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ABSTRACT

The general goal of this summer program, funded under Title I, Elementary and Secondary Education Act, was to provide an instructional-vocational program which would meet the needs of handicapped students. Specifically, the program set out to: (a) provide experiences in shop areas which will provide in manipulation of materials and contribute to growth in motor control and manual dexterity; (b) provide experiences in group interaction in shops and opportunities for following through on individual and group projects which will contribute to growth in self-direction; and, (c) provide opportunities for success and achievement in exploration of new media, materials, and equipment. The evaluation was performed by a collection of information from parents, teachers, and students, and by observations by evaluation staff members of shop settings and activities. Teachers rated students at two intervals in the program, once on the seventeenth of July and again on August thirteenth. Students who were able to write filled out questionnaires. The others were interviewed by project staff members. Parents also filled out questionnaires. Teachers responded to a questionnaire at the termination of the program. (Author/JM)

FINAL REPORT OF THE EVALUATION OF THE

SUMMER 1970

THE EXPLORATORY VOCATIONAL TRAINING PROGRAM FOR PHYSICALLY HANDICAPPED & MENTALLY RETARDED PUPILS

Evaluation of a New York City school district educational project funded under Title I of the Elementary and Secondary Education Act of 1965 (PL 89-10), performed under contract with the Board of Education of the City of New York for the Summer 1970.

TEACHING & LEARNING
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THE EXPLORATORY VOCATIONAL TRAINING PROGRAM
FOR PHYSICALLY HANDICAPPED & MENTALLY RETARDED PUPILS

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They were helpful both in the collection of relevant information and in understanding the goals and operation of the program.

THE EXPLORATORY VOCATIONAL TRAINING PROGRAM
FOR PHYSICALLY HANDICAPPED & MENTALLY RETARDED PUPILS

EXECUTIVE SUMMARY

BACKGROUND

The EXPLORATORY VOCATIONAL TRAINING PROGRAM FOR PHYSICALLY HANDICAPPED AND MENTALLY RETARDED PUPILS emerged from planning sessions of personnel from several bureaus of the New York City Board of Education, the Parent's Advisory Committee at George Westinghouse Vocational and Technical High School, and Parents' Committee on the Education of Handicapped Children.

These planning sessions centered around the needs of secondary school age students who were enrolled in instructional programs provided by the CRMD Bureau, the Bureau for the Physically Handicapped, the Bureau for the Visually Handicapped, the School for the Deaf, and the Program for Pupils with Language and Hearing Impairments. Although students of differing handicaps do not require the same kind of program to meet their special needs, several common needs and deficiencies were identified.

Nearly all of these students were viewed as having needs for:

a) specialized educational assistance and social adjustment
b) need to develop listening, communication and basic skills
c) need to develop an awareness of self as a responsible person
d) need to develop self-discipline
e) need to develop motor control, manual dexterity, and condifence in handling materials, tools and equipment
f) need to broaden vocational horizons
g) need for socializing experiences

GENERAL GOALS OF THE PROGRAM

The general goal of the EXPLORATORY VOCATIONAL TRAINING PROGRAM FOR PHYSICALLY HANDICAPPED AND MENTALLY RETARDED PUPILS was to provide an instructional-vocational program which would meet the needs of these handicapped students. Specifically the program set out to:

a) "provide experiences in shop areas which will provide in manipulation of materials and contribute to growth in motor control and manual dexterity"

b) "Provide experiences in group interaction in shops and opportunities for following through on individual and group projects which will contribute to growth in self-direction"

c) "provide opportunities for success and achievement in exploration of new media, materials, and equipment"

EVALUATION PROCEDURES & DESIGN

The evaluation was performed by a collection of information from parents, teachers, students, and by observations by evaluation staff members of shop settings and activities.

Teachers rated students at two intervals in the program, once on the seventeenth of July, and again on August thirteenth.

Students who were able to write, filled out questionnaires designed by the project staff. Other students were interviewed by project staff members. Parents also filled out questionnaires which were mailed to them by the project staff. Teachers responded to a questionnaire at the termination of the program. The items of these questionnaires are included in the appendix.

CONCLUSIONS AND RECOMMENDATIONS

Parents, and students were highly enthusiastic about the program. Teachers were more enthusiastic about the vocational chances of students at the beginning of the program than they were at the end. However, at the conclusion of the program, teachers noted students more highly on such traits as concentration span, perseverence, ability to interact easily with other trainees, confidence in his own ability, and dexterity and coordination.

The conclusions of the evaluation staff were that use of buses to transport some students would benefit enrollment. Another recommendation was that publicity for the program should begin earlier in the year. A third recommendation was that the use of teacher aides, and the realignment of the central staff to part-time teaching duties would enhance the functioning of the program.

The main recommendation was that a pilot year-long program, or a repeat of this years Summer program would be necessary before a unit for physically handicapped and mentally retarded students is added to the George Westinghouse Vocational and Technical High School.

CHAPTER I

BACKGROUND

The EXPLORATORY VOCATIONAL TRAINING PROGRAM FOR PHYSICALLY HANDICAPPED AND MENTALLY RETARDED PUPILS emerged from planning sessions of personnel from several bureaus of the New York City Board of Education, the Parent's Advisory Committee at George Westinghouse Vocational and Technical High School, and Parents' Committee on the Education of Handicapped Children.

