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THE EVALUATION OF THE NEW YORK TEACHER CENTER

FINAL REPORT

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The New York Teacher Center is now five years old. It has grown both in size and quality since its inception. The accomplishments of this year amply illustrate the impact of the Center on the professional development of teachers in New York City. It has expanded its staff and its programs again this year.

The effects of the Teacher Center's programs on pupil learning, curriculum development, instructional effectiveness, and school im-improvement are now apparent at all of its sites. Its most mature sites reveal the power of the Center's concept and activities to change the professional climate of a school.

This has been a year of demonstrating how curriculum improvement can be achieved--in the use of computers, in the teaching of reading, in pilot projects in the teaching of writing. In 75 percent of its school sites some new program of curriculum development or instructional improvement has been undertaken.

What follows is a description of these activities and what has been accomplished. This year, more than any previous year, shows the power of the Center to produce permanent, school-wide improvement.

INTRODUCTION

The New York Teacher Center provides assistance to teachers in the following ways:

1. Direct assistance in the classroom:a Teacher Specialist works closely with the teacher on a new method, new curriculum materials, or on a particular instructional problem. Example:a teacher wants to learn how to use small groups and learning centers to meet the special needs of pupils. The Teacher Specialist demonstrates the procedures, helps the teacher develop the different instructional materials required, and works with the teacher in the classroom as the teacher learns to use the procedures.

2. Direct assistance through consultation with a teacher:a Teacher Specialist advises a teacher on a question, idea, or problem presented by the teacher. Example:a teacher wants to try a new reading method. The Teacher Specialist advises the teacher on the advantages and disadvantages of the method, what materials she or he will need, and how the procedures are to be carried out. The Specialist is available for further consultations and for the the kinds of services described in #1 above.

3. Direct assistance through working with a group of teachers in the same school. Example:a group of teachers wishes to use microcomputers in their classes. The Specialist teaches them how to operate the microcomputer, develops instructional methods with them, and at their request works with them in their classrooms. The Specialist conducts workshops for them, talks with them individually, and is available for other forms of assistance.

4. Indirect Assistance through working with teachers in in-school workshops and conferences. Example: a Teacher Specialist meets with a group of teachers during their lunch hour;the topic is Mastery Learning. The Specialist uses the workshop to teach the concepts, demonstrate the methods, and discuss the teaching problems of Mastery Learning. These workshops develop out of individual conferences with teachers or the Specialist offers the workshop to teachers. It usually leads to the forms of direct assistance described in #1 and 2.

5. Indirect assistance through teaching workshops. Example: A Teacher Specialist or other specially selected teacher conducts an after-school workshop on Teaching Writing;another teaches a workshop on Teaching the Emotionally Disturbed Child. A Teacher Specialist may work with teachers in their schools upon their requests, but the instruction is provided mainly during the workshop period and in discussions before and after it.

6. Indirect assistance through conferences. Example: Teacher Specialists organize and conduct a conference on "The Adolescent" or "Mastery Learning".

7. Indirect assistance through publications. Teacher Specialists or other teachers write reports on applications of research, curricula, teaching methods, special programs which are widely circulated to teachers.

The first three kinds of activities(# 1, 2, and 3) are called "Direct" because the assistance is given to a specific teacher for a specific purpose, is personal, may be extended through numerous meet-

ings, and always involves the Teacher Specialist in such forms of instructional activity as discussions with the teacher; observing in the teacher's classroom and using these observations to develop teaching strategies and to solve teaching problems;demonstrating;working with the teacher in carrying out a project or idea.

These activities are sometimes called "coaching", though the usual connotations of this term may be misleading when applied to the work of a Teacher Specialist with a teacher. The Teacher Specialist's work is more personal, adapted to the immediate concerns and professional needs of the teacher, does not follow a game-plan unless one is jointly developed with the teacher, and is more than skill teaching. The Specialist strives to make each occasion useful to the teacher's immediate needs and a step in her or his professional growth. The teacher acquires ideas, methods, skills, new perceptions and understanding, and confidence.

The "Indirect" forms of assistance are also aimed at changing practice but the teacher usually makes the application of what is presented on her or his own. The assistance may be directed to the teacher's expressed needs but is not individually tailored. This does not mean that indirect assistance is necessarily less effective than direct assistance. Teachers attending conferences and workshops are strongly motivated to profit from them. (During the first three years of the Teacher Center operation surveys showed that 90 percent of the teachers attending workshops did or would do so whether or not academic or inservice credit would be given. In any workshop 50 to 90 percent of the teachers will have reached the maximum number of credits for salary increments. Some continue to take courses and workshops over several sessions.)

These different arrangements meet different needs and preferences. They accomodate a wide variety of interests and experience. An experienced, highly competent teacher will not need the "hands-on" help of a Teacher Specialist to apply ideas gathered at a workshop or conference. Inexperienced teachers will seek this direct, personal experience, where the Teacher Specialist will become the principal support system for the beginner. One kind of teaching problem will need a certain type of assistance;another problem requires more or less than the first. Teachers use workshops and conferences for stimulation, for ideas, for exchanges with colleagues out which come offers to send materials, ideas for a new approach, and the practical know-how developed out of experience. Teachers will want to try out a new idea with a group of peers from the same school, so they will want in-house workshops.

The effects of these various services are improved teaching practices, improved pupil learning, and improved school climate. The purpose of the evaluation procedures used in this project was to estimate the magnitude and scope of these effects.

THE EVALUATION STRATEGY

Not every effect can be measured because the sheer number of them is quite large, and not all can be tracked down because the cost of doing so would be prohibitive. To follow and measure the outcomes of attending a conference, if a hundred and fifty attend, for example, could not be done. But each teacher's evaluation of a conference or a workshop can be collected. They are unlikely to use any of its ideas if they are dissatisfied with the inservice course, workshop or con-

ference. If asked about their intentions to use what is offered, they are not likely to say they will use these ideas if they do not see any practical value in them.

