DOCUMENT RESUME

ED 213 145 EA 014 450

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TITLE The Impact of IMPACT II.
INSTITUTION Columbia Univ., New York, N.Y. Teachers College.
SPONS AGENCY EXXON Education Foundation, New York, N.Y.
PUB DATE 15 Oct 81
NOTE 61p.

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Elementary Secondary Education; Grants; *Instructional Improvement; *Instructional Innovation; Networks; Program Proposals; Small Group Instruction; Teacher Attitudes; *Teacher Improvement; Teacher Participation
IDENTIFIERS District Incentive Grants Program NY; New York City Board of Education

ABSTRACT

IMPACT II is a teacher-to-teacher networking program designed to improve teaching in New York City schools. Teachers who have been working on new ideas that need more refinement are eligible for $300 grants offered to program developers. Teachers who would like to adopt ideas previously developed by the program may receive $200 as replicator grantees. Since 1979, about 500 teachers have received grants. To facilitate exchanges among teachers, IMPACT II supports a wide range of networking activities, including newsletters, product catalogues, receptions, and teacher assistance. The autonomy of teachers is emphasized. Program outcomes were evaluated with questionnaires from 136 grantees plus a control group of 44 grant applicants. Findings indicate, among other things, that 85 percent more of IMPACT II participants improved their teaching than did the control group. Overall findings suggest that teacher participation and control increases willingness to try new ideas and that teacher networking provides the vehicle for peer learning and support. In the fall of 1980, Community School District One began a District Incentive Grants Program roughly modeled on IMPACT II. Although successful in many ways, variance from the original model caused it to have fewer long-term effects than IMPACT II. (Author/JM)

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The Impact of IMPACT II

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October 15, 1981

EA 014 450

Abstract

IMPACT is a teacher-to-teacher networking program supported by the Exxon Education Foundation to improve teaching in New York City public schools. Teachers who have been working on new ideas that need more refinement are eligible for $300 "developer" grants. Teachers who would like to adopt previously developed ideas may receive $200 as "replicator" grantees. Since 1979, about 500 teachers have received grants in alternating waves of developers and replicators. The 252 replicators have adopted about 100 different ideas.

To facilitate exchanges among teachers, IMPACT supports a wide range of networking activities including newsletters, product catalogues, receptions, ceremonies, and capacity-building assistance to teachers. Throughout the process, the autonomy and responsibility of the teachers themselves is emphasized. The staff has no predetermined orthodox answer to the problem of teaching, nor are the grantees monitored. Exxon's investment has been a little less than a quarter of a million over each of the three years, or about 27 cents for each child enrolled in the public schools.

The program outcomes were evaluated with pre and post data from 136 grantees plus a control group of 44 teachers who applied for, but did not receive, grants. IMPACT's record of classroom teaching improvement ought to encourage others who would rather improve urban schooling than abandon it.

- Two-thirds of the developers and three-fourths of the replicators use more small group instruction because of this program, a gain at least twice that reported by the control group.
- The program's greatest success has come at the key teacher-to-student instructional method intersection. There, 85 percent more

of the IMPACT recipients than of the unfunded group reported significant changes in the same period.

- Three-fourths of all IMPACT participants have tried to disseminate their work.
- In a major breakthrough, more replicators report more improvement than developers, and replicators are more likely to try to recruit other teachers to better practice.

Finally, IMPACT works at a time when the "problem of implementation" has become notorious. Those who believe that nothing ever goes according to plan should examine this experience. Through IMPACT, several hundred teachers have accepted grants to do something they proposed and then have done that thing, efficiently, completely, faithfully, with some help but without close supervision.

The interpretation of the findings makes it clear that these results are attributable to the program's process features, especially the fact that it is "user-driven." That is, the teachers control their own innovations rather than having them imposed from above or outside. Second, the program captures the teachers' interest in being better professionals and it respects the reality of the world in which they work. Rather than exposing teachers in schools to the jealous or resentful reaction of some of their peers, IMPACT activities take place on a city-wide basis. For those who want prestige, IMPACT provides recognition. For those who need to fight isolation, there is networking. For those whose only barrier to better instruction is $100 for a gerbil habitat, IMPACT has supplied money.

IMPACT is succeeding at a problem that has overwhelmed generations of staff developers. That success is evident in the findings reported here and in

the willingness of New York's Board of Education to support half the program's future costs. Teacher participation and control makes a difference in the willingness to try out new ideas. Teacher networking provides the vehicle for peer learning and support.