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Nearly all of these students were viewed as having needs* for:

a) specialized educational assistance and social adjustment
b) need to develop listening, communication and basic skills
c) need to develop an awareness of self as a responsible person
d) need to develop self-discipline
e) need to develop motor control, manual dexterity, and confidence in handling materials, tools and equipment
f) need to broaden vocational horizons
g) need for socializing experiences

One of the problems in providing programs for handicapped students is that these children are presently served in widely dispersed facilities which do not have specialized equipment and materials.

* adapted from ESEA Title I Program Description

Therefore, a centralized facility was chosen where handicapped students could be provided with a chance to explore several vocational areas. This was George Westinghouse Vocational and Technical High School.

While no one program could attend to all of handicapped children, a Summer Program was designed which attempted to meet many of these special needs. An ESEA Title I proposal was developed and approval to conduct the Program was given to the New York City Board of Education at the beginning of July 1970.

CHAPTER II

GENERAL GOALS OF THE PROGRAM

The general goal of the EXPLORATORY VOCATIONAL TRAINING PROGRAM FOR PHYSICALLY HANDICAPPED AND MENTALLY RETARDED PUPILS was to provide an instructional-vocational program which would meet the needs of these handicapped students. Specifically, the program set out to (1)

a) "provide experiences in shop areas which will provide in manipulation of materials and contribute to growth in motor control and manual dexterity"

b) "provide experiences in group interaction in shops and opportunities for following through on individual and group projects which will contribute to growth in self-direction"

c) "provide opportunities for success and achievement in exploration of new media, materials, and equipment"

(1) Title I ESEA, project abstract

The specific objectives which were selected for intensive evaluation by the project staff were:*

a) "personal and social adjustment to include growth in self-discipline, self-directivness, and ability to interact with others."

b) "growth in motor control, manual dexterity, and facility in handling materials and equipment in a shop setting."

c) "development of positive attitudes in terms of their ability to function in the world of work."

CHAPTER III

EVALUATION PROCEDURES

The evaluation was performed by a collection of information from parents, teachers, students, and by observations by evaluation staff members of shop settings and activities.

EVALUATION DESIGN

Teachers rated students at two intervals in the program, once on the seventeenth of July, and again on August thirteenth.

Students who were able to write, filled out questionnaires designed by the project staff. Other students were interviewed by project staff members. Parents also filled out questionnaires which were mailed to them by the project staff. Teachers responded to a questionnaire at the termination of the program. The items of these questionnaires are included in the appendix.

The evaluation staff considered the project to be successful if:

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* Adapted from ESEA Title I, Project Description, pages 8 and 9

a) 70% of the students received higher terminal ratings on personal and social adjustment.
b) Student attendance was 75 percent.
c) 75 percent of the parents indicated that the EXPLORATORY VOCATIONAL TRAINING PROGRAM FOR PHYSICALLY HANDICAPPED AND MENTALLY RETARDED PUPILS program was beneficial for their children.
d) 75 percent of the students are rated by teachers as gaining confidence in their ability to perform in one of the seven shop areas.
e) 75 percent of the students felt that the EXPLORATORY VOCATIONAL PROGRAM FOR PHYSICALLY HANDICAPPED AND MENTALLY RETARDED PUPILS program helped them plan for a future vocation.
f) All students were able to gain enough manual dexterity sufficient to perform at least one mechanical operation in one of the seven occupational areas.

CHAPTER IV

DESCRIPTION OF FUNCTIONING PROGRAM

The evaluation staff made several visits to the project over a period of four weeks. Nine shops were in operation, including the following:

Basic Electronics (3 sections)
Business Machines (Mechanics and Repairs)
Clock and Watch Repair
Data Processing (Key Punch and Computer Programming)
Dental Mechanics
Jewelry Making
Wood Finishing

All shops were observed during a regular training session. The shops were all clear and free of obvious hazards. Students were using safety precautions, as required, in using different equipment. The walls were decorated with instructional charts and displays of students' work.

There was general teacher-student rapport in evidence in the shops and the teachers were actively engaged in demonstrating shop activities and helping individual students in a warm and enthusiastic manner.

Two obvious difficulties in the program were immediately noted. One was the need for fans and/or air conditioners to alleviate the heat in the classrooms during a hot and humid New York Summer, to make the shops more comfortable for both students and teachers. (The Data Processing shop is already air-conditioned to keep the computer "comfortable and working efficiently").

The other difficulty was the lack of an additional teacher or aide to relieve the teachers in their classrooms if they must leave for any reason. Because the shops cannot be left unattended, a supervisor had to be summoned from the office down stairs if a teacher wished to go out.

BASIC ELECTRONICS

Three shops in electronics were visited and a total of 20 students were present, all of them boys. One student was in a wheelchair. The students were working on soldering and repairing 3 tube audio amplifiers, and were following a colored schematic of a printed circuit. In one of the shops the boys brought in a turntable and hooked it up to the amplifiers they had built, and to several speakers. They were thus able to set up a complete music system and to hear music while they worked.

They were quite proud of their homemade system and eagerly turned it on full volume to demonstrate its effectiveness to the evaluation staff.

