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Separate Schools for Potential Dropouts

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HIGH school administrators are acutely aware of the dropout problem that exists today. Recently Harold Howe II, former U.S. Commissioner of Education, spoke before Congress during hearings on the dropout problem. In his testimony he stated, "Attempts to coax and persuade potential dropouts to stay in school when the school continues to fail them, accomplish absolutely nothing."¹ He proposed that schools need to change the curriculum and related experiences in order to reduce the dropout rate.

Daniel Schreiber, one of the leading authorities on the topic of dropouts, describes this need in *Profile of the School Dropout*.

¹ Kenneth Russell. "Stay in School." *American Education* 4 (6): 13; June 1968.

The United States "cannot afford to have almost one million youths drop out of school each year to become unwanted and unemployed. . . . We must reconstruct our education system to provide relevant, successful experiences for all children so that they will become and remain an integral part of our society."² As our school programs change and become more relevant to today's society, it is hoped the number of dropouts will continue to decline.

Pontiac is a predominantly industrial

² Daniel Schreiber. "700,000 Dropouts." *American Education* 4 (6): 5-7; June 1968.

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town with a population of approximately 90,000. It is located in Southeastern Michigan, 35 miles north of Detroit. Three divisions of General Motors Corporation contribute 60 percent of the tax bill, which accounts for a valuation of \$19,269 per pupil. Twenty-five percent of the city population is Negro.

The purpose of this article is to share the results of an evaluation of Pontiac's dropout prevention program with other educators. These findings may be useful to other school systems that are contemplating similar involvement and that want to capitalize upon the experiences of this existing program.

The Individualized Instruction Program (I.I.P.) has been in operation for two years. To what extent has this program been effective in changing student behavior and in improving academic achievement? Is there a relationship between participation in the I.I.P. and a change in behavior by the participant? The following variables were examined: (1) school attendance; (2) student achievement; (3) dropout potential; (4) dropout rate; (5) student self-concept; (6) student opinions; (7) personal characteristics related to teacher adequacy; and (8) graduate follow-up study.

Method and Procedure

Two hundred fifty students who had dropped from high school (grades 10 through 12) in the Pontiac Public School District during the past one and one-half years were sent letters encouraging them to apply for attendance in the I.I.P. A total of 20 students responded to this invitation. Other students, who either had dropped out of school or were potential dropouts, were recommended by teachers and administrators. The records of these students were examined and interviews were scheduled. Forty-five students (31 boys, 14 girls) were selected for the opening semester of the program in January 1968. Table 1 presents a description of the problems that characterized these 45 students. The fact that these students had multiple problems accounts for the discrepancy between the number of students (45) and the total num-

ber of problems, which is 98. Since the first day the school opened, there have been 114 students enrolled in the program (as of February 1, 1969). Thirty-three of these students have received high school diplomas from this program.

Poor Attendance	Low Achievement	Emotional and Behavior	Poor Motivation	Pregnancy	Drop
15	17	17	21	7	21

Table 1. Students Enrolled in I.I.P. and Their Reasons for Leaving the Regular High School Setting

The basic methodology used in measuring these variables was the parallel study technique. A matched population of 36 students in the regular high school setting were compared with 36 students in the I.I.P. Every attempt was made to match the groups by sex, grade, age, race, intelligence quotient, grade point average, attendance, junior high school attended, and emotional behavior. These matching data were obtained primarily from student cumulative records (CA-39) and other statistics provided by the school district data processing center for the preceding year (1967-68).

The matched sample technique was employed and the same methods were applied to the I.I.P. students, the experimental group, as well as the matched sample of 36 students in the normal high school setting.

The methods of obtaining data for each variable are explained separately as follows:

1. *Attendance.* The objective in using attendance as a variable was to determine what probable effect the I.I.P. might have on reducing absences. The attendance for each I.I.P. student was tabulated and subsequently compared to the attendance of the matched sample of 36 students in the regular high school setting. Means, standard deviations, t-scores, and significance of differences between the two groups were computed and analyzed.

2. *Achievement.* The California Achievement Test of cognitive learning was used to measure academic achievement. Since each student in the Pontiac school sys-

tem is administered this test in the respective junior high schools, it proved to be valuable as pretest data. The test battery included the following scores: (a) reading comprehension and (b) reading vocabulary. Included also were percentiles, grade placement, and norms for each student. Post-test data were obtained by readministering the reading vocabulary and comprehension tests to both the I.I.P. students and the matched sample of 36 students in the regular high school setting. Means, standard deviations, t-scores, and significance of differences between the two groups were computed and analyzed.