Table of Contents

List of Tables and Figures

I. Introduction*

The neo-conservative wisdom is that public schools do not work and cannot be changed. Thus, the schools and the children in them are being abandoned by their critics and the middle class. Two decades of experience with school improvement projects have done more to clarify obstacles than improve instruction. Bureaucratic structures are supposed to impede change. Conserving forces are ascribed so much power that innovation "must" come from the outside. Older teachers are thought to resist new ideas. Inner city teachers are supposed to be so threatened and over-burdened they cannot take risks. Money is so scarce that improvement in precluded. Union rules stifle innovation. The pressure to "go-back-to-the basics" suppresses new ideas. Accountability and achievement testing have smothered creativity. The list of presumed obstacles could be extended indefinitely. All of those obstacles exist in New York City. Their cumulative weight should have crushed any program of teacher innovation.

In 1979, the Exxon Education Foundation created the IMPACT program to test teacher-to-teacher networking as a way to improve schooling in New York City. The focus was consciously limited to teachers on the assumption that helping them is intrinsically important. Top-down efforts have regarded teachers as targets, not partners. The walls of the self-contained classroom are hard for outsiders to break through. Teachers expect to be able to do, on their own, what they believe will best meet the needs of their students. They believe in their own judgement, not what "worked" for someone else, somewhere else. In part because of that, there has not been much of a "lighthouse" effect in which emulation occurred because school people searched diligently for ways to improve their practice, were persuaded by essentially print-mediated descriptions of better practices, and then slavishly adopted those better practices.

*This research was conducted with the assistance of Ms. Leslie Goldman, Department of Educational Administration, Teachers College, Columbia University.

The initiation, implementation, and dissemination of new programs in the United States have used up fifteen billion dollars since 1965 in attempts by outside forces to cause schools to improve. Much of the foregoing has been documented by the Rand Corporation's "Change Agent" series (c.f., "Federal Programs in Support of Educational Innovation," Rand, Santa Monica, 1976-80, a multi-volume study). "Change Agent" measured the ten-year retrospective summative effect--or better, lack of effect--associated with hierarchically imposed, temporary, exogenously initiated and funded, projects. Reflecting that analysis, Mann synthesized a set of factors which might inform an alternative paradigm for school improvement.

The root idea of this alternative--the user-driven system--and of the program here examined is that those who do the work should control the change. Rather than direction from the top level "policy makers," innovation aimed at instructional practice should be driven by teachers themselves. This contrasts sharply with efforts to "teacher-proof" the curriculum, or to force functional change through structural change, or to replace or retread inadequate teachers. The basic user-driven premise runs throughout IMPACT.

Other features of the user-driven system are as follows:

Self Interest

Teachers' need for security, their ambitions, and their needs for self-fulfillment should be emphasized, probably in the order stated.

Teacher Social System Entry Points

Rather than impose artificial, exotic, temporary phenomena from the outside, 'naturally occurring apertures' should be used. Teachers should get together and share ideas. Peer teaching and learning should be maximized but immediate

peers (especially those within the same school) are probably not as credible as sources of new ideas as those from other schools and districts. The theory predicts that attempts at dissemination and diffusion will be more successful from distant sources because:

(a) asking for help cannot be interpreted as a self-indictment;

(b) invidious competition and comparison in the intimate home-school setting are reduced;

(c) the ideas can be changed with impunity; and,

(d) they can be credited to their new user.

Capitalizing on this "second circle emulation" depends on district, system, or regional networks.

Learning Theory Precepts

Several practices that characterize the best of teaching and learning are directly relevant to a user-driven system. The following features should maximize change:

(a) participation, leading to ownership and a sense of fate control;

(b) clear tasks;

(c) substantial rewards; and,

(d) selective reinforcement (i.e., only positive changes reinforced, only non-aversively).

User-Monitoring

The major dynamic of the user-driven system is the reinforcement of change, NOT the creation or stimulation of change where none had existed. But, in order to reinforce changes already underway, user behavior has to be monitored by those who would reinforce it.

Disjointed Incrementalism

Most changes are marginal, not wholesale. Recurrent problems provide serial opportunities for fixing. School improvement is a social event with multiple participants and that, too, suggests multiple opportunities. Taken together, these characteristics of disjointed incrementalism suggest that successful school improvement efforts will be multi-faceted and modest but persistent. [The phrase "disjointed incrementalism" is Charles Lindblom's: for its application to educational innovation, see Dale Mann, "The User Driven System: Design Specifications and a Modest Proposal" in Mann, ed., Making Change Happen, New York, Teachers College Press, 1979.]