The teacher allowed them to bring in their own "rock" records andplay them while they worked, while jokingly alluding to the fact that Beethoven might be more soothing to work with. There was excellent rapport between all the students and the teachers in all shops, and two boys asked if they could transfer to Westinghouse High School to study electronics after the summer. One of these was a CRMD boy going into the 10th grade in Bushwick High School. His teacher commented that he is an excellent student, and is equal to, or better than, many students he teaches during the regular year. The teacher felt that he could easily fit into the Westinghouse Vocational Program, both because of his ability and his motivation.

BUSINESS MACHINE REPAIR

Five students, all boys, were present in this shop on the day it was visited, and they were all quietly and studiously working on repairing typewriters.

One student, who is physically handicapped and hard of hearing, was discovered to have an excellent mechanical aptitude. He had never touched a machine in his life before, but after two weeks of this summer shop experience, he became so adept at repairing typewriters, that he took a job on the side as a repairman. He now comes to school mornings to learn all he can, and works afternoons from 2-5 PM for $65 a week.

CLOCK AND WATCH REPAIR

The six boys in the shop were learning how to assemble and disassemble progressively smaller watches. They were competing with themselves for smaller and smaller watches to work on and were delighted when they "graduated" to a smaller size.

Out of the 11 students who are registered and normally present in the shop, the teacher commented that three could become full watchmakers if given a complete watchmaking course, and the eight others could learn saleable skills and work in a production-line watch factory, such as the Bulova factory. The teacher commented further:

> "The program as a whole should be pushed. It needs some improvement but it has been a long time coming in this city. Every kid could find a niche and he could be taught."

The students seemed very happy in the shop and were very eager to learn. One of the CRMD boys was observed as he put together a tiny ladies watch. He had entered the course three weeks late and couldn't handle even a large screwdriver at that time. He could not become an expert watchmaker, in the opinion of the teacher, because his reading skills were too low. However, he could learn saleable production-line skills. It was observed that the teacher worked with this student, as well as several other students, on an almost one-to-one tutorial basis.

DATA PROCESSING - KEY PUNCH AND COMPUTERS

This is known as the "glamour shop" of the school because of the computers and the air-conditioning. The twelve students present were all excitedly using the machines and chatting with each other. There were five boys and seven girls, and all but three of the students were able to learn to use only the keypunch machine. Three boys had learned to do simple computer programming. Several of the girls commented that they would like to be keypunch operators. The students proudly showed the evaluator a list they had compiled giving the names, addresses, birthdates, etc. of every student in the summer program. They had keypunched this information onto cards themselves and then programmed it for the computer and ran off several copies.

DENTAL MECHANICS

Ten students were present, six boys and four girls. They were all busy making shellac-based impression trays for full dentures. Thus far this summer, they have been taught three saleable skills:

1. How to make shellac trays.
2. How to make a bite block
3. How to box in impressions, and other similar work done at the plaster bench. (Five or six jobs are incorporated here).

The students seemed happy to be in the shop, and pleased with their own work. Even one girl, who the teacher felt could never learn the skills because of a motor handicap, was motivated to learn and eager to come to class.

The students, with this one exception - were all doing well at the bench work, but the instructions they were given were mainly verbal. Many of them would need more remedial reading in order to follow extensive written instructions.

The teacher was very pleased and optimistic about his students. He commented, "These youngsters apply themselves with more diligence and more motivation than some of the regular students at the High School. Their extra motivation may well make up for the lower capacity in some instances."

On the other hand, however, he commented that, "No one can come out of this summer program and get a job doing this because of lack of practice and speed. But with practice and speed, and a strong apprenticeship program, the saleable skills are here."

He felt that virtually all of the students could work eventually in a production laboratory where each person does a specific job or jobs but is not a master technician, although some students have the ability to become master craftsmen.

One of the physically handicapped students who has a congenitally deformed right hand was observed making a plaster cast with his left hand. The teacher said he has done excellent bench work and is using his left hand better and more often than ever before. He enjoys his work, is proud of the things he's made, and would like to transfer to this vocational program in the fall.

JEWELRY

Ten students, five of them girls, were observed finishing off their jewelry projects for the summer. Each student was working on an individual project and, according to his skill and ability, had made a bow-shaped gold pin, and/or a coin holder, and/or a ring. Those who had finished all three projects were allowed to select their own last piece of jewelry to make.

Their work appeared to be challenging, but within the grasp of each student. The teacher had geared the projects to each student's ability, on a one-to-one basis, but all had learned the basic fundamentals of jewelry making, even if some pieces were more elaborate than others.

One of the girls who successfully made four pieces of jewelry is handicapped with cerebral palsy. She sucks her thumb in class and appears to be emotionally immature. Yet she was eager and happy to come to class and learn, and her teacher believes the program has had many ancillary benefits for her. Besides making jewelry, she seems to have gained in self-confidence and self-esteem through her work this summer.

WOOD FINISHING SHOP

Six boys were observed busily finishing and refinishing small pieces of furniture. One had just refinished an old footstool and was starting to make an upholstered seat for it. He commented, "I just can't wait to take it home and put my legs up on it when I watch TV".

Another student demonstrated a beautifully stained and polished grandfather's clock case. He had brought it in from home, stripped off layers of old paint to get down to the original oak wood, and then stained and refinished. It,was a very handsome piece, professionally finished. He was taking it home to put the clock mechanism back inside and to present it to his mother to hang up on the livingroom wall.