Direct assistance services are so concrete and specific that their outcomes can be seen. A teacher adopts a practice she has discussed with a Specialist, uses materials from the Teacher Center, develops and uses a new curriculum unit. These changes either occur or do not, and there is little difficulty in detecting them. Reports on them are reliable.

Changes in teaching practice may have immediate and obvious effects on pupil learning or these effects may appear over time. Much depends on the power of the practice itself to affect pupil learning. Pupil effects also depend on how well the teacher uses the new practice;is he or she consistent;is the practice well-integrated into the teacher's characteristic style or does adopting it require a major change in approach, attitude and method?

Pupil effects therefore are a product of the power of the new practice or application and the skill and consistency with it is used. Depending on the character and purpose of the new approach these effects will appear directly and immediately or will slowly emerge over time. Some will be limited;for example, new vocabulary will learned, or more difficult vocabulary;or they will be diverse--pupils will be more interested, more attentive, and will also show learning gains.

The diversity of services offered by the Center produces a corresponding diversity of effects--some powerful, some weak;some immediate, some emerging gradually over time. By what criteria then will

the Center be judged to be effective? What does it do that makes a difference? How much of a difference does it make?

Criteria of Effectiveness

The following criteria are the standards by which the Center's effectiveness might be judged:

1. How extensive is its reach? Is it servicing a small number of teachers in a few schools, or is it reaching a reasonable number for the size of its staff and its resources?

2. What is the quality of its services?

3. What changes in teachers have its services produced?

4. Have these changes in teachers produced demonstrable effects on pupil learning?

Sampling the Center's Effects

The Center provides services to thousands of teachers. One Teacher Specialist alone may interact with twenty-five teachers or more in one day, and will interact a hundred to two hundred times with teachers in an ordinary week. A sampling of the effects of these interactions must be done because each cannot be captured.

These effects are also variable in duration and significance. A teacher's conversation with a Specialist may produce an idea, but it may be abandoned. A practice may be tried but is found to be ineffec-

tive.

Each type of service, each particular service is a process-structure. Each structure of activities organizes the processes of observing, analyzing, selecting an approach, testing that approach, evaluating it, revising it or abandoning it or combining it into new forms. A Specialist listens to a teacher(observing);they discuss the teacher's ideas(analyzing);they plan an activity;the teacher tries it out(testing);the Specialist and the teacher discuss this trial(evalua ting);they decide to revise the practice or materials and try again.

Assessments of teachers' needs produce designs for workshops and conferences. These are offered and evaluated. Some are highly suc-cessful;some are not. The process is repeated over and over--observe and assess, design, test, evaluate, redesign. What works is retained and used;what does not, is revised or abandoned.

What is to be evaluated then? Only the "successes"? Should we tally the pluses and minuses;weight them;average them? If a new meth adopted by teachers has mixed effects;is this a failure? If another group of teachers organizes a brilliantly successful program, does th success outweigh less successful ventures or outright failures? Does success in a "difficult" automatically count for more?

Counting each specific success and failure and adding them up distorts the picture. A conception of value and larger purpose is needed to weight the diversity of particular effects across the broa spectrum of the Center's services. What is the Center's ultimate go its purpose, its raison d'etre which gives meaning to its activities orders its priorities, and weights their evaluations?

The Center is best thought of as a cultural intervention;its services are strategies to change patterns of behavior and values in the culture of teaching. Its success is measured by the degree to which this cultural change is occurring.

The goal of the Center's programs is to stimulate and promote the professional development of teachers, which in turn will have a significant effect on pupil learning. Professional development means becoming a more effective teacher. The Center's successes are those which raise the effectiveness of teachers.

Improvements in effectiveness are indicated by:(1)more positive attitudes towards teaching and children;(2)adoption of teaching practices which maximize pupil learning;(3)innovation in curriculum content, design and materials;and(4)greater sharing and working together with peers on the improvement of instruction. Teachers must try many things to accomplish these goals.

Each activity of the Center promotes changes connected to one or more of these goals. The Center offers a program on the applications of recent research on teaching where teachers may learn those skills known to be related to increased pupil learning as measured by gains on achievement measures. One Specialist is working with teachers on acquiring new methods for teaching mathematics. Another Specialist routinely pairs teachers who have something to learn from each other. Yet another has organized a working task force which is introducing a computer curriculum into the school.

These activities promote a culture of professional growth, of valuing learning to teach well, to innovate, to experiment with, to cre-

ate teaching strategies and materials. This culture fosters peer-to-peer exchanges of ideas, experience and materials. Teachers develop intense interest in helping other teachers. They develop workshops which they teach repeatedly. Some spend hours working in the Center, helping the Specialist, talking to other teachers, developing projects. Sharing is across schools and districts.

The Center has become a reference point;it is called on to help other projects, to take on new assignments. It is a symbol of teachers' commitment to their own continued improvement and to the support of their colleagues in continous professional growth.

These are the evidences of culture-growth, the effects of culture-building. The growth of this culture should determine the significances which we attach to the particular effects of a workshop or a Specialist's assistance.

The dynamic, fluid environment which the Center has and is creating produces failures as well as successes. But a failure may be a success in building a culture of self-initiated improvement. A box score of particularistic successes and failures cannot tell the whole story of what is happening as this culture grows.

In examining effects, therefore, we are concerned about what happens if something does not work--is a Specialist rejected, do teachers never return to the Center. Or, are they caught up in the processes of trying again;has their confidence grown? Is tough-minded evaluation of experience replacing folklore about what works? Do teachers try more difficult changes as they work with the Center? Will they risk creativity?

So we have looked intensively at high-risk activities, at extended committments to work together or to work with a Specialist. We have explored whether enthusiasm replaces fear;energy, lassitude;creativity, mechanical execution.