II. IMPACT II Described

The original IMPACT program had been designed by the Exxon Education Foundation to support individuals to improve educational practices in higher education. Its success influenced the foundation to extend the strategy to a precollegiate system. In IMPACT II, teachers are chosen from a proposal competition and supported directly to do what they determine. They are encouraged to participate in or to form teacher-to-teacher networks for the dissemination of those improvements. IMPACT II is being administered through the Division of Curriculum and Instruction, Office of Special Projects, of the Public Schools of the City of New York.

Exxon has given the Board a total of $734,237 (1979-1980, $244,578; 1980-1981, $243,409; 1981-1982, $246,250). Of that $90,000 has gone to 246 developers' grants; $60,00 to 255 replicators' grants; and $333,381 to support the project director, a program assistant, an accountant, and a secretary. $34,616 of the $333,000 central office budget bought substitute teachers to free developers

for dissemination or troubleshooting to replicators. $75,000 of that budget went to consultants and $45,000 for printing. About forty cents of every dollar can be traced to teacher expenditures.

A. Steps in the IMPACT Process

1. The IMPACT support staff at the central headquarters solicits proposals for classroom-based innovations by advertising in Board of Education publications, radio and TV announcements, and the United Federation of Teachers' paper, "New York Teacher."

2. Proposals are judged by a review committee of 21 including a majority of teachers plus representatives from administrative and community groups.

3. Grants of $300 are made to "developers" for materials and/or disseminating information about their programs to interested teachers.

4. Developers run workshops for teachers interested in replicating the developer's ideas.

5. Potential "replicators" submit applications which are rated by IMPACT staff and by developers.

6. Replicators get $200 grants for materials plus technical assistance from the developers, if necessary.

Insert Figure 1

IMPACT used a phased strategy with grants to three waves of developers beginning in June 1979. As the developer cohorts finished testing and packaging their ideas, proposal competitions identified replicators.

Figure 1

IMPACT II Timeline, 1979-1981

February 1979	June 1979	October 1979	February 1980	June 1980	February 1981	June 1981
Exxon and New York City Board of Education announce program.	First developers receive grants (96).	Developers give workshops for interested teachers.	Replicator grants awarded (46)	More replicator grants awarded (82). Second group of developers receive grants (75).	Third group of replicator grants awarded (33).	Fourth group of replicator grants awarded (91). Third group of developer grants awarded (76).

By the end of the 1980-81 academic year, 247 developers had received grants and 252 replicators had been supported for adopting developers' programs. About 100 different ideas have been replicated. A catalog describing each developer's program is distributed to the 900-plus New York schools each Spring. Six issues of The IMPACT Star, a quarterly newsletter featuring exchanges between teachers, developers, and replicators, have appeared. Importantly, IMPACT pays for substitute teachers so that developers can leave their classrooms and personally share program ideas with teachers in other schools. After-school workshops further dissemination. Six awards ceremonies and receptions honor developers and replicators and announce new ideas. IMPACT has been publicized in newspaper feature stories and more than 200 print announcements. Cumulatively, these activities are designed to create and support teacher-to-teacher networks.

B. Methods of Assessment

This analysis was designed to illuminate a set of questions that are important to urban school improvement, and tangentially to contribute to the management of the program being analyzed. The two major questions were:

- Has the IMPACT II program/process changed teachers, and, if so, in what ways?
- To what extent are the features of the user-driven system present in the IMPACT II process and to what effect?

Since our major purpose was to measure the impact of IMPACT, the pre-tested questionnaires' first section asked teachers to characterize their teaching practices prior to IMPACT; subsequent sections elicited the respondents' self-reports of IMPACT experiences and their consequences.

Questionnaires were sent to 99 developers, 134 replicators, and 99 teachers who had applied for but did not receive an IMPACT grant.* This unfunded applicant group is roughly similar to IMPACT developers and replicators except that they did not take part in the IMPACT process. They are, to that extent, a control group against whom the effect of the IMPACT intervention may be measured. Of the 332 questionnaires sent out, 180 (53 percent) were returned as follows:

Table 1

Questionnaire Returns by Level of Organization and IMPACT Status (N = 180)

	Level			
Status	Elementary	Junior High	Senior High	Total
Developers	29	11	21	61
Replicators	42	16	17	75
Unfunded Applicants	22	11	11	44
	93	38	49	180

Overall, the respondents are a fair representation of teachers in New York City. There are more women than men, half are in the 30-39 age bracket, more than three-quarters have been teaching for ten or more years, virtually all have had a lot of formal training. The City has approximately 800 elementary and junior high/intermediate schools, and 100 high schools. Twenty-five percent

*To supplement the survey analysis, program administrators and other administrators were interviewed, including superintendents and principals. The logs kept by developers of their teacher-to-teacher contacts were content analyzed. Community District One had created a local version of the IMPACT program supported by its own tax-levy resources. A case analysis of that experience allowed us to extend and verify the survey findings. Other details of the sample may be found in Appendix II.

of our respondents taught in high schools, a higher response rate than would have been predicted either on their proportion of all schools or on the generally dismal reputation of high schools as wastelands of educational practice. (See Appendix II for details.)