CONCLUSIONS

The excitement, eagerness, and motivation of both the teaching staff and the students in the program were outstanding. With the exception of the data processing shop, where the students generally were very bright, all the other shop teachers felt that both the CRMD and handicapped youngsters were benefitting from this vocational program that has never before been offered to them. Both teachers and students were enthusiastic about continuing this program on a regular school-year basis, although the teachers did note some problems and limitations in dealing with these youngsters.

LOGISTICS OF PROGRAM

The program was supervised by a teacher-in-charge, who was aided by a general assistant. Three liaison teachers were appointed to assist the nine shop teachers in understanding and handling problems of these students. Two neighborhood Youth Corp. workers assisted in general office duties such as collecting attendance information.

The instructional program was conducted for three hours from 9:30 AM to 12:30 PM. A half-hour was allocated at the beginning and the end of the program to prepare and clean up the shops.

One station wagon was needed to transport certain students to and from the High School. All other students used public busses or subways to get to school.

CHAPTER V

IMPACT OF PROGRAM ON ITS PARTICIPANTS

A. Reactions of teachers to their classroom Experiences

Only one of the nine teachers had any previous experience working with physically handicapped or retarded students, and this experience was only for six months with a CRMD class.

Most of the teachers felt that a fully qualified teacher would be capable of teaching handicapped students. However, three teachers felt that their training alone was not sufficient. One stated that work with retarded students requires a special kind of motivation, while the other two felt that their training prepared them only for typical students.

All teachers believed that training would be necessary to work effectively with handicapped students. Six of them favored an orientation session of three sessions or less, while three others thought college level courses were necessary. One stated that this training was not necessary to teach physically handicapped, but was necessary only for the retarded.

All, except one of the teachers stated that they experienced difficulty when they first began working with retarded students. Two felt that they could not communicate easily with these students, three others found it difficult to find an initial instructional level. Two others stated that more information should be provided about the handicap. Only one teacher referred to the problems of controlling unruly behavior.

In contrast, few teachers stated that they had difficulty teaching the physically handicapped students. This was probably due in most cases to the small enrollment of these students. The business machine repair shop had no physically handicapped students enrolled. The only students who seemed to present difficulties were the hard of hearing. Two teachers felt that they had trouble communicating with them.

When asked about what advice they would offer to other shop teachers working with handicapped students, the teachers stressed patience and understanding. As one teacher stated, "put yourself in the position of their parents". Other teachers felt that the teachers should be prepared to adjust their expectations and instruction in order to properly cope with the students' handicaps.

As far as improving this kind of program, some teachers felt that better screening of students is necessary. One felt that the CRMD and physically handicapped students should not be taught simultaneously. Others felt that the late approval of the program diminished the amount of planning necessary for the successful completion of the program, and that subsequent efforts of this kind should be planned well in advance of the starting date.

B. Parent Reactions to the Program

During the fifth week of the six week program, questionnaires were sent to parents of the participants. A sample copy of the questionnaire can be found in the Appendix of this report. Fifty replies were received by the beginning of the final week of the program.

Table 1. Parental Reactions to Program

Question	Percentage of Replies Yes	No
Did your child look forward each morning to coming to school?	98%	2%
Does your child feel capable of working in an occupation related to the shop area he studied?	92%	8%
Would your child like to work in an occupation related to the shop area he studied?	88%	12%
Does your child seem more self-confident in his ability to do things?	92%	8%
Did your child seem more cheerful in the afternoon as a result of his occupation here in the morning?	90%	10%
Has your child formed any friendships with other trainees in the program?	82%	18%
Would you like to have similar shop activities offered for your child during the school year?	100%	0%

From these reactions it is clear that parents view the program as having beneficial effects on their children.

All parents responding stated that they would like a year long program for their child, and nearly all felt that their children looked forward to going to the program. Over ninety percent of the parents viewed their children as having more confidence in doing things and as capable of working in an occupation related to his shop area.

Somewhat fewer parents however, viewed their children as liking the work they were exposed to. As far as the important goal of interacting with other children, eighty-two percent felt that their child had formed new friendships.

Asked, "if your child were not in this program, what would he or she have done in the mornings from 9 AM to 1 PM?" 74% of the parents replied that the participant would have remained at home, sleeping or watching TV, and in few cases, playing.

The last item in the questionnaire was the open-ended question, "Would you please make additional comments of your reactions to the effect of this program on your child?"

The replies ranged from "I am glad that my son has a place to go and keep himself occupied", to

"He was happy to go and very much interested in the program he took. For some reason or other, L. never really 'made out' at summer camps. In the past we had gone to great pains and expense to find a summer camp for him. It never worked out. Yet this summer, due to the mornings at school, it was a really fruitful and wonderful experience for him. I feel the money that the Board of Education spent for this program was very worthwhile. If you will advise me to whom to write, I would be glad to do so advise the Board."

A sample of some of the other comments made by parents are included below:

"I think this program is very nice for children these days and times in keeping the children out of the street and helping them with their work."

"C. is doubtful, and I hope this program will improve him because he needs a lot of improvement."

"He asked to paint the porch and finish our wood door which we are going to let him do."

