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THE USE OF VISUAL TRAINING AND POSTURAL REMEDIATION WITH GROUPS OF COLLEGE STUDENTS.

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RESEARCH HAS SHOWN THE RELATIONSHIP OF VISUAL-MOTOR DYSFUNCTIONS TO READING DIFFICULTIES AND SCHOOL FAILURE. THIS STUDY WAS DESIGNED TO IDENTIFY THE EXTENT OF SUCH DYSFUNCTIONS IN SEVERAL GROUPS OF FULL-TIME DAY STUDENTS AND TO ASSESS THE FEASIBILITY OF VISUAL TRAINING AND POSTURE REMEDIATION METHODS FOR STUDENTS ON ACADEMIC PROBATION. WHILE THE PROBATIONARY AND REGULAR STUDENTS IN THE STUDY DID NOT DIFFER APPRECIABLY IN NON-VERBAL IQ SCORES, THE MEAN VERBAL SCORE OF PROBATIONARY STUDENTS WAS 22 POINTS LOWER. THE CONTROL GROUP'S VISUAL-MOTOR PERCEPTION INTEGRATION WAS APPROPRIATE FOR THEIR AGES, BUT THAT OF THE PROBATIONARY GROUP WAS MUCH LOWER. MORE PROBATIONARY STUDENTS (1) WERE LEFT-HANDED OR SHOWED MIXED DOMINANCE, (2) HAD SEVERE DIFFICULTY IN INTEGRATING BODY MOVEMENT AND MAINTAINING POSTURE, (3) HAD MAJOR EYESIGHT AND VISION PROBLEMS, AND (4) ON PROJECTIVE TESTS SHOWED IMPULSIVITY, DEPRESSION, AND EXTREME IMMATURITY. AN INTENSIVE PROGRAM DESIGNED TO CORRECT THE FUNCTIONAL PROBLEMS RESULTED IN MARKED IMPROVEMENT, THOUGH FURTHER RESEARCH WAS NEEDED TO DETERMINE THE EFFECT OF THIS PROGRAM ON THE STUDENTS' ACADEMIC ACHIEVEMENT. (WO)

THE USE OF VISUAL TRAINING AND POSTURAL REMEDIATION WITH GROUPS OF COLLEGE STUDENTS

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BACKGROUND OF THE STUDY

The relationship of visual-motor dysfunctions to reading difficulties and school failure has been well established by studies conducted throughout the past 60 years. An equally extensive literature exists establishing various rehabilitation methods useful in correcting both acquired and inherited visual-motor dysfunction. Notable among such methods are those known as visual training and postural remediation methods. In general, such methods have been most widely utilized in individual treatment sessions and have been applied in the treatment of pre-adolescent children.

AIMS OF THE STUDY

1. to delineate the extent of visual-motor dysfunctions in several groups of students in full-time attendance in day sessions at Los Angeles City College.

2. to study the feasibility and effectiveness of visual training and postural remediation methods conducted with regular class-size groups of students on academic probation because of poor grades and/or failure to pass a standard entrance examination.

METHODS

In the service of the first research aim, individual psychological testing and group testing have been conducted with the following groups, registered as full-time students in the designated academic semesters:

46 students, first semester probationary, in two sections of Psychology 30, Fall semester, 1966-67 (pilot study group)

36 students, regular registration, in one section of Psychology 20, Fall semester, 1966-67 (control group)

52 students, second semester probationary, in two sections of Psychology 21, Spring semester, 1967 (experimental group)

42 students, first semester probationary, in one section of Psychology 30, Spring semester, 1967 (experimental control group)

Tests administered to every student include the following:

Bender-Gestalt Visual-Motor Perception Test (administered individually)

House-Tree-Person Drawing Test (group administration)

Science Research Associates Non-verbal Intelligence Test (group administration)

Science Research Associates Verbal Intelligence Test (group administration)

Harris Test of Lateral Dominance (administered individually)

Science Research Associates Reading for Understanding Test (group administration)

In addition, the Keystone Telebinocular Test has been administered individually to all students in the three class sections registered in Spring semester, 1967.

In the service of the second research aim, regular class sessions conducted by the writer with the experimental group of 55 students in the above-described Psychology 21 classes have consisted of practice by all students of prescribed visual training exercises and postural remediation exercises for a total of 105 minutes each week, divided into three sessions, and additional practice in

visual-motor directionality for a total of 45 minutes each week, divided into three sessions. The experimental-control group of students in Psychology 30 has, under the direction of their instructor, Miss Louise Ludwig, received class instruction in more orthodox remedial reading methods, including tachistoscopic presentations, and use of reading and study method materials.