3. *Dropout Potential.* The Cottle School Interest Inventory was used to measure dropout potential. Cottle's 150-item true-false test battery was validated through large samplings which include a recent follow-up survey with an accumulated involvement of 33,000 students. Dropout potential is used as a variable to ascertain what effect participation in the I.I.P. has had when compared to those students from the matched sample. Statistical treatment included computation and analysis of means, standard deviation, t-scores, and significance of differences between the two groups.

4. *Dropout Rate.* The two senior high schools in Pontiac had an average dropout rate for 1967-68 of 17.1 percent. What is the dropout rate of students in the I.I.P.? What are the dropout figures for those 36 students in the matched sample group in the regular school setting? Data were obtained from January 1968 through May 1969, and analyzed. Comparisons were also made using city-wide dropout rates.

5. *Student Self-Concept.* The Self-Esteem Inventory was used to assess the self-concept of these students. Professor Stanley Coopersmith, presently teaching at the University of California, Davis, developed this test. The modified, 42-item S.E.I. test was administered to the matching sample of 36 high school students in the regular setting and the students in the I.I.P. Means, standard deviations, and the significance of differences of the groups were computed to ascertain what effect participation in the

I.I.P. might have on the students' self-concept.

6. *Student Opinions.* A 31-question student opinion exercise was developed in attempting to determine how students perceived the I.I.P. This questionnaire was built out of the objectives of the program. It was originally intended to serve as a bench mark in assessing whether the isolated setting was an important ingredient in improving behavior and achievement. Each item in the questionnaire was analyzed. Comparisons and percentages of the responses were tabulated for the students in the I.I.P.

7. *Personal Characteristics Related to Teacher Adequacy.* This variable was intended to measure any differences that may distinguish the I.I.P. staff from those teachers in the regular high school setting. The four I.I.P. staff and a random sample of 20 teachers from the regular high school setting were administered the Minnesota Teacher Attitude Inventory, Form A. Attitudes such as teachers' acceptance of students, democratic process, group solidarity, lack of subject matter bias, and an understanding of the learning process were analyzed. Means, standard deviations, t-scores, and significance of differences were used in the statistical analysis.

8. *Graduate Follow-up Study.* Nineteen students had graduated from the I.I.P. when this study was made. A questionnaire was developed which was mailed to each of these students allowing them to express their feelings and to evaluate various aspects of the program. Students were asked what they were presently doing, where they were employed, and if they were attending a college or some other institution. Other items included on the questionnaire were military service and marital status. A major concern of this questionnaire was to assist in determining whether the I.I.P. provided only a temporary respite from the realities the student must eventually face after graduation or whether these students were making a satisfactory adjustment in the world of work. The results of this follow-up were recorded and evaluated.

Hypothesis

The following null hypothesis was tested: There is no relationship between the changes in behavior and achievement of students characterized by various combinations of poor attendance, low achievement, antisocial behavior, or sociopsychological problems, and their participation in the Individualized Instruction Program (I.I.P.).

Results

1. *Attendance Variable.* A comparison of the differences in the percentage of absence for 36 I.I.P. students and 36 students in the matched sample was computed. The I.I.P. students' present semester data were compared with the data obtained from their last semester's attendance prior to entering the I.I.P. The mean and standard deviation of the percentage of the two groups were compared, producing a t-score of 6.1. The probability of the null hypothesis being correct was less than .01 and, consequently, the hypothesis was rejected. The results indicate that the attendance of I.I.P. students, when compared with the attendance of the matched sample, significantly improved.

I.I.P.		Matched		Significance Level	
\bar{X}	S.D.	\bar{X}	S.D.	t	
6.2	11.7	-10.4	-14.1	6.1	.01

Table 2. Attendance Variable

This variable suggests that it is possible to create a positive atmosphere for learning, where many of the students were previously considered dysfunctional. In this situation, someone paid positive attention to these students, who may never have experienced such attention before. The teachers attempted to instill in the I.I.P. student a sense of belonging. Teachers often drove students to and from school. Contact by phone or visitation was promptly made when students were absent. One student said: "If you don't come to class at the I.I.P., teachers worry about you and think you have a problem." The students have a feeling of belonging. Since they are actively involved in classroom plan-

ning, they have developed a sense of responsibility to each other and the staff.