"My son liked the training program. It is a good experience for him. He likes the thing he is making. The training program will help him get a better job."

"For one, Mr. Tusa, the teacher is very patient with J. which is the first important step. J. wanting to go to school every morning and looking forward to the future of employment."

"I am happy that my daughter had a chance to participate in this program. It will be of help to her in getting a job."

"This could be an opportunity to help her in maintaining employment."

"I find such a program to be extremely valuable to my son. It teaches him to be more self-sufficient and be part of the outside world."

"It helps her to use her hands and also to extend her abilities to help herself."

"Since these special children need special needs, I was most happy to see M. go off on the train by himself, find the school, and do things on his own".

"He liked it very much. And thank you for training here."

"I think it is a very beneficial program. M. (my son) is very happy that he started this program and he feels he is accomplishing something. I think it would be an excellent idea to extend this program during school year."

"He looks forward to school every morning. He likes the idea that he can make things with his hands and they work."

"My son has taken a great deal of interest in electronics and would like to continue further in this type of vocational education."

"It helped him to know if he could do something productive, other than the regular school work. H. did not feel handicapped since he had a choice of what he possibly could do."

"He puts what he learns in school to use at home. It's a big help."

It is obvious that the parents' overall reaction is highly positive. They feel that the program is not only helping their children fruitfully occupy their time, but that the program offers the possibility of a route to a job for their children.

C. Student Reactions and Performance

During the six weeks in which the EXPLORATORY VOCATIONAL TRAINING PROGRAM FOR PHYSICALLY HANDICAPPED AND MENTALLY RETARDED PUPILS program was conducted, one hundred and twenty four students attended at least one session.

These students were predominantly classified as retarded. The classification of these students is presented in Table 2.

Table 2. Classification of Students' Handicaps

Non Handicapped	5	4%
Hearing Impaired	11	9%
Physically Handicapped	13	10%
Visually Handicapped	2	2%
Asthma	2	2%
Retarded	92	73%
	125	

1. Questionnaire Responses of Students

Many students attended a few sessions and then failed to appear at any subsequent sessions. The delay in funding approval led to the enrollment of some students into the third week of the program. The great majority of the one hundred and twenty-five were enrolled during the first week and the beginning of the second week.

Sixty-eight of these students completed questionnaires regarding their experiences and reactions to the program.

The recruitment of these students was primarily through letters sent to the students by the teacher-in-charge. Sixty percent of the students reported that they heard about the program through this letter. Only twenty-three percent received this information at their home school, the place where the recruitment was originally scheduled to take place. Six students reported that they heard about the program from their friends, these messages apparently leading to the enrollment of the five non-handicapped

students.

The students perceived great latitude in choosing the shop or shops in which they received training. Nearly seventy-five percent chose the shop because "they liked it", and only six percent stated that they were assigned to a shop by staff personnel. The rest chose the shop on the basis of their parents or friends suggestions.

Nearly eighty percent stated that they would like to work in the vocational area that they were studying. This high percentage may be due to the limited vocational experiences of many of these students prior to enrolling in the program.

Somewhat fewer students felt that they would be able to work in this area at the end of the training program. From reactions of shop teachers, it was clear that few, if any, of the students acquired enough saleable skills in the short program. Yet sixty percent believed that they would be able to work in these areas. It was perhaps not made clear to these students, the level at which most jobs in these fields are performed. Further evidence of this lack of realism is obvious when students were asked how much more training they would need. Only seven students indicated that they required training of over a month's duration.

The students were asked what they would be doing if they were not enrolled in this program. Seventeen students indicated that they would be doing "nothing". Another twelve indicated that they would be staying home, sleeping late, or watching television. The other students stated that they would be working, cleaning house, looking for work, playing, or going to Summer school or day camp. It is clear that this program profitably fills the time for a large number of these students.

The students also reacted positively to having the program extended to eight weeks and to having the program offered again next Summer. Forty percent did not want the program extended to eight weeks, primarily because they felt the room was too hot, the program too long, or because they had other things they wanted to do. Only one student stated flatly that he didn't like the program. The students who wanted the program extended stated that they liked it, or wanted to learn more. Similar reasons were stated for continuing the program next year. In contrast, only twenty-six percent did not want to see the program repeated next year. Many of these students felt that they would get a job next year and would, therefore, probably not profit from the reoffering of the program.

The students were also asked what they liked best and least about their teachers, other trainees, and their shop experience.

The teachers were liked most because;they were "nice", "understanding", and "helpful"of the way they taught. Few students made negative comments. One student said the teacher "yells a lot", and another stated that the"teacher got on my nerves". However, only six negative comments were made.

Concerning the other trainees, the major reaction was that the trainees were "friendly", 'helpful", and "nice". Only seven negative comments were made about other trainees. Six of these students stated that there was too much fooling around.

Mostly positive reactions were also made about the shop experience. The predominant positive comments centered around the ability to fix and make things, and the "interesting" nature of the shop experience. Of the ten negative comments, three stated that the shop was too hot, and two stated that there was sometimes not enough to do.

The overall reaction to the program and its participants is highly positive. While some of the perceptions engendered in the program are probably unrealistic, these students have apparently seen themselves having undergone a useful experience during the six week program.

