35000-35999

Exceptional Children, Special Education

OE-35087

Preparation of Professional Personnel in the Education of Handicapped Children. 1966. 20 p.

A manual on the preparation of proposals and State plans for the training of professional personnel, summer of 1967 and academic year 1967-68. For use by colleges and universities and State education agencies.

OE-35088

Federal Teacher Training Programs in Fields of the Disadvantaged and Handicapped. 1966. 18 p.

Describes teacher training programs in the fields of the disadvantaged and handicapped. Includes a list of general instructions for applicants.

20000-20999**Administration and Statistics****OE-20094**

Pacesetters in Innovation, Vol. I, No. 4. 1966. 53 p.

Lists projects approved under title III of the Elementary and Secondary Education Act of 1965 for April 22 to July 31, 1966 to advance creativity in education.

Also available:

Vol. I, No. 2. 1966. 77 p. OE-20090

Vol. I, No. 3. 1966. 53 p. OE-20094

25000-25999**Guidance, Counseling, Testing****OE-25047**

Questions and Answers About Title V-A of the National Defense Education Act. 1965. 12 p.

Answers some of the questions most frequently asked by school administrators, teachers, counselors, and the general public, about a grant program to strengthen programs of testing and guidance and counseling.

OE-25048

NDEA Institutes for Advanced Study: Counseling and Guidance. 1966. 19 p.

Manual designed to assist in the preparation of proposals for advanced study in counseling and guidance for the summer of 1967 and the 1967-68 academic year.

OE-25049

Guide to Guidance, Counseling, and Testing Publications of State Departments of Education. 1966.

This guide to guidance, counseling and testing publications of State departments of education is broken down by subjects for ele-

mentary and secondary schools and junior colleges.

53000-53999**Administration, Faculty, Salaries****OE-53029**

Higher Education Act of 1965—Title III, Strengthening Developing Institutions, 1966. 11 p.

Tells how institutions may receive grants under title III of the Higher Education Act of 1965. Gives examples of cooperative programs and a list of developing institutions receiving support under title III.

51000-51999**Building, Equipment****OE-51014**

Excellence in Design: A New Potential on the American Campus. 1966. 17 p.

A compilation of five addresses delivered at a ceremony honoring distinguished design for higher education facilities and campus planning. Gives list of the 1966 Awards Program winners.

55000-55999**Costs and Financial Assistance****OE-55042**

Institute Programs for Advanced Study, 1968-69: A Manual for the Preparation of Proposals. 1967. 78 p.

General manual for use by colleges and universities in preparing proposals for institutes authorized by the National Defense Education Act and the National Foundation on the Arts and Humanities Act of 1965.

APPENDIX H

Response of the Office of Education to Questions Propounded by Senator Dominick During the Course of Hearings Upon S. 1125, in the Area of Adult Education

Question: Are there problems of recruitment?

Answer: At the present time recruitment of students has been handled effectively. Many methods have been employed by State and local programs to inform the undereducated adults about classes in basic education and to enlist their interest and participation. It was found, as was anticipated, that personal contact was by far the most effective means of enlistment.

Many individuals and groups within communities aided the local education agencies in the promotion of adult basic education classes and the recruitment of prospective students through personal contacts with undereducated adults. From State reports, it can be surmised that those agencies referring the largest number of students were departments of public welfare, public health agencies, State departments of employment, and community action programs.

Many other social and civic groups actively participated by making community surveys, "selling" the program from door to door, and distributing literature. One State developed a business reply mailer card (used by nurses, welfare workers, employment interviewers) which was sent to the local adult basic education program office giving the names and addresses of potential students. The schools then followed up by supplying specific information concerning classes through personal contact.

Individuals who were the most effective recruiters were the students themselves, who enlisted participants from their neighborhoods, churches, and among their own families and friends. Some local programs hired recruiters from the particular economic or ethnic group to be reached; others included recruiting as a part of the duties of teachers and counselors in the program. Many programs encouraged children in the day schools to inform their parents of the classes and to urge their participation. In a number of instances notes explaining the program were sent home by the school children whose parents were undereducated adults.