Material used by the students in the experimental group is as follows:

6 foot lengths of string attached to wall at student's eye heights, strings holding two movable beads

rectangular frames located at eye height (panes of windows and of glass cupboard doors located around the classroom)

balance boards (two foot squares of inch thick wood, each supported five inches from floor by a rounded piece of 4 inch square wood)

walking beams (six foot lengths of 2 by 4 lumber supported at each end by five inch high brackets, adjustable so that either 4 inch width or 2 inch width of lumber can be uppermost)

blackboards and chalk (regular classroom supplies)

Marsden balls (rubber ball suspended from ceiling; balls have various letters of the alphabet printed at random on their surface)

bean bags of various weights, ranging from 2 to 10 ounces

directionality workbooks (Learning in High Gear, SRA)

Students in the experimental group have practiced the following exercises:

Holding the string taut against the nose, the student alternately focuses on the near bead, placed approximately 8 to 12 inches away from the nose, and on the far bead, placed a few inches away from the place of attachment at the wall. The student is observed by the writer for a short time during each practice

session and is also observed by a fellow student (called a "buddy"). Attention is called immediately to any failure to utilize both eyes simultaneously and smoothly. Practice sessions were initially conducted for 20 minutes, so that each student in a couple practiced fusion for approximately 10 minutes. As students mastered this task, practice sessions were reduced to 5 minutes in length and the buddy was no longer used.

Standing several feet away from a rectangular frame, the student tracks his eyes along the edge from one corner to the next, on command from his buddy, who is seated below the line of vision, in position to call attention to any failure to use both eyes together smoothly. Practice sessions were initially 20 minutes in length; therefore, each partner practiced approximately 10 minutes. As students mastered this task, practice time was reduced to 5 minutes and the buddy was no longer used.

Standing a few feet away from the blackboard, with eyes focused on a mark directly in front of the student's nose, the student holds chalk in each hand and, on command from the writer or the buddy, draws simultaneous circles and then squares. Practice is continued until the student can draw circles, not elongated ovals, and squares placed on the upright and horizontal (not trapezoids placed at any angle to the upright) and until the student can reliably return to his starting point within each figure. Thereafter, the student assumes individual responsibility for practice of this task for 5 minutes each class session.

Standing on the balance board, the student tries to achieve perfect balance while keeping eyes focused on distant point directly ahead of him. He is urged to continue practice until he can achieve balance with his body relaxed and his eyes free to practice tracking around the frame, and to practice tracking a letter on the Marsden ball moving in pendulum fashion in front of his eyes, or

to read a book he is holding. Additionally, some students also practice balancing on the balance board while working at the blackboard, as described above. Practice sessions are at least 10 minutes in length each class session.

Standing on the walking beam, the student tries to walk forward and then backward without losing his footing and without looking at the beam. Students are urged to continue practice until they can read a book while walking confidently on the beam or while poised in a relaxed fashion, with both feet flat on the board. Practice sessions are at least 10 minutes in length. Additionally, some students practice tracking letters on the Marsden balls while poised on the walking beam, and also practice playing catch with the differently weighted bean bags.

Workbooks are utilized to help students learn to coordinate eyes and hands directed in a left-to-right and top-to-bottom direction. Directions supplied by SRA for use with these workbooks are followed exactly. Ten minutes each class session are spent on the workbooks.

RESULTS

The average non-verbal IQ score of students in Psychology 20 is at the average level (IQ=105). The average non-verbal IQ scores of all groups of probationary students (Psychology 30 and 21) is essentially identical (IQ=100).

The average verbal IQ score of students in Psychology 20 is at the average level (IQ=97). The average verbal IQ scores of all groups of probationary students is significantly lower (IQ=75).

The average maturational age equivalent of students in Psychology 20 (as measured by the Koppitz scoring of the Bender-Gestalt Test) is above the top

level measured; thus these students do not have visual-motor perceptual integration grossly inappropriate to their chronological age. The average maturational age equivalent of all groups of probationary students is below 10 years of age; thus the probationary student has the visual-motor integration appropriate to a person roughly half as old as he is. Of those 8 probationary students who showed no gross repairment on the Bender-Gestalt Test, 6 were below IQ=85 on the non-verbal test.

Compared to the general population, a significantly large proportion (52%) of probationary students are left-handed or demonstrate mixed dominance; that is, they use as a dominant eye the eye on the side of the body opposite to the hand used for writing. In addition, almost all probationary students have severe difficulties in integrating body movement and maintaining posture, so that most of these students were initially incapable of swinging their arms to balance their bodies while striding, were incapable of crawling smoothly, moving forward the arm on the side opposite to the leg which was being moved forward, and were in the habit of settling on one hip and tilting the head when asked to stand straight and look at an object straight ahead. Students in the Psychology 20 class do not, as a group, demonstrate these postural difficulties.