2. Student Attendance

Because students were enrolled as late as the third week of the scheduled program, attendance was computed for the last two weeks of the program. Table 3 contains this information.

Table 3 Student Attendance During the Last Two Weeks

Number of Absences			Total days absent
0	56	45%	0
1	18	14%	18
2	12	10%	24
3	5	4%	15
4	6	5%	24
5	4	3%	20
6	1	1%	6
7	5	4%	35
8	2	2%	16
9	4	4%	36
10	11	9%	110
	124		304

For the one hundred and twenty-four students enrolled, there were three hundred and four class-days absent, out of twelve hundred and forty days possible. This achieves the goal of attaining an overall attendance rate of (at least) seventy-five percent, although just barely.

More importantly, nearly sixty percent of these students attended all sessions during the past two weeks or missed only one session. This reported attendance conflicts somewhat with observations made by the evaluation staff. On many of the visits, the number of students was nearly half the register for these classes. The attendance records were complicated by the fact that many students attended more than one shop during the day, and teachers may have reported pupils as present because they thought they were attending other shop classes.

The seventy-eight questionnaires administered to the students is also far below the officially recorded total of one hundred and twenty-four students. There are other possible reasons for this low return, other than attendance, but there is some reason to believe that low attendance was one of the possible causes.

The 75% attendance rate is artificially depressed because the rate includes eleven persons who did not attend any sessions during the last two weeks. These students never attended after being enrolled during the first week.

A reasonable assessment of the attendance of these students is that it is unexpectedly high. Many of these students had to travel over long distances by bus and subway, in the warmest period of the summer. And yet, the attendance was nearly perfect for over half of these students.

3. Teacher ratings of Students

Students were rated by their teachers at the end of the second week, and again at the termination of the program. The changes in these ratings are presented in Table 4. (a copy of the rating scale is included in the Appendix.)

Table 4. Teacher Ratings of Students' Behavior

Variable	Positive Change	Negative Change	No Change
1. Attendance	20%	30%	50%
2. Motivation	32%	38%	30%
3. Concentration Span	36%	26%	38%
4. Perseverence	38%	18%	44%
5. Ability to understand instructions	44%	18%	38%
6. Ability to accept correction.	32%	24%	44%
7. Ability to interact easily with other trainees	40%	16%	44%
8. Ability to work independently after instruction	42%	30%	28%
9. Ability to make himself understood	38%	14%	48%
10. Confidence in his own ability to acquire the shop skills	44%	20%	36%
11. Fine manual dexterity	30%	10%	60%
12. Gross motor coordination	26%	18%	54%
13. Speed in work	24%	26%	50%
14. Accuracy or quality of work	26%	26%	48%
15. Prognosis for employment in this area now	26%	28%	46%
16. Prognosis for employment in this area with more training	30%	40%	30%
17. Prognosis for employment generally	14%	30%	56%

Teachers did not rate students as changing positively on all the behaviors and characteristics rated. Attendance, motivation, speed of work, and prognosis for employment were given lower average ratings at the termination of the program than they were at the beginning.

The more negative ratings given to students at the end of the program on their future prospects for employment were probably due to a greater awareness of the limitations of many of these students. The teacher's ratings may reflect the painstaking pace at which many of these students proceeded in their training.

The positive changes most evident were; perseverence, ability to understand instructions, ability to interact easily with other trainees, ability to work independently and to make himself understood, fine manual dexterity, and confidence in his own ability to acquire shop skills.

As far as the goal of having seventy-five percent of the ratings reflect positive change, this was not met. Considered in another way, however, only twenty-four percent of the ratings were in the negative direction while thirty-two percent of the ratings were in the positive direction. This reflects a generally more positive view of the capabilities of these students.

When the special goals of this program are concerned, viz; ability to interact easily with other trainees, ability to work independently, and confidence in his own ability, the positive changes are even more pronounced.

Thus, the teachers did not view the students as changing positively on all characteristics. Generally, they viewed the students' occupational possibilities somewhat more negatively, but saw positive changes on those characteristics which are necessary for acquiring more training. Ability to work independently and to make himself understood, the ability to understand instructions, and self-confidence are all important characteristics to have if these students are to continue their training.

4. Skills Acquired by Students

In the evaluation of the program, one objective was the development of manual dexterity sufficient to perform at least one mechanical operation in one of the seven occupational areas.

This goal was not attained by a substantial number of students. Either because they did not attend classes for a long enough period of time, or because they chose too difficult a shop, some students were reported as not having learned any complex operations.

There were, however, many stories of success which were reported by teachers. The following skills were reported as being learned by students in each area.