To prefigure the findings, the IMPACT experience makes a difference and, the type of IMPACT experience (developers versus replicators) makes a difference. The nature of the developers' role and its behavioral correlates is different from the replicators' who are not required to create, test, and "sell" an idea but merely to copy one. Comparing the replicator respondents to the developer respondents, as groups, the replicators are more likely to be female, are slightly younger, come from elementary or junior high schools and have much less teaching experience.

One section of the questionnaire allowed respondents to generalize about themselves as professionals. None of the three groups are very happy with their salary: 26 percent of the developers, 16 percent of the replicators, and 23 percent of the unfunded applicants thought their salaries "adequate." About half of each group blamed 110 Livingston Street for contributing to poor teacher morale. Surprisingly, the statement "The Union helps me" did not command majority agreement from any group (the average percent agreeing was 40).

Despite those factors, the three groups are as cheerful or satisfied as might be expected from people who have volunteered for extra work and who are intent on improving their instructional practice. Majorities within each category disagreed that "All anyone cares about is...reading" (58 percent of the developers, 55 percent of the replicators, and 52 percent of the unfunded applicants). To the contrary, all three groups were enthusiastic about the

possibilities for working creatively with their classes. The developers were, as expected, the most enthusiastic (90 percent) followed by the unfunded applicants and the replicators (84 and 81 percents, respectively). Two-thirds of the developers thought that they worked harder than their colleagues but only half the unfunded group and 57 percent of the replicators felt that way. All three groups were similar--and cheerful--in reporting that "My efforts as a teacher are often rewarded" (59, 57, and 61 percents for the developers, replicators and unfunded applicants. The anomaly is that the group that did not win IMPACT grants still has the highest proportion of its members feeling "rewarded.")

A higher proportion of the developer group than of the others (41 percent) reported a desire to move out of the classroom to administration. More replicators than developers said they would be continuing their formal training this year (77 percent). Both phenomena reflect the veteran status of the developers. There are also some hints in these data that the replicator group is less creative and less satisfied than are others. To this extent, IMPACT seems to be tapping two different population strata with its two types of grants.

III. Teacher Outcomes from IMPACT II

This part presents the self-reported results of teachers' participation in IMPACT and compares their current instructional practices with those they recalled having used before the IMPACT experience. The first thing to be noted about all three groups is their enthusiasm for teaching. An overwhelming proportion of the developers, replicators, and unfunded applicants said they enjoyed teaching. About 90 percent of each group felt that they were supported

and recognized for their good work by both their fellow teachers and the administration of their schools.*

Second, we asked teachers to evaluate their own teaching. Ninety-two percent of the developers and 91 percent of the unfunded applications considered themselves "master teachers." Dramatically fewer replicators gave themselves such high marks--64 percent.

IMPACT exists to help teachers improve their work. Prior to IMPACT, our respondents described their classroom organization as follows:

Table 2

Percent of Participant Categories
Preferring Different Classroom Organizations
Before IMPACT (N = 180)

Type of Classroom Organization	Category of Participant		
	Developer	Replicator	Unfunded Applicant
(1) Only whole class instruction	39 (24)	40 (30)	27 (12)
(2) All types (whole class, small group and/or individualized)	25 (15)	8 (6)	0
(3) Small group and/or individualized instruction	26 (19)	26 (19)	48 (21)
(4) Other patterns** or missing data	10 (6)	26 (20)	25 (11)
TOTALS	100 (61)	100 (75)	100 (44)

*The case analysis contradicts this survey finding. In the personal interviews conducted in the classrooms of twenty teachers, a majority reported not only indifference from their immediate colleagues but also hostility toward themselves as "showboats." (See III C. "A Case Analysis of District One's Incentive Grant Program," below.)

**The dominant "other" pattern of classroom organization was one that many experts would recommend, a combination of whole group with some individualized instruction. Yet, even among this presumably elite group of teachers, only 15 of our total sample of 180 said that they preferred this format.