We have assembled a broad range of information--from teachers, from Specialists, from workshop and conference participants. We have searched for pupil effects;for substantial changes in teaching styles and methods;for growth in a spirit of cooperative exchange and professional support;for the growth of a culture of self-initiated improvement.

GROWTH OF A CULTURE OF SELF-INITIATED IMPROVEMENT

Six months after the Center's start-up, less than 10 percent of the teachers at the local school sites were engaged in sustained programs of self-improvement. Teachers were sampling what the Center might do for them;they shopped for materials mainly, much as they might at a book fair or at the booths at a convention. About a year later 25 percent of teachers at each local site were engaged in such programs.

One test of the growth of a culture of self-initiated improvement is an increase in this particular statistic. The logic of this interpretation is this:before teachers engage in such programs, they must be willing to work with the Specialists to decide on a plan of action, meet regularly with the Specialist, undertake new activities, try suggestions made to them, evaluate how they are doing. They must risk failure. They accept the challenge of changing.

In some sites fifty(50) percent of the teachers are working with the Specialist on a regular basis. New Specialists within two months after beginning were providing direct, individual assistance to 25 percent of the teachers. In one school 70 percent of the work with teachers was direct individual assistance.

Another test of the growth of the culture of self-initiated professional improvement can be found in the development of group work. The Center began a program of workshops shortly after opening, but since then the Specialists have developed a program of in-house workshops and similar group activities. These are tailored to the interests of small groups of teachers, and much of the work previously done on a one-to-one basis is now done through these groups.

The growth of this program can be seen in these two figures: during the first year of the Center's operation less than 5 percent of the Specialists' contact-hours with teachers were in group activities directed to the improvement of instruction. Today 50 percent of the Specialists' work is in these activities.

Why do we say that these activities indicate the growth of a culture of professional self-improvement? First, the groups are formed within the school, where a teacher, unlike when he or she is in a workshop, is not anonymous. Each teacher is with peers, exposing her or his lack of knowledge or skill. It takes a certain amount of courage to expose oneself to one's peers in this intimate setting.

Second, the work invariably leads to sharing, developing materials together, planning together, trying out methods or activities or units in one's classroom and then evaluating and presenting the

results. Teachers spend time together analyzing their experiences, and deciding on revisions and extending the project.

To appreciate fully the change that has occurred one need only remember how teachers lived in schools before the establishment of the Teacher Center sites. They worked alone. They joined in few if any projects. They met at lunch and talked much as teachers do everywhere. Professional development was a private, personal matter.

Today they are meeting in small groups during the lunch hour. They meet individually with the Specialist during these and other times. They visit each other's classrooms. They share their teaching experiences and materials and ideas about <u>their</u> project.

Anyone familiar with schools knows the fear and reluctance which must be overcome if computers are to be used in classrooms. A change in these attitudes will make little difference if attempted teacher by teacher. A change in the attitudes of a group of teachers will change the values of the school towards computers--a cultural change with lasting effects.

In one school a full-scale Computer Program has been developed by a group of teachers. They have learned how to use the computer. They have integrated its use into their classrooms.

How did this happen? The Specialist presented a lunch-hour workshop to introduce interested teachers to the computer. Training was offered, so the Specialist helped the teachers form a group to learn together and to work together to develop classroom applications. They have created a climate of computer-use in their school.

But something else is occurring in this school. Teachers are working together. They are learning from each other. They meet without the formalities of required meetings. Out of these meetings a culture of self and school improvement is growing. Teachers are acquiring new skills, developing new curricula, building a teacher support system which rewards professional growth and committment to the improvement of the school's curriculum and instruction. A professional culture is developing and replacing the culture of the job-holder.*

The evidence? More teachers join the program on computer use. More teachers participate in workshops. More enroll in the after-school workshops. The number of teachers working with the Specialist doubles in a year. Difficult problems are taken on--a Resource Room teacher starts working the Specialist;another teacher wants help with mainstreamed pupils in her class. A writing project is developed.

Pupil Effects

Are there any? Approximately 200 pupils are learning to use computers. Children appear during lunchtime or when released by their teachers in the Center's Resource Room to work on the computers there. A child can be observed writing his own program. He stores his program on a tape he has brought from home. He will be back tomorrow.

Software for classroom use is being purchased. These cover the range from drill and practice programs to educational games for reinforcement to special programs for enrichment.

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* Teachers in this school were and are professionals. But a school can have a job-holder culture when its teachers work in isolation in their classrooms. Professional improvement is a private matter. School improvement is not generated from the cooperative work of teachers building new programs and learning new skills together.

A Case History

The pervasive and profound changes in a school brought about by a culture-shift are best illustrated by the changes which occurred in one of the Center's first sites. This site opened five years ago, and the same Specialist has operated the Center since then.

Most teachers then were either unaware of the Center's establishment or knew only what they had read in the UFT's paper. This school had been invited to house a Center site. The principal had accepted and provided a room which was to become a Teacher's Resource Room--the Center's home in the school. Orientation meetings were held for the teachers.

The teachers' welcome was less than wholeheartedly enthusiastic. They were somewhat suspicious of the Center, wondering if it would be truly independent of the local administration. They also had no idea of how to use it, or what services it would offer, or if the Specialist could really help them.

The teachers in this school got together for a few social occasions and faculty meetings. Like teachers throughout the country they worked independently, largely in isolation from each other. Instructional improvement was initiated by the administration.

The Specialist began a round of activities which became the symbols and rituals of the new culture to be built. The first and most important value symbolized in these activities was that the Center was there to help teachers. The Specialist placed duplicable instructional materials in mailboxes. The Specialist talked to teachers in the

corridors and in the lunchrooms, invited them into the Resource Room to see the materials there,and offered to help them. The coffee pot was on, the Specialist was available. Gradually teachers tried using the Center, found help and passed the word. The credibility of the Specialist and the trust of the teachers grew. But nothing more than a series of individual services would have been offered if the Specialist had not introduced other activities.