2. *Achievement Variable.* The achievement variable consists of reading comprehension and reading vocabulary.

a. *Reading Comprehension.* A comparison of California Achievement Test grade placement scores was computed for both groups on reading comprehension. The pre-test data were available from records of I.I.P. students and the matched sample of students from the regular high school setting, since it is the practice in Pontiac to test each eighth grade student on the C.A.T. This test was readministered to both groups to obtain post-test data. The mean and standard deviation of the differences of the grade placement scores of the two groups were compared, producing a t-score of 3.38. The probability of the null hypothesis being correct was less than .01 and, consequently, the hypothesis was rejected. The results indicate that the reading comprehension of I.I.P. students, when compared to the matched sample, significantly improved. The average post-test reading comprehension grade placement score for I.I.P. students was 8.7, compared to 7.6 for the matched sample.

It is the expressed opinion of many authorities on the dropout that cultural disadvantage appears to be one of the major contributive factors to low scholastic achievement and retarded linguistic ability; yet the differences in reading comprehension and reading vocabulary scores in pre- and post-tests were significant at the .01 and .02 levels respectively. Seventeen I.I.P. students improved their comprehension grade placement scores 2.0 grades or better, while only seven of the matched sample achieved this level. The research suggests that participation in the I.I.P., when compared to the matched sample, will significantly improve reading comprehension.

There are several reasons which might

I.I.P.		Matched		Significance Level	
\bar{X}	S.D.	\bar{X}	S.D.	t	
1.56	1.18	0.81	1.23	3.38	.01

Table 3. Reading Comprehension

account for the improvement of comprehension in the I.I.P. Emphasis is placed on reading through high interest reading materials. Factors such as boredom, incentive, patience, and endurance are constant considerations. The methodology is "student-centered" and uses multiple texts. The teachers know students so well that they are constantly aware of individual needs and frustrations.

b. Reading Vocabulary. A comparison of California Achievement Test grade placement scores was computed for both groups on reading vocabulary. Pretest data were available for I.I.P. students and the matched sample from eighth grade testing results. The reading vocabulary test was readministered to both groups to obtain post-test data. The mean and standard deviation of the differences of the grade placement scores of the two groups were compared, producing a t-score of 2.66. The probability of the null hypothesis being correct was less than .02 and, consequently, the hypothesis was rejected.

I.I.P.		Matched		Significance Level	
\bar{X}	S.D.	\bar{X}	S.D.	t	
2.24	1.24	1.35	1.30	2.66	.02

Table 4. Reading Vocabulary

Results for 72 students, 36 from each sample, were compared in the achievement variable. Twenty-four I.I.P. students had an increase of 2.0 grades on reading vocabulary while only 13 of the matched sample achieved this level. This research indicates that students participating in the I.I.P. improved their reading vocabulary significantly more than did the students in the control group. The reasons for this notable improvement are likely to be similar to those cited in the preceding section on reading comprehension.

3. Dropout Potential Variable. Seventy-two students, 36 from the I.I.P. and 36 from the matched sample, were administered the Cottle School Interest Inventory battery to measure dropout potential. The higher the score on the 150-item true-false test battery,

I.I.P.		Matched		Significance Level	
\bar{X}	S.D.	\bar{X}	S.D.	t	
29.4	8.7	34.2	9.9	2.07	.05

Table 5. Dropout Potential Variable

the higher the dropout potential. A score of 30 is generally considered the "critical point" in determining a student's dropout potential.

The computed analysis of the differences of the two groups indicated that participation in the I.I.P. did reduce dropout potential scores significantly when compared to the matched sample and, hopefully, increased school holding power. The I.I.P. mean was 29.4, while the mean of the matched sample was 34.2. The mean average of the students in the regular high school setting exceeded the critical point. The mean and standard deviation of the two groups were compared, producing a t-score of 2.07. The probability of the null hypothesis being correct was less than .05 and, consequently, the hypothesis was rejected. Many of the conclusions are interpreted as a group tendency and do not infer that each student who participates in the I.I.P. improved. Yet the results of the Student Interest Inventory suggest that the improvement of I.I.P. students' perceptions is related to participation in the program.

4. Dropout Rate Variable. There were certain limitations in determining the student dropout rate since a comparison of the two samples was impossible. This was due to the fact that in the process of identifying and selecting the matched sample, 25 of these students dropped out. Dropout data were estimated for I.I.P. students. Official dropout rates for the high school population (1967-68) were obtained.

Since January 1968, 114 students have enrolled in the I.I.P. Seventeen students dropped out after they had attended the I.I.P. for ten days. An additional 19 students dropped out with ten days or less of attendance. It was felt that these 19 students, many of whom had attended only a few days, had little or no contact with the program, and consequently did not reflect adequately the I.I.P. The dropout rate for the I.I.P. was obtained by dividing the number of students who had attended ten days or more (17) by

the total enrollment for one year (114). This resulted in I.I.P. dropout rate of 14.9 percent.