Two things are remarkable. Prior to IMPACT most IMPACT teachers were using only whole group instruction. But, if individualization is a benchmark for good instruction, then the unfunded applicants were clearly the best of the lot! Roughly twice as many unfunded applicants as either of the other groups were using small group or individualized instruction before they applied--unsuccessfully--for IMPACT help.

IMPACT's major reliance is on networking so we asked about the respondents' previous experience with some aspects of networking.

Table 3

Percent of Participant Categories by Frequency of Attending Conferences or Visiting Other Schools Prior to IMPACT (N = 180)

	Category of Participant					
	Developer		Replicator		Unfunded Applicant	
Frequency	Conference	Visit	Conference	Visit	Conference	Visit
Often or Sometimes	88 (54)	58 (35)	82 (61)	37 (28)	80 (35)	48 (21)
Rarely or Never	12 (7)	42 (26)	18 (14)	61 (46)	20 (9)	52 (23)
Missing Data			2 (1)			
TOTALS	100 (61)	100 (61)	100 (75)	100 (75)	100 (44)	100 (44)

As expected, the developer group is consistently more active than the others but all the groups have a similar pattern in that while they do go to conferences, far fewer visit classrooms outside their own school. The isolation

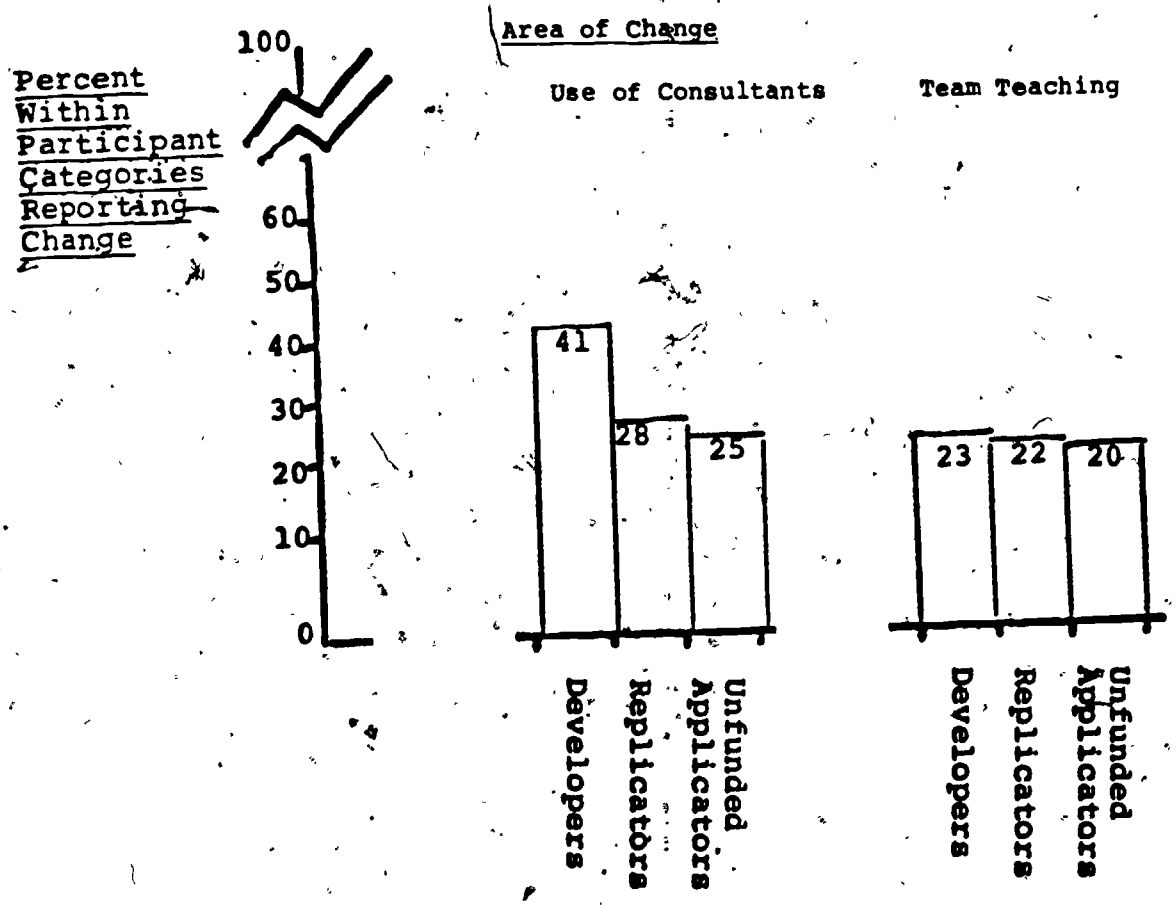
of teachers is clear, especially for the replicator group more than 60 percent of whom have "rarely" or "never" visited another classroom outside their school prior to IMPACT.