The Specialist arranged visits of one teacher to another, both in and out of the school;visitors were invited to describe their programs or teaching strategies. Groups of teachers were taken by the Specialist to observe other programs. These interactions started the sharing process.

Teachers were learning to work cooperatively in groups. They discussed, evaluated, talked with each other. They saw more of each other in a few months than they had in years, and the talk was professional. The Specialist followed up with individual help. The culture of help, of sharing and of mutual support was being built. It supported experimenting and innovating, and adopting new ideas.

The Specialist introduced one program after another, beginning with a two-day workshop on a reading program immediately before the opening of school. About a third of the staff attended, and about half of these tried the program. The Specialist brought this working group together to share experiences, to plan together, and to evaluate their work. These teachers became a group of innovative experimenters. They became confident, relied on each other, open about their successes and failures, and willing to learn. They began to grow professionally. They enrolled in workshops. They tried other ideas.

Other groups developed around other projects--one, integrating the arts into the curriculum;another, around new methods of teaching calculating in mathematics. In the first year two projects had been started;by this year five major projects were underway, each a focus of teacher activity and development.

These projects were extended in time, required committment, willingness to learn, to try new ideas, methods, skills. They required effort.

They were focii in a context of workshops, meetings with the Specialist, small conferences, visits, new materials, new technologies. The Resource Room became a hub of activity. Unlike the teachers' lounge in so many schools, teachers did not congregate here to gripe, or to blame. The atmosphere was positive and active. The Specialist was there to greet, to inquire about the special project a teacher had undertaken, to show the latest book or teaching materials to have arrived at the Center, to tell about a conference, a workshop, to get a conversation going, to start a group discussion.

The Specialist in this school averages over 100 teacher contacts a week(including workshop teaching and managing). 75 percent of her work is individual and developmental in character--working with a teacher on something the teacher is learning to do. Workshops are combinations of the traditional workshop format, discussions in the Center during prep periods, and working with a teacher in her or his classroom. No less than five individual conferences occur every day.

Are there teachers less involved? Every teacher in this school has participated in some Center activity or used the Center. Not all

are involved in every project. But each has been or is involved in a project or a personal acquisition of a skill, or are changing a portion of the curriculum. Participation in a Center activity depends on need, interest, stage of professional development, available time, the kinds of children one is teaching, other committments. The remarkable fact about this school is how many are involved at any one time, how many have tried something new, how many are working together.

What is and has happened in this school is far more significant than these numbers indicate. The professional culture of the school has changed. What is the evidence for this change?

Cultures are described in part by their rituals, their ceremonies, their social forms. Five years ago this school's rituals were the routine teaching of class interspersed with prep periods alone in one's classroom, or in the lounge, and lunch breaks with two or three associates. The life was the life of isolation--intellectual, emotional, social.

Today a teacher may go to the Center on arriving at the school, talk to the Specialist, pick up some materials, have a cup of coffee with a teacher with whom she is working on a curriculum project. Prep periods are spent in the Center, working with the Specialist or another teacher;or maybe a small workshop session is being held in which the teacher participates. Lunch is again meeting-time;or a quiet half-hour going through books and teaching materials in the Center;or another workshop. After school on some days there are other workshops available to the teacher. The day has changed. The Specialist is available for talk, for a visit to one's classroom. Teachers know each other, and share experiences. They group together around work.

Values and beliefs appear in new social forms. Teachers are now organizing around professional-improvement activities. Teachers gathered in the usual ways in the Center sites five years ago--to gossip, to read the Times. to grade papers, to gripe about the Principal's latest directive. As the culture of professional improvement has taken over, these social forms and conventions have almost disappeared. They gather to work together. Much of the conversation is about teaching--how to improve it, what they have learned from a workshop, how a new unit or method or set of materials is working out in their classrooms. The demonology images of the administration have not entirely disappeared, but their power has considerably diminished as teachers have learned to make a difference in their teaching lives by developing their powers, gaining a greater sense of efficacy, and enhancing their skills.

A sense of unity prevails where before there was psychological isolation. Enthusiasm has replaced dispirited conformity and robotic teaching. Energy and committment have replaced escapism and grudging compliance.

The Effects on Instruction

In the last year there were five to ten major projects underway at various times. Several different approaches to reading have been introduced. Computer instruction is now a part of the curriculum. Every teacher in the school has adopted three or four new practices; twenty percent have completely changed their teaching style from the teacher-at-the-front of the class talking to the whole class to highly individualized instructional patterns. Another thirty percent regularly use instructional groups;the remainder are acquiring new methods

which modify in part their instructional approaches. Such changes are invariably accompanied by changes in attitudes. Teachers are more positive about instructional improvement, about new ideas;their expectations for pupil performance have risen.

The major effect on instruction appears in improvements in _allotted_ and _engaged_ pupil time. Teachers who have learned new practices for teaching computational skills in mathematics allott more time to mathematics. New materials increase engaged time--pupils find the new approach interesting. (If this claim seems fanciful, it should be remembered that new materials and methods are carefully screened by the Teacher Specialist, and in time have been tried, modified and reworked by teachers in the school. A practice is known to work before it is shown to a teacher.) A new practice adopted and consistently used by a teacher will increase engaged time by 50 percent.

A teacher helped by the Specialist to organize instructional materials reduced time lost in searching for materials by 100 percent. A teacher shown how to use learning centers produced a fifty percent increase in engaged time and enriched the curriculum at the same time.

When a Center is shaping the professional culture of the school as is happening in this school, engaged time increases substantially. A conservative estimate is that it increases about 25 percent. Ordinarily an increase of this amount will increase test scores by one to two grade levels.