Other methods of recruitment included public service announcements and special programs on radio and television; newspaper articles and advertisements; leaflets, flyers, signs, brochures, posters; special announcements at community meetings, school meetings, sports events, church services, etc.

Question: Has, or will, the lack of qualified teachers pose any problems?

Answer: Throughout the country, the lack of teachers, specifically trained in the skills necessary for adult basic education instruction has been noticeable. Heretofore, adult basic education instruction, for the most part, was taught by teachers possessing an elementary education certificate.

The shortage has been due to a very limited number of programs (prior to the Adult Education Act of 1966) that were designed specifically for literacy instruction for adults, except for those that were called Americanization classes.

Educational institutions do not have courses designed to teach teachers how to teach adult illiterates. Therefore, it has become necessary for this type of in-service training to be conducted at the Federal, State, and local levels, in order to insure quality instruction in the adult basic education programs.

At the Federal level, teacher training institutes have been conducted, as authorized under section 309 of the Act, in order to provide a reservoir of instructional personnel who could return to their respective States and train other teachers in Adult Basic Education skills.

All States reported training programs in one form or another for the administrators and/or teachers in adult basic education programs. Some training programs were conducted by the State agencies; far more, however, were conducted by local education agencies for their own staffs.

Types of programs included orientation meetings, and pre-service and in-service training programs. Time periods ranged from two hours to one month with the largest number of workshops being one day in length.

Content of these training programs include the following :

1. Overview of Adult Basic Education : The background and history ; the legislation authorizing the Program ; the philosophy and objectives.
2. Sociological and personal characteristics of adults ; characteristics of disadvantaged adults ; the problems related to teaching adult students ; characteristics and qualifications needed in adult basic education teachers and administrators.
3. Recruitment and retention
4. Classroom techniques and methods
5. Demonstration and evaluation of instructional materials ; textbooks, workbooks ; audio-visuals ; programmed instruction ; educational television
6. Materials preparation
7. Subject areas : communication skills, especially reading ; arithmetic ; consumer education ; health ; personal and family development
8. Student testing and placement
9. Guidance and counseling
10. Linguistics, teaching English as a second language.

In addition to training programs being offered to teachers and administrators, State and local programs produced materials to aid in the development of the Program. These materials included such subject areas as techniques, teaching reading, reading inventories, teacher's guides, bibliographies of student and teacher materials, and organization and administration of Adult Basic Education Programs.

Question : Are there adequate facilities for class instruction

Answer : Many States reported that classes were held in locations other than public school buildings, and, from the individual State reports, two primary reasons were given for the selection of other, and unusual, sites. For many adults resuming their elementary education, there are innate fears of the public school. Usually, the adult has already met failure in the public schools in earlier educational experiences. Too, the public school represents for many a part of the "establishment," the "power structure," to which he neither belongs nor identifies.

Many reports indicated that local communities recognized this fear, this anxiety, and established programs for the returning adult student to become acclimated to the process of organized learning prior to entrance into a school building as such. In some communities, classes were organized in nearby homes, either of students, the teacher, or a neighborhood recruiter, and then transferred to other locations. In others, orientation programs were set up in churches, homes, clubs, etc., for the purpose of explaining the program, establishing group rapport, and thus breaking the barriers which prevent so many adults from participating in adult basic education programs.

In addition, in order to reach as many undereducated adults as possible and in the most effective and efficient ways, it is necessary to take the program to the people—to the communities where they live. Not only is education thus more accessible, it can become an integrated part of daily life, not a separate factor which has little or no connection with the adult's world.

The most frequently mentioned class sites other than school buildings were libraries, housing projects, churches, neighborhood centers, students' and teachers' homes, social clubs, college and university campuses, and factories. The most unusual location cited, however, was a funeral home!

Programs, especially those designed for special groups gave rise to class sites outside the structured pattern of community life. Adult basic education classes were found in hospitals, correctional institutions, mental institutions, migrant camps, and on Indian reservations.