A. Teacher-to-Teacher Changes

There are several domains of possible change in professional behavior. The following analysis concentrates first on adult-centered and then student-centered effects.

Figure 2

Percent of Participant Categories Reporting Changes in Interaction with Other Adults Due to IMPACT (N = 180)



All IMPACT participants, both developers and replicators, reported making more use of other professionals than did the unfunded group (mean score for developers plus replicators across both areas is 29 compared to 25 for unfunded applicants). As a group, the developers reach out more consistently to other adults than the replicators or the unfunded applicants. The least complicated and more ephemeral strategy to enact is the use of consultants.

B. Changes in Instruction

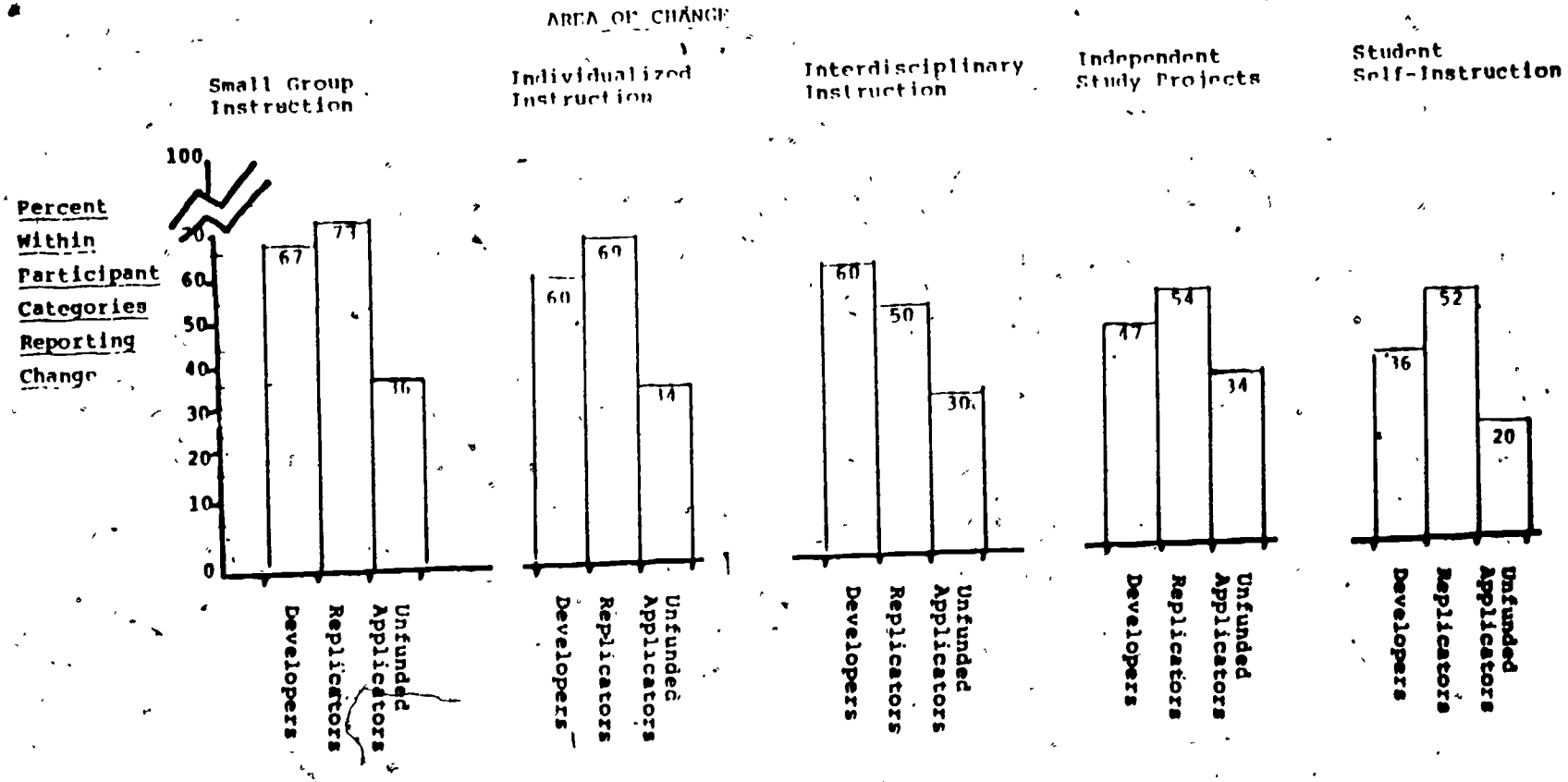
In general, student-related changes can be affected by teachers as individuals.