Different dropout rates (1967-68) for the two Pontiac high schools were used. The dropout rate for grades 10 through 12 was 17.1 percent. In contrast, 26 percent of the ninth grade class in 1964 did not graduate in 1967-68. This accounted for 401 dropouts.

Thirty-three students have already graduated from the I.I.P. The I.I.P. program has reduced the combined ninth grade dropout rate in Pontiac by 2 percent. Last year, approximately 19,000 students dropped out in the Detroit metropolitan area of Wayne, Oakland, and Macomb Counties.

5. *Self-Concept Variable.* Coopersmith's Self-Esteem Inventory was used to assess self-concept. A comparison between 36 I.I.P. students and 36 students in the matched sample was computed. The mean and standard deviation of the scores of the two groups were compared producing a t-score of .05. The null hypothesis was accepted. The mean difference of the two samples was only .08. Student participation in the I.I.P. did not appear to be related to a change in the students' self-concept.

I.I.P.		Matched		Significance Level	
\bar{x}	S.D.	\bar{x}	S.D.	t	N.S.
28.2	7.3	28.1	6.07	.05	

Table 6. Self-Concept Variable

Sixty-one percent of the I.I.P. students had self-concept scores equal to or better than the matched sample. Further investigation of the raw scores discloses that the matched sample had only two students with a score of 20 or below (17 and 19). The I.I.P. sample had six students with a score of 20 or below (13, 14, 14, 16, 19, 19).

The warmth and sincerity that pervade the I.I.P. atmosphere would seem to indicate that these students had higher self-concept scores.

6. *Student Opinions Variable.* A 31-question Student Opinion Questionnaire was developed to identify students' perceptions of the I.I.P. Comparison, analysis, and percentages of high response items were made.

The responses of 36 students currently enrolled were compared to the responses of those students who have graduated from the I.I.P.

These high response items are placed into three categories that comprise the main ingredients of I.I.P. as perceived by the respondents. The three categories are: (a) teachers and methodology; (b) school atmosphere; and (c) students' self-perceptions.

a. *Teachers and Methodology.* The students currently enrolled and the graduates agreed favorably on the following high response items regarding the I.I.P. They felt that teachers try harder to understand students; that students are encouraged to express their own opinions; and that teachers care less about grades and more about the students. There was a considerable difference on only one item. The students currently enrolled responded (true 29, false 7) that: "A high school diploma is the only way to get ahead." All of the graduates responding felt that this statement was true.

b. *School Atmosphere.* Both groups agreed favorably on six items concerning their perceptions of the I.I.P. school atmosphere. They felt that as a result of this new environment, they liked school better; the school had a more relaxed atmosphere; the students really enjoyed the program; there was less pressure; they did not prefer the regular high school setting; and they felt like coming to school.

c. *Students' Self-Perceptions.* The graduates and students currently enrolled agreed favorably on six items concerning their own perceptions of how they fit into the I.I.P. These high response items included: they were a good group of students; they received an extra chance to succeed; this was one of their most successful school experiences; more I.I.P.'s would be helpful; the I.I.P. students are a close group; and they had a feeling of belonging in the program.

These intangibles, extrapolated from the Student Opinion Questionnaire, are comments few would expect from a dropout or a disadvantaged high school student. These

student perceptions are testimony that the school curriculum can be relevant to the child's everyday experiences. The I.I.P. does provide a comfortable, threat-free environment, more conducive to learning than that of the regular school setting. No statistical analysis could measure the findings presented; yet the Student Opinion Questionnaire results are overwhelmingly supportive regarding the students' perceptions of the program.

7. *Personal Characteristics Related to Teacher Adequacy.* This variable attempts to measure any differences that may distinguish the attitudes of the four I.I.P. teachers from those of teachers in the regular high school setting. Twenty teachers were randomly selected, excluding administrators and counselors. Both groups were administered the Minnesota Teacher Attitude Inventory and the scores were computed.

I.I.P.		Random Sample		Significance Level	
\bar{X}	S.D.	\bar{X}	S.D.	t	N.S.
60.2	30.1	56.3	23.1	.29	

Table 7. Personal Characteristics Related to Teacher Adequacy

The mean for the four I.I.P. teachers was 60.2, with a standard deviation of 30.1. The 20 randomly selected teachers had a slightly lower mean score of 56.3 and a standard deviation of 23.1. The t-score was .29. The probability of the null hypothesis being correct was not significant and, consequently, the null hypothesis was accepted.