Data Processing

Keypunching several fields in specific card areas (5)
Duplication (3)
Error correction (6)
Separation of data fields in key punching (1)
Keypunching of program cards (3)
Keypunching of alpha and numeric data (2)
Keypunching (1)

Jewelry Making

Filing, polishing and sawing (4)
Making a bow pin (1)
Filing and polishing (5)

Business Machine Repair

Replace ribbon drive arm (2)
Removal of roller (1)
Removal of ribbon drive shaft and gear (3)
Removal of carriage (2)

Dental Lab Procedures

Construction of full trays and bite blocks for dentures (9)
Construction of wax triangles (2)
Plaster bench work (5)
Full denture trays (1)

Clock and Watch Repair

Assemble and disassemble a small clock train and mainspring (3)
Assemble and disassemble a ladies watch movement (3)
Assemble and disassemble a man's watch movement (1)

Wood Finishing

Furniture refinishing (4)

Electronics I

Connect wires (2)
Construction of a three tube audio amplifier (3)
Wiring and soldering (2)
Connecting bulb, battery and switch (3)
soldering (2)

Electronics II

Soldering components in a chassis (1)
Working with schematics (1)
Soldering techniques (4)
Solder and make connections (2)

Electronics III

Use of test instruments and gauges (4)
Use of gauges (1)
Assembly of phonograph systems (1)

The skills learned in these shops range greatly in complexity from filing and sawing to the ability to work with schematic diagrams. The great range and variety of the skills which these students have learned give evidence that one of the goals of the EXPLORATORY VOCATIONAL TRAINING PROGRAM FOR PHYSICALLY HANDICAPPED AND MENTALLY RETARDED PUPILS have been met, i.e. that they explore various occupational areas.

It is also clear that six weeks is too short a time to learn a skill at a level at which the student could acquire employment in the field. Some students believed that this kind of training would lead directly to employment in some field. This was, of course, not intended by the planners of the program. They viewed the program as laying the groundwork for vocational training either in a school setting or on-the-job.

It is also clear from responses of some teachers, that they believed that they should be helping the students acquire "saleable" skills. Yet the scope of the program is obviously too limited for these students to acquire skills at such a high level.

The letter sent to the parents of some of the students may have conveyed such meanings. It stated,

"This program is intended to develop pre-vocational skills for special students in areas where job opportunities are plentiful and skilled workers are needed."

The term "pre-vocational skills" may have been interpreted broadly by parents and students as skills directly leading to employment. If this is true, then of course, many parents and students will be disappointed by the results of the program. Few, if any of these students, can translate what they have learned into immediate employment. For some of them, long

programs would be necessary, and for many others, even long training programs would not assure employment.

One consequence, however, may be more positive. Most of these students are capable of performing operations which are required in assembly and manufacturing of various products. Knowing that they can solder and wire; knowing that they can construct plaster blocks; knowing that they can assemble small watches, may encourage them to seek employment in these field. Undoubtedly, many of these operations are capable of being learned or have been learned by many of these students. If so, then this summer's experiences have been exceedingly fruitful for many of these students.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

One of the long range goals of this program was to test the feasibility of the development of a vocational and technical unit attached to the George Westinghouse Vocational and Technical High School, specifically designed to serve physically handicapped and retarded pupils.

The outcomes of this Summer Program raised several issues regarding this long range action. The shop teachers, while initially quite enthused about the employment prospects of these students, believed that most of these students would not be able to acquire the skills necessary for technician-level employment in the occupational areas studied during the summer program. Therefore, holding out the prospects of employment at the technician level in these areas (particularly for the retarded who comprised the majority of the student body) would be psychologically defeating for both parents and students. It is quite possible that many jobs exist at the sub-technician level which also could be the focus for training.

If these jobs exist in industries, like electronics manufacturing, then new standards for terminal training level performance could be incorporated into shop courses in the high school This would take a great amount of planning by representatives of industry, and the shop training staff. It is not an easy task but it could probably be done.

Secondly, the observations of teachers indicate that special techniques and materials may be necessary for setting up a comprehensive program for these students. Patience and sympathy in the teaching staff were indicated as important qualities for teachers to have, and hopefully the teachers staffing these programs would bring these qualities to the teaching situation. Teachers can not be easily trained to a acquire these traits, but they can be trained to understand the pace, sequencing, and rate at which the training of these students should take place. This summer's experience is undoubtedly important in achieving greater understanding, but a longer experience is probably necessary.

Thirdly, the difficulties of travel to and from the school should be better understood. High attendance rates would be mandatory if maximum student progress is to be achieved. The high levels of motivation these students bring to training programs of this kind indicates that attendance would not be a problem if adequate modes of transportation are available. Perhaps the lower than perfect attendance this summer was due to the availability of other pleasant things to do, sickness, heat, etc. It may, however, have been partially due to the long distance subway and bus travel with all its inconvenience. It may also have been due to the reluctance or fear of parents to sending their children on this kind of public transportation. If so, other means of transportation, such as busses which go directly to the school, may be one answer. The issue, however, requires some research and planning.

It would appear that a reoffering of the program next summer would serve many purposes. Some of the problems which afflicted this summer's program could be more adequately ironed out. Selection of students could occur earlier in the various sending bureaus, and no hasty letter would be necessary to boost enrollment. Better utilization of shop facilities would be possible if larger numbers of students could be recruited. This summer's program fell far below the projected enrollment, partly it would seem, by the lack of participation of parochial school students.

The original plan to use four busses was discarded. Apparently, most students were able to use public transportation. The busses, however, might have served to increase enrollment, by making travel less difficult.

The addition of a teacher-aide or the realignment of the central staff to parttime teaching functions would allow greater utilization of teaching resources. Four persons who served central staff functions were also capable teachers. These persons could have been additionally useful in the classroom. The amount of paperwork in this program was probably not unusually burdensome, and some of the talents of these liaison teachers would have added significantly to the availability of trained manpower.