Insert Figure 3

On these student-related factors, IMPACT is even more clearly successful. Comparing the developer plus replicator groups to the unfunded applicant group across all five areas, the IMPACT process brought instructional improvement to 85 percent more of its participants than those without the IMPACT experience. (Developer plus replicator mean score on the five areas was 57 percent reporting change due to IMPACT: unfunded applicant mean, 30 percent.)

The array of IMPACT activities (receptions, ceremonies, newsletters, developer grants, replicator grants, etc.) has made a difference. Two-thirds of the developers and three-quarters of the replicators reported that, because of IMPACT, they used more small group instruction. (See Figure 3, p. 15.) A little more than a third of the unfunded applicants reported increases in the same technique during the same period. (The unfunded applicants were asked, "Which of the following educational practices have you changed in the last two years...?"). Most teachers are regularly exposed to ideas that don't "take."

Figure 3: Percent of Participant Categories Reporting Changes in Instructional Format Due to IMPACT (N = 180)



They get lectured by their principals, attend classes and workshops, see things in journals, even take part (nominally) in special projects. For the most part, those activities sink without a trace. But IMPACT has made a difference in a minimum of two-thirds of its participants, almost double the innovation rate shown by the unfunded applicants.

The first two areas displayed ("small group" and "individualized" instruction) have a similar score pattern and, since the two are conceptually and practically related, that similarity contributes to the face validity of these data. IMPACT's greatest penetration of teacher behavior is in these student-related factors, especially those that involve grouping for instruction, not in the previous "adult" related set. Thus, networking among teachers seems indeed only a means to a student-related end, exactly according to the program's design. The adult honorific activities do not stop there but actually get carried through to new classroom practices. It is also reasonable to conclude from these data that it is easier to get teachers to change their work with kids than their work with each other. "Interdisciplinary" instruction (Figure 3) has been embraced at roughly twice the rate as team teaching, perhaps because very few schools had more than one IMPACT grantee while it takes (at least) two to team teach. "Interdisciplinary" instruction on the contrary, can be accomplished by one teacher or by getting a colleague to help, for example, with the geometry part of an Egyptian unit.

Fewer IMPACT recipients report having adopted "independent study projects" and fewer still "student self instruction." Those that have used independent study projects were probably locked in by the nature of the project (e.g., Greek masks, ecology diaries, metric food experiments). The successful implementation of auto-instruction requires a minutely articulated curriculum, often supported

by audio-visual equipment. The low scores suggest that this area is beyond reasonable expectation given the very small grant amounts.

What teachers do behind the classroom door has been tough to penetrate. Thus, these findings from IMPACT are enormously positive. IMPACT works best where one might have thought it would work least. But there is another remarkable phenomenon in the figure above. On adult-related changes, the developers had the highest scores. Here, the replicators consistently lead the parade. Sixty percent of the replicators report having changed their instructional practice, compared to only 54 percent of the developers and 31 percent of the unfunded applicants. Between seven and sixteen percent more of the replicator than of the developer groups report having changed their classroom practice because of IMPACT. But the developer group has been more heavily involved in IMPACT. In general, as participation increases, the amount of new behavior also increases. Here IMPACT seems to be effecting the less involved group more profoundly.

There are some alternate explanations that should be considered. Our data collection took place while the IMPACT experience was fresh in the minds of all the replicators but some of the developers had been finished with the process for a year or so. The recency of the experience might account for the difference except that old memories are generally selected in a positive direction, not a negative one. Thus, the developers are likely to include some who have overstated the positive nature of their experience but even with that distortion the replicator effect is greater.

Another explanation for the difference may lie in the basic, pre-IMPACT teaching of the two groups. If the developers had already been using that which they brought to IMPACT, then they would have less change to report. Yet the

groups' own descriptions of their previous classroom practices are remarkably similar (see Table 2: "Percent of Participant Categories Preferring Different Classroom Organizations Before IMPACT"). On the key factor "small group and/or individualized instruction," the two are exactly the same.