If the null hypothesis had been rejected, it would indicate that a special kind of teacher would be necessary to work effectively with the disadvantaged students in the I.I.P. The results of the MTAI indicate that there is no significant difference between the attitudes of the two samples of teachers. The mean difference between the two groups on the 150-item multiple choice response question test battery was only 3.95.

Many professors of education have indicated a need for specially trained teachers for the inner city classroom. This research indicates that this may not be the case insofar as attitudes are concerned, as measured by

the MTAI. It may be that other instruments may find different results.

8. *Graduate Follow-up Study.* A follow-up study was mailed to the 19 graduates of the I.I.P. One of the specific objectives of this research was to determine whether or not there are relationships between participation in the I.I.P. and a change in behavior by the participant. Was the threat-free environment of the I.I.P. just a temporary respite from the realities the student must eventually face after graduation, or were these graduates making a satisfactory adjustment in the world of work?

The results of the follow-up questionnaire were very encouraging. Eighteen of the 19 I.I.P. graduates responded and all were making a satisfactory adjustment in the community. The following results were obtained: attending college (9); military service (2); married (4); employed (12). The fact that these students had multiple activities accounts for the discrepancy between the number of respondents (18) and the total number of activities which was 27. The answer to this question is that they are making a satisfactory adjustment in society.

Conclusions

The assessment of the Pontiac I.I.P. has shown that the program has been effective in changing student behavior and in improving academic achievement. There are positive relationships between participation in the I.I.P. and a change in behavior by the participants. School attendance, student achievement, dropout potential, dropout rate, student opinions, and the graduate follow-up study all attest to the merits of the program in rejecting the null hypothesis. Student self-concept showed no significant gains. Although personal characteristics related to teacher adequacy showed no significant differences, this appears to be one of the most insightful items of this research.

The I.I.P. has incorporated certain meaningful educational practices in attempting to meet effectively the needs of these

disadvantaged students. Individualized instruction, a separate facility, a threat-free environment and a comfortable setting, a reduced pupil-teacher ratio of 15:1, small group discussions, and student participation in the decision-making process prove to be effective methods in providing a meaningful linkage between the students and their environment. The I.I.P. curriculum may be one of the major reasons for the success of the program, since no significant attitude differences were found between the staff in the experimental and the control groups. Many authors have emphasized the need for this type of relevant curriculum which was *continuous* with the realities of the disadvantaged student.

One of the biggest factors which this research did not evaluate was the effect of the leadership of the principal on student performance. There is some evidence to indicate that he was directly responsible for developing the "attitudinal tone" or threat-free environment of the I.I.P. This attitude was communicated to the teachers and the students. Many educators and boards of education personnel come to visit the I.I.P. Every effort is made to involve the students actively in these visitations. When the principal is asked to describe this innovative program to curriculum councils and other school agencies, he takes student panels to present their own opinions of the program. The students are the spokesmen for the "Yellow Brick School." Although a Hawthorne effect may be present, the results of this research and the opinions of the students support the conclusion that the I.I.P. is a success.

The basic methodology of this research was the matched sample technique. In identifying the matched sample from the regular high school setting, it was found that numerous other students would benefit from participation in the I.I.P. Many of these stu-

dents had problems similar to the experimental group. The Student Interest Inventory indicated that ten students in the control group had critical scores in excess of 40.

It is hoped that the findings of this investigation will serve as a stimulant in expanding the benefits of the Pontiac I.I.P. to include more centers. This research might also be useful to other school systems contemplating similar involvement. The cost of the program is approximately \$60,000 per year. The obligated federal funds for the Job Corps in fiscal 1969 were \$143,970,000, or approximately \$4,500 per student. The original I.I.P. was a "stop-gap" measure. More centers would be especially helpful at the junior high school level where potential dropouts can be identified prior to their leaving school.

Perspective

Thirty-three disadvantaged students have graduated from the I.I.P. The graduate follow-up study has shown that these students are making a satisfactory adjustment in society. What would have happened to these disadvantaged, multiple problem high school students if the I.I.P. had not materialized? It has been said that our concern for the disadvantaged can transform the quality of education for all learners. This will not happen, "... until the system itself is made responsive to individual needs, not until teachers are given a twentieth century curriculum to teach and more effective tools to teach with."³ It would already appear that those educators responsible for developing the Pontiac I.I.P. have made a genuine contribution in the challenge of modifying educational practice. □

³ "Where Failures Make the Grade." *The Education Digest* 34 (5): 24; January 1969. Condensed from *Carnegie Quarterly*.

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