Grade-level scores have increased regularly every year in this school since the introduction of the Center. The school has the largest increase in pupil performance in the District.

How Effective Is the Center In This School?

On page 6 we listed four criteria for judging the effectiveness of the Center's operations. Are these criteria being met in this school?

1. How extensive is the reach of the Center? Is it reaching most of the teachers in the school?

   The Center has provided services to every teacher in the school. Over 75 percent have received substantial services on a repeated basis.

2. What is the quality of its services?

   These have ranged from introducing teachers to new but relatively simple teaching materials and practices to new programs and methods, new curricula(e.g., for the talented and gifted;computer instruction;the arts) and complicated teaching strategies(e.g., Mastery Learning).

3. What changes in teachers have these services produced?

   For some the changes have been small. But for 75 per cent of the staff they have been substantial. The remainder have made extensive, dramatic changes in teaching styles.

   There has been a widespread change in attitude towards instructional improvement, and about their own efficacy among the teachers in this school. Attitudes are posi-

tive--towards pupils, curriculum improvement, professional growth and the quality of instruction.

Expectations for pupil performance have risen. More work of higher quality is assigned and teachers now set higher standards. The evidence for these changes is observable in the displays of pupil work, the variety of materials available to pupils in the classroom, and the projects in progress. Further evidence is the amount and quality of teaching resources which teachers are using in the Center's Resource Room, and their responsiveness to workshops on curriculum topics.

Teaching styles have changed. Before the arrival of the Specialist most of the teachers adhered to large-group instruction. Pupil on-task behavior was correspondingly lower. Now teachers are using more small-group instruction;learning centers are set up in many rooms. Teachers circulate more.

4. Have there been demonstrable changes in pupil performance?

The most dramatic evidence of increased pupil learning is the steady rise in reading scores. These scores have risen for the past four years and this school has made the largest gains in measured reading performance in its District. Correspondingly, the quality of pupil in-class work, on-task behavior, and involvement in projects and assignments has risen.

The work of the Specialist with teachers would not have been as

effective if the Teacher Specialist had not helped create a professional culture in this school. What are the characteristics of this culture?

First, a mutual support system has been developed. Second, teachers in this school use the Specialist to develop their professional competence. Third, the Teacher Center Resource Room is the locus of professional interactions among the teachers, the source of materials for developing new programs and practices, and the focal point of discussions with the Specialist and other teachers. Fourth, a value system has been created in which the primary value is the improvement of the school's programs and personal, professional development.

The Specialist and the Center's Resource Room bring together all the elements necessary to create this culture. The Specialist's active reaching out to help each teacher, to bring teachers together, to supply materials, workshops, conferences, and direct, hands-on assistance in the classroom first stimulated each teacher's development, then fostered sharing and working together.

As teachers began to feel the benefits of this help and of working together, the networking spread. As it did, the climate of teaching began to change. New values developed. A new school culture emerged and grew. As it developed, professional competence increased. The results soon became apparent in the quality of the pupils' work and in test scores and other measures of learning.

As the benefits of these activities became apparent in greater on-task behavior in classrooms, in the addition of stimulating and chal-

lenging units to the curriculum, the adoption of innovative teaching methods, the development of programs created a new context for instruction. Direct instruction increased;pupil on-task behavior increased;standardized test scores progressively improved with each succeeding year.

This school illustrates best the dynamic effects of the Teacher Center's activities. The elements of these activities are simple: a dynamic, imaginative Specialist who understands how to reach teachers and the Resource Room with the privacy it provides for consultation and the materials available for developmental activities.

To evaluate the changes produced in this school, one should remember that most teachers had reached a stalemate in their professional development. They had long since tried everything they had been taught in teacher-training courses and in-service workshops. They had put it all together in their distinctive styles. They had made their accommodations to the "system". They had seen program after program imposed on the school, only to last for awhile and then disappear.

Contrasting this context with that which exists now reveals the great change that has occurred in the professional culture of the school. This change has had its impact on the instructional program and on pupil learning.

The work in this school demonstrates how the Center makes a difference. It demonstrates that the key to increasing school effectiveness lies in this approach.

TAKING ON THE READING PROBLEM

That there is a reading problem in New York City schools is obvious though the trend of declining scores seems to have been stemmed. But the problem has not gone away. Nowhere is it more apparent than in schools with large numbers of Black and Hispanic students.

Language and dialect differences, the environs of poverty, and a too long history of educational debilitation contribute to the difficulties in improving the quality of reading instruction in these schools. But the Teacher Center took on this challenge in the past year in three schools in the South Bronx.

These schools had teachers and principals who wanted to make a difference. The Center with the assistance of the District Superintendent placed three Specialists in three schools. Resource rooms were opened, the Specialists introduced to the teachers and the work of the Center began, as it always does, by the Specialist reaching out to help teachers.

These Specialists were studying a new approach to the teaching of reading. This approach was based on cognitive psychology and addressed directly the improvement of reading comprehension and language development. The methods of instruction were built around cognitive structures which the pupils would internalize;that is, they would learn these structures as ways of thinking. They gave a pupil analytic tools, teaching the child the nature of the language as it appears in graphemic symbols. They taught the reading process, not merely its mechanics.

Training of the Teacher Specialists

The Specialists in these schools worked through the program in a series of one or two-day workshops. These sessions were conducted by Dr. Robert Calfee, Stanford University, the developer of this approach to reading and a nationally recognized expert in research on the reading processes and instructional methods in reading.

The Specialists worked through the concepts and theory of the program, developed the materials and their applications to the unique settings and problems of the schools in which they worked. Dr. Calfee provided live demonstrations of the procedures;the Specialists critiqued them and in turn practised these methods. The result was a carefully tailored program, with a base of the original program and its theory, on which were built adaptations likely to work with New York City teachers working in the South Bronx.