The main conclusion of the evaluation staff is that the program met many of its goals. The attendance, pupil growth in self-confidence and self-directed behavior, student and parental evaluations, all support the judgement that the program was highly successful. Although enrollment did not meet the original estimates, and there was some disillusionment on the part of teachers about the future employment prospects of these students; this program seems to have met an obvious educational need. A repeat of this kind of program next summer, and possibly a pilot program during the school year, for a limited number of students, would seem to be the most appropriate course to follow if the knowledge gained during this year's program are to be applied fruitfully to the education and training of the physically handicapped and retarded secondary school student.

TRAINEE QUESTIONNAIRE

1. Name _____ 2. Male_____ Female _____ 3. Phone _____
4. Address _____
   number and street borough zip code
5. Father's name _____ 6. Mother's name _____
7. Shop or Shops _____ 8. Handicap _____
9. What school do you attend? a. H. S. _____ d. Sch. for handicapped____
   b. J.H.S. _____
   c. O.T.C. _____ e. Other _____

10. How did you hear about this program?
    _____a. Your teacher
    _____b. Someone at your school
    _____c. Friends
    _____d. Letter from program
    _____e. Phone call from program
    _____f. Other

11. Why did you pick your shop or shops?
    _____a. Parents' suggestion
    _____b. Friends' suggestion
    _____c. Was assigned to you when you got here
    _____d. Chose shop yourself because you liked it
    _____e. Other reason

12. Is there a special course you would like to take that is not given at this time? Yes____No_____. If yes, what course? _____
13. Do you feel you would like to work in the area you are studying? Yes_____ No_____.
14. Do you feel you will be able to work in this area at the end of the training period? Yes____No_____. If No, about how much more time do you think you would need? _____
15. If you were not enrolled in this program, what would you have done in the mornings for this period?_____
16. Would you like to have the program extended to 8 weeks? Yes____No_____ Why?_____
17. Would y u like to see this program offered again next summer? Yes_____ No ____. Why?_____
18. What did you like most about
    a. Your teachers?_____
    b. The other trainees?_____
    c. The shop you are taking _____
19. What did you like least about
    a. Your teachers_____
    b. The other trainees _____
    c. The shop you are taking _____
20. Other comments _____

INDIVIDUAL PUPIL EVALUATION

DATE_____

TRAINEE_____ SHOP_____ INSTRUCTOR_____

HANDICAP_____ ROOM_____

Note to Instructor:

In completing the ratings shown below, please use a scale of 1-5 as follows:

1. Poor - performance ranging under 5th percentile of normal class.
2. Fair " " from 6th to 30th " " " "
3. Good " " from 31st to 70th" " " "
4. Very good " " from 71st to 94th" " " "
5. Excellent " from 95th percentile and over of normal class.

*****Each individual is to be rated in comparison to the students you ordinarily see during the school year.

	LOWEST 1	2	3	4	HIGHEST 5
1. Attendance					
2. Motivation					
3. Concentration Span					
4. Perseverance					
5. Ability to understand instruction					
6. Ability to accept correction					
7. Ability to interact easily with other trainees					
8. Ability to work independently after instruction					
9. Ability to make himself understood					
10. Confidence in his own ability to acquire the shop skills					
11. Fine manual dexterity					
12. Gross motor coordination					
13. Speed in work					
14. Accuracy or quality of work					
15. Prognosis for employment in this area now					
16. Prognosis for employment in this area with more training					
17. Prognosis for employment generally					

What is the most complex operation that the trainee has learned to perform?

_____

_____

Other comments: _____

PARENT QUESTIONNAIRE

Date _____

Dear _____.

We are pleased to have been able to offer your child an opportunity to participate in this Exploratory Vocational Training Program. This program was specifically designed to provide instruction for students with special needs who cannot receive this instruction during the regular school year. Based on the effectiveness of this program, consideration of the possibility of extending these activities into the regular school year may be made.

For this reason, we earnestly request your cooperation in replying to the following questions so that we may be in a better position to evaluate the results of this summer's activity and its implications for a city-wide extension to serve all students with special needs. Your cooperation will help to make this possible.

1. Did your child look forward each morning to coming to school? YES___ NO___
2. Does your child feel capable of working in an occupation related to the shop area he studied? YES___ NO___
3. Would your child like to work in an occupation related to the shop area he studied? YES___ NO___
4. Does your child seem more self-confident in his ability to do things? YES___ NO___
5. Did your child seem more cheerful in the afternoon as a result of his occupation here in the mornings? YES___ NO___
6. Has your child formed any friendships with other trainees in the program? YES___ NO___
7. Would you like to have similar shop activities offered for your child during the school year? YES___ NO___
8. If your child were not in this program, what would he/she have done in the mornings from 9AM to 1PM _____
9. Do you know of something of which your child is particularly proud that he did or learned in the program? _____
10. Would you please make additional comments of your reactions to the effect of this program on your child. (use other side if necessary). _____

Thank you very much for your cooperation in filling out this questionnaire and returning it.

Very truly yours,

Benjamin Wachs
Teacher in Charge

THE EXPLORATORY VOCATIONAL TRAINING PROGRAM
FOR PHYSICALLY HANDICAPPED & MENTALLY RETARDED PUPILS

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