Keystone telebinocular tests reveal major eyesight and vision problems in all but 11 of the 155 probationary students tested with this device (students in other sections were also tested). It should be noted that all students with non-verbal IQ below 85 had perfect vision and eyesight. Presumably such students fail because they are not sufficiently intelligent to handle college work. Approximately 25% of the probationary students were in need of corrective lenses for eyesight problems, generally problems with near vision (i.e., these students were farsighted and could not see a book held at reading distance). These students were required to complete a full eye examination with an eye specialist of their choice and to obtain corrective lenses as prescribed. Three students

refused to comply with this requirement and chose, instead, to drop their registration in the course.

In addition to such eyesight problems, almost all students demonstrated significant vision problems, of the sort not correctable by lenses. Problems included failure in fusion at the near point and far point, with the most frequently found difficulty being an inability to fuse the separate images from both eyes at the near point. Such students may find it difficult to read for more than a few minutes without developing severe headaches or may manage to read for longer than a few minutes only by mentally suppressing the image received from one eye, so that, in effect, they are reading with only one eye and they are devoting mental effort to suppressing the perception of the other eye.

Analysis of the House-Tree-Person drawings indicates that severe depression and extreme immaturity of self-concept is typical of the probationary student. Many probationary students demonstrate extreme impulsivity; only a few show extreme compulsivity. By contrast, the students in Psychology 20 typically show anxiety and a lack of self-confidence, with many showing extreme compulsivity, with resultant slowing of function. The projective tests indicate that the probationary student doesn't seem to know who he is and where he is with relation to the world around him; this makes him despondent and ready to react thoughtlessly to any means of reducing the ambiguity he faces. By contrast, the student taking a developmental reading course appears to be worried about himself and afraid he may make a mistake if he acts, so that he cannot quickly arrive at decisions.

Reading achievement levels at the beginning of the semesters were uniformly low, below the 20th percentile on the average for all groups.

CONCLUSIONS

There is ample evidence to support the conclusion that the probationary student suffers from extreme dysfunction of visual-motor perceptual integration, so that despite average innate intelligence, he is incapable of attending to the demands of the world around him and is incapable of performing in a reliably good fashion those perceptual acts involved in reading. Thus he functions at a below average level of intelligence at typical school tasks. Personality difficulties like depression, irritability, and impulsivity appear secondary to the perceptual confusion within which this student typically lives and has probably lived since early childhood.

By comparison, the student in good academic standing who seeks help with reading has no primary perceptual problems but instead generally suffers personality problems which hinder him from acting forthrightly upon the evidence of his senses. Where remedial reading techniques are effective with this type of student, it may be supposed that they have forced the student to overcome his tendency to procrastinate and puzzle unnecessarily over what he has seen, so that reading speed improves.

It seems likely that those students who show no visual-motor impairment on both the Bender and Keystone tests are functioning at their true intellectual level. All 8 students of this type have IQ scores below 95 and probably cannot benefit from college.

No test results are as yet available to prove the effectiveness of the group visual training techniques and postural remediation techniques with probationary students. However, in the 3 months to date since the beginning of the Spring semester, improvement has been shown in their ability to use both

eyes to see with and in their ability to regain normal reliance on postural reflexes to locate themselves in space. Therefore, their eyes are available for true visual perception.

Students who couldn't even bring two eyes together to see a page held at ordinary reading distance now have no such difficulties. Those who couldn't turn their eyes but who instead needed to turn their heads and shoulders can now separate the sighting act from posture changes. Students who couldn't keep track of what one hand was doing if they paid attention to the other can now reliably direct the actions of both hands together. Students who couldn't pronate their thumbs and forefingers to hold a pencil now can, and they show greatly improved handwriting as a consequence.

Along with these changes, the character of the classroom has altered greatly, and students are now generally attentive and determined to get their practice accomplished without fooling around, in great contrast to their general distractability and lack of motivation early in the semester. Students have reported they find it easier to study for their other classes. Finally, several students who were slovenly or ill-kept have adopted an alert attitude and are taking greater pains with their dress and hair.

In general, the experience of conducting these classes leads the writer to conclude that, though difficult, group application of visual training and postural remediation techniques is feasible and brings about the same changes as those found when treating individuals.

PROPOSAL FOR FURTHER STUDY:

All students in the experimental group and in the experimental-control group will be given the same tests at the end of the semester as those given at

the beginning, to establish what differences have occurred. In addition, students in Psychology 1 and Psychology 2 classes will be given similar tests to provide a base line of control findings on students who are not suffering any difficulties with reading or with school performance. If this preliminary trial of remedial techniques, which differ radically from those typically used in reading classes, proves group visual training is effective, it is proposed that such techniques be again used with additional classes in forthcoming semesters, and that these techniques be put into practice by faculty members who have not had the specialized interest that has motivated the writer to conduct the study reported here.