Presenting the Program to Teachers

By the time that the Specialists completed their training they had been in the schools for about six weeks. They had set up their Resource Rooms, begun working with teachers, and had done some preliminary exploration of teachers' interests in using this program. The Specialists designed three workshops to be held in successive months. Between workshops, the Specialists were to work with the teachers in small groups and individually.

It had been decided to confine the program to the three schools in which the Specialists were working and to the third and fourth grades.

These teachers had the program described to them in meetings held in their schools. 90% of the group volunteered to attend the workshops and to try out the ideas.

The workshops were held on Saturdays at the Bronx Campus of Fordham University. They began at 9:00 a.m. and ended at 3:00 p.m. The group had lunch together. The workshop began with a presentation by Dr. Calfee, after which the teachers worked in groups with the Specialist from their school. These sessions were question and answer, discussion and planning. The afternoon sessions followed the same format.

During the workshops the Specialists worked closely with their teachers, resolving problems, anticipating difficulties, demonstrating a point of technique or method, going over materials, and building a working relationship with the teachers. The discussions were lively and in the beginning somewhat skeptical. This reading program emphasizes the development of thinking skills, so the teachers had to be convinced that it would work with their students. As might be expected, they wanted to see the program in action.

Demonstration sessions were arranged in each of the schools, following each of the workshops. Dr. Calfee presented several different methods--vocabulary development and plot analysis, for example. The demonstration was made in a regular class, the teachers observing, and a discussion followed. During the week the Specialists also provided demonstrations, and helped teachers individually to try out the program's components.

After each sequence of this kind each teacher tried out teaching

a lesson using one of the methods which had been demonstrated for them during the last workshop and in classroom demonstrations. The Specialist was usually present during this try-out, and the Specialist and the teacher discussed the experience, the problems which arose, and how the teacher felt. They made plans for more experimentation. This sequence was repeated after each workshop.

This training of the teachers went on from the middle of January through March. Some idea of the scope of Specialist activity can be obtained from their records. 60 to 90 percent of their individual interactions with teachers during the month of March pertained to the teaching of reading. On the average a Specialist interacted each week 33 times in individual sessions or with small groups working on the teaching of reading. Each teacher trying out this program spent from 1 to 5 sessions with the Specialist.

The installation of the program proceeded fairly swiftly considering that the teachers had to depart substantially from their traditional approach. In this program a working session on vocabulary, for example, is segregated from the reading of text;the reading of text is analysis of the text, and vocabulary learning is not allowed to intrude. Sufficient time is allotted to each task, but work on the task is intensive. Learning is more rapid and more likely to be retained.

This methodology is consistent with a basic principle of cognitive psychology derived from information-processing studies. Trying to perform two cognitive tasks simultaneously or in short, alternating sequences interferes with cognitive processing, and hence with comprehension and retention. Learning is enhanced when the tasks are segre-

gated. The learner focusses on specific, related tasks. The teacher's mind and activity is also concentrated on these tasks.

This way of organizing instruction within a subject like reading is not customary(though the most effective teachers do it or approximate it). Teachers have to think differently about the subject matter and organize their teaching behavior into structured and focussed sequences;they must give up trying to teach phonics, comprehension and vocabulary within each time-unit. Rather they must organize each of these components into its own time-unit and adhere strictly to instruction on that component. This organization enhances the learning of cognitive structures to use in phonemic analysic, in comprehending the structure of text, and in building an organized and structured vocabulary.

Some of the difficulties in adopting this program arose from the need to learn this new style. The style is not difficult to use;in fact, it is easier than the traditional style. But it requires adopting new habits. Most of the early training was directed to helping teachers to understand this style. As they saw how students responded, they were reassured.

Instructional Effects

The first and most important instructional effect was the adoption in these schools at the third and fourth grades of a reading program which emphasized <u>cognitive</u> <u>development</u> as the main goal of reading instruction. The importance of this step cannot be overemphasized because from it followed changes in teaching style and methods, new and more dif-

ficult curriculum materials, and a change in teachers' expectations for pupil performance.

Most approaches to reading emphasize the acquisition of skills. They assume that if these skills are developed serially, pupils will put them together in smooth processes employed by the mature reader. The program developed by Calfee teaches linguistic and cognitive structures which the pupil employs in decoding words and thoughts. These structures have great transfer-value. They are powerful tools in thinking, and are used in all reading, whatever the subject matter. They are also used in composition(writing and speaking), and are particularly useful in analyzing such conceptual structures as "word problems" in mathematics.

Taking this approach to teaching reading prompts a change in attitude. The teacher accepts the importance of these thinking tools and makes their acquisition a major educational objective. This change leads to introducing more difficult instructional tasks and curriculum materials. In short, THE CURRICULUM IS UPGRADED.

The first few demonstrations were "eye-openers". Teachers noted that children who had not spoken(literally) in class participated actively in the vocabulary structuring activity. The teachers expressed surprise at the level of vocabulary development of the pupils when their knowledge was revealed in the context of structures of ideas. They could categorize, and categorizing created associations which recalled a wide variety of words. The vocabulary activity also showed the ability of the pupils to think coherently around an idea.

Teachers had not been obtuse to their pupils' development;but the teaching methods traditionally used do not draw out these aspects of pupils' achievements. Going through a vocabulary list word by word reveals only whether the pupil can recall the meaning of that word in isolation. It also reveals nothing about how the pupil can use the word or to what he or she associates it. The new methods opened up the pupils' heads, as it were, and what before had not be seen was apparent.

The immediate effect was teachers' expectations rose dramatically. They saw possibilities. When they themselves conducted these lessons, they learned what they could do to utilize their pupils' available cognitive structures, and what could be done to develop them.

Three things were occurring simulataneously and interacting with each other. First, new methods were tried. The first lesson or two was simple, the teacher using words or text with which she was comfortable. Then as the teacher sensed the power of the method, and as her sense of efficacy grew, she tried more difficult ideas, more complicated structures of words, leading to the second change, the upgrading of the curriculum content.

As these changes occurred, the teacher upgraded his or her expectations for pupils. These new expectations prompted the teacher to try more difficult structures, and as her or his confidence grew, the teacher became more effective. As the teacher felt more efficacious, she was able to try more difficult tasks.

Recall the starting point. Reading scores had been low. Teachers

in such situations go "back to basics". They drill on the fundamentals. The curriculum slows down. Expectations for performance begin to move downwards.

This trend and these processes were reversed in these schools. The most frequently heard statements were about what the pupils could do. Not every lesson was a smashing success. The teachers had to experiment with stories, for example, until they learned how a story could be used for cognitive analysis. Vocabulary structures were uniformly successful, with only an occasional slow lesson. Teachers were learning the power of these tools to show what their pupils could do, literally, "where their heads were". So improvement was quick, and expectations continued to rise.

Pupil Effects

The effects which teachers began to see is beautifully illustrated by the teacher who appeared at a working session on the program armed with writing products. She was enthusiastic, passing the writing around and pointing out its maturity and obvious high-quality construction. The proof for her was in that writing.

Other teachers reported similar successes. Participation in class activities rose significantly, which meant a significant increase in on-task behavior. Work-orientation is highly regarded by teachers and is well-rewarded. It contributed to the rising expectations and rewarded teachers for the efforts they were making.

The program got fully underway much too late in the year to produce

large gains on standardized test scores. The formal training was completed near the end of March, and time was also lost to vacation break and end-of-year testing.

But the cycle tests given by the District revealed upward trends in vocabulary scores. The power of the approach is apparent in the relatively immediate effects on cycle scores. These tests in the short run, however, inadequately sample the effects of the units introduced by the teacher. The trends therefore were less reliable than they would have been if the tests were more relevant to what was being taught.

The District program is oriented to teaching discrete skills and the cycle tests measure performance, skill by skill. A cognitive approach is not so closely tied to specific words;the child is learning how to organize structures of words and ideas. A test measuring knowledge of unrelated words does not tap the richness of vocabulary development that is occurring. We saw children generate fifty to a hundred words around a concept, then categorize its subdivisions, adding words, comparing and contrasting words, and formulating sentences combining these words. We conservatively estimate that in any one vocabulary lesson employing these procedures the children's vocabulary doubled, and probably trebled.

In the new program(the District stipulated this experimental program not be evaluated by the cycle or standardized tests) the effects are most likely to show up when larger performances are measured. A full-year's run under this approach should show measureable and significant effects on standardized tests.

Three variables are coming into play in this program:(1) teachers' expectations for pupil performance are increasing;(2) pupil participation in reading activities have increased two or three hundredfold;(3) the level of cognitive functioning during the reading activity has been raised significantly. These three variables are powerful influences on learning. Increases in them should raise standardized test scores significantly when the variables have been operating consistently through several months.

It is important to remember that this activity is evoking participation and interest from pupils who were little more than a physical presence in classes. We observed a pupil contribute to a vocabulary lesson who had barely spoken in class to that time. He was a "Double-Gates" pupil;the teacher was greatly surprised at the wealth of vocabulary he had available on the topic. Again we hasten to point out that the teacher was not deficient in assessing her pupils' knowledge. The traditional approach to vocabulary development is serial learning, which is heavily dependent on retaining lists in memory. This type of retention disappears quickly;whereas structured learning is retained longer, and is also used in developing new associative networks. When the teacher tapped his associative network by structuring the lesson around concepts, the richness of the network was revealed, and the pupil had something to contribute. She rewarded his contributions, and he in turn participated more in the lesson.

The same kind of effects appear during the reading of text. A class of Gates pupils might be regarded as so deficient in reading skills that they could not think much about what they had read. Or, more likely, the lesson depends on "knowing the words" so heavily that the pupils' under-

standing of the text is never revealed. In the Calfee procedures the text is addressed directly. The pupils read the text, and the teacher helps with words they do not know;the teacher reads the text to them. They then analyze plot, character, sequence. The teacher may begin by asking what the major events in the story are. She or he elicits their sequence. This being done quickly, the teacher then moves to character description and analysis. The children next summarize the story.

We watched this sequence of events occur in about twenty minutes. Contrast this time and its results to what occurs when the traditional approach is used--"What are the words we know?", "What are the new words?", after which vocabulary explanations may take ten or fifteen minutes. By this time twenty-five minutes may have elapsed. The children plod through the story line by line, stopping to go over words. A story is rarely completed in a day. The tediousness of the reading lesson is obvious. The rate of covering the reading materials is considerably reduced. If the class is "slow", less than half the material may be covered.

As the teachers tried out these approaches to teaching reading comprehension, the number of stories covered increased, and the teachers saw that the difficulty of the material could be increased. Increasing the difficulty of the material and covering more material will have a substantial effect on reading scores when these procedures are followed for most of the year.

We see three effects on pupil learning:(1)they are learning more difficult material;(2)they are covering more material;(3)their cognitive development is being accelerated.

Effects on the Professional Culture of the School

We see beginning here, more rapidly and with a specific focus, what we have described as having occurred in the mature Teacher Center sites. A professional culture is beginning to grow in the school.

First, teachers involved in this program are focusing their efforts on the effectiveness of the program in reading in a new way. They recognize that this approach stretches their pupils and enriches the curriculum. They have decided to make the changes in teaching style and method required--without compulsion.

Second, professional attitudes are growing. The teachers have seen the possibilities for their own development, and have begun to work with the Specialists in a variety of ways.

Third, teachers are working together in groups. They exchange ideas. They have observed each other. They have constructed teaching materials together.

These are dynamic changes which will grow. A new culture, in schools generally regarded as "tough" schools in which to teach, is developing rapidly. Pride in their teaching effectiveness is developing as the teachers see that they have taken on a complex teaching program and have made it work. Teacher expectations for themselves and their pupils is expanding. Standards are being raised.

This all began when the Teacher Center set up sites in these schools. These changes occurred within five months. The results speak for themselve

THE QUALITY OF THE CENTER'S SERVICES

In the preceding pages we have been describing the major effects of the Center's work in concrete examples. These illustrate amply and in an understandable way how the Center works and what that work produces. But are these only the "best cases"?

About half of the weekly work of a Specialist is devoted to individual work with teachers of the kind we have been describing. 40 percent is given over to group work;10 percent to administrative work--organizing and managing workshops, arranging for teachers to visit other teachers, talking to the school's administration and the chapter chairperson, ordering materials for the Resource Room, planning and evaluating at the Teacher Center central locus on Park Avenue.

The most experienced Specialists spend more time on individual work with teachers. They have built the spirit of confidence in their help and have created support systems in the school. They may have almost three-fourths of a weekly schedule spent on special projects with individual teachers.

We should explicate the implications of this activity. This work is done with a teacher who collaborates with the Specialist over a period of one or more months, during which the teacher will engage in workshop attend a conference, go to a meeting on her or his project, study, develop try-out, and evaluate, all the time consulting on a regular(two or three times a week with the Specialist) basis with the Specialist. The first time the teacher proceeds slowly and very carefully, relying heavily on the Specialist's support. A success produces self-confidence. The teache

tries another project, this time assuming more independence. In time the teacher becomes a true collaborator, available to help other teachers, to conduct workshops, to lead projects.

About two-thirds of the teachers in each school where the Center site has matured over several years participate in this type of professional development activity. Some of it is highly original, some of it ordinary but necessary, which it is depends on the teacher's stage of development. Most begin at the ordinary level--they, after all, have had limited training and their development has been affected, sometimes negatively, by the school cultures in which they have been. Most progress to the higher levels of professional activity where their development occurs rapidly, and they take on difficult projects requiring originality and advanced teaching skill.

About half of the existing sites have matured into centers of professional development, in which, all teachers in the school are working with the Center site;and half or more of which are engaged in intensive programs of professional development. In all of them a professional culture is in full bloom. The other half are mainly new sites, or sites in existence only a few years. In these the early signs of the developing culture of professionalism are apparent.

Because of the Center's experience, development occurs in less than half the time it took at the Center's beginning. We cited the case of the schools in the South Bronx. Within five months this professional culture had grown in two grade levels at three schools. Thus with each year of experience, the experienced Specialists take on more difficult tasks;new Specialists develop more quickly.

What does all of this mean? It means that in the past year over four hundred teachers have been actively engaged in systemic profes-ional development which has immediate effects on instruction. These teachers, when working with a Specialist, learn to teach effectively. They learn more advanced teaching methods;they introduce new content into the curriculum;they learn how to interest and engage their pupils; they cover more content.

Pupil Effects

The immediate pupil effects are increased on-task pupil behavior, greater moment-by-moment mental engagement, and greater coverage of content. In studies of teaching effectiveness, these variables are positively correlated with pupil gains on standardized tests.

The teacher's effectiveness accounts for about 10 to 25 percent of the variance in pupils' scores on standardized measures of learn-ing. Teachers who lack the skills of direct instruction have pupils that make no gains, or in some cases, negative gains.

These effects produced by teachers working with Teacher Specialists are probably improving pupil learning by 10 percent on the average. These changes do not always appear immediately in the test scores of a teacher's class because the analysis performed by the Evaluation Unit of the Board of Education show only absolute levels, not the gains. Further, gains in individual classes are added into the means for the school.

But as we have seen, when the Center has been operating in a school

for several years the test scores begin to rise. There are strong reasons to believe that these effects are occurring in other schools.

Teachers' reports and observations confirm the greater engagement of pupils, and significant improvement of individual pupils. Overall quality and quantity of pupil work has clearly risen.

But as we have noted repeatedly throughout this report, the major effect of the Center's work is to create a climate of professional committment, energetic attention to program improvement, rising professional competence, and a support system for professional growth. It is this change which produces the permanent, in some cases radical, and long-term changes in the school's effectiveness.

Workshops and Conferences

The Center conducts a large in-service program which has been described in progress and previous reports. Each workshop and conference is evaluated. The results of these evaluations are overwhelmingly positive. Teachers value what they have learned, see it as a contribution to their professional growth, and like its format. They also say they plan to use what they have learned.

The first set of workshops on computer programming were less positively received, in large part because the teachers did not have equipment in their schools to use what they were learning. They expressed their frustrations about the course in the evaluation. The Center cannot supply equipment to schools, obviously.

This program is clearly and obviously successful. It stimulates interest in the Center's other work, and frequently creates relations to individual Specialists who will work with teachers seeking assistance even though they are not located in the Specialist's school site.

About 25 percent of the participants are repeaters. It is also used by the Specialists to help teachers with particular projects on which they are working or to fill in an area of professional knowledge a teacher may be lacking.

Problems

The only problem of concern is the slow spread of the high school individual professional development programs. Despite outreach activities, high school teachers appear to be reluctant to consult on problems in the same way and with the same frequency as elementary teachers.

But in the context of special programs or activities, such as computer programming or Mastery Learning, teachers will work with Specialists. Since this seems to be the key, the High School Specialists use conferences and workshops extensively. These are well-attended, and highly evaluated. A small percentage of teachers begin working with the Specialists as a result of these activities.

Patience is required. The high-school teacher hangs back. The high-school departmentalization interferes with building school-wide support systems. The high-school teacher is subject-focussed. But progress is being made. The Mastery Learning program is a successful model.