The two tables corroborate the replicator effect although not as dramatically as the evidence in Figure 3. On Table 2 "...Classroom Organization Before IMPACT," 26 percent of the developers had been using small group and/or individualized methods: Figure 3 "...Changes Due to Impact" shows an average of 63 percent adopting such methods. The similar figures for the replicator group are 26 percent "pre" and 71 percent "post." While the developer group showed a gain of 37 points, the replicators gained even more, 45 points. The consistency and size of these effects suggest that something unexpected is at work. On key instructional variables, replicators--with less dollar support, less participation, and (presumptively) less recognition--are still more likely to be effected than are developers. Thus, IMPACT has made some remarkable differences especially for the replicators and ever more notably on the heretofore tough-skinned area of instructional practice.

Two final areas of instructional change have been effected by IMPACT. More IMPACT recipients reported using field trips than did unfunded applicants, a logical consequence of IMPACT having provided its grantees with discretionary resources. And about twice as many developers and replicators had adopted open space techniques as had the unfunded group over the same time period.

Another outcome area is teacher attitudes. IMPACT has been dealing with a group of motivated, volunteer teachers. Their morale began at a high level (virtually all said they enjoy teaching) but IMPACT has still increased their enthusiasm. Thirty percent of the unfunded applicants said their feelings about

teaching had improved in the last couple of years (not, presumably, because of IMPACT) but the developers and replicators reported better attitudes at twice that rate (65 and 69 percents, respectively. Note again the higher replicator figure). Eighty-three percent of both the developers and the replicators reported gains in self-esteem due to IMPACT.

In Section IV, we turn to the interpretation of these results and re-examine the IMPACT experience in terms of a particular set of propositions which may help account for the program's remarkable success. Prior to that discussion, we present a case analysis of one community district's experience with IMPACT and its own, roughly similar program.

C. A Case Analysis of District One's Incentive Grant Program

In the Fall of 1980, Community School District One on the City's lower East Side announced a "District Incentive Grants" Program (DIGs) roughly modeled on the Central Board's Exxon-funded IMPACT program. Several things are remarkable about DIGs, not the least that in extreme fiscal straits the District chose to devote some of its regular tax money to the improvement, not simply maintenance, of teaching. The sum was not large--about $5,000 in total grant awards--but the choice was clear: to provide, for example, a few months of an all-day kindergarten or to try to make some difference in the quality of the instruction across the District.

The District's instructional improvement program departed from the IMPACT model both in purpose and procedure and those departures facilitate the analysis of IMPACT especially with regard to the process variables. While Exxon set out to improve instruction through teacher-to-teacher networks, District One intended "to reward local effort and to train teachers to develop competitive funding

applications" (memo to "All Principals, All Staff," from the Community Superintendent, re: "Project D.I.G. Report," undated).

At one level both sought to change behavior but Exxon's agenda was clearly more general and more ambitious. Honoring already excellent teachers and building their grant-getting skills en passant is simpler to achieve because it requires less change, growth or development on the part of an already accomplished audience.

These differences in purpose were reflected in procedures. District One created a mini-grant proposal competition without the teacher networking aspects characteristic of IMPACT. Thirteen of the District's teachers received DIGs grants; seven others had had IMPACT grants. In pursuit of this case study, all but one of those teachers were interviewed in their school and the relevant district administrators were also interviewed.

1. The DIGs Program

The incentive grant program was initiated by a newly-hired coordinator for funded programs. The superintendent had been concerned about teacher morale and wanted to recognize high quality instruction. He had concluded that money for "extras" would have to come from outside the City schools but capturing that money would depend on teachers, only a few of whom had the experience necessary to get grants. The proposed DIGs program promised to serve both purposes at a small cost.

> The program could be modeled on the ESEA Title IV Part C mini-grant program, which enables staff to carry out programs costing $1000-$3000. The district incentive grant program, though smaller in scale, would serve to motivate and reward local effort, and might serve as a testing ground for projects which would be later developed into Title IV-C mini-proposals. (Proposal memorandum to Superintendent, August 20, 1980)

The proposal format was consciously patterned after Federal Title IV-C forms to give teachers practice in grantsmanship. It soon became apparent that IMPACT had some useful expertise, even though IMPACT's multiple purposes exceeded those of the District especially in the dissmemination, replication area. IMPACT's greatest assistance was with the proposal review and criteria and, eventually, in helping showcase some of the District-funded teacher efforts in IMPACT's City-wide publications.

The District inaugurated the program with a modest mimeographed memo sent with the instruction that it be posted. In many schools, the standing joke about the bulletin board is that it is an excellent place to hide things. The superintendent announced the program to the principals and some (but only some) principals passed the message on to their faculties. Neither the incentives nor the announcement were very dramatic yet 22 teachers from ten schools applied. (There are 530 teachers and 18 schools in the district.)

Proposals were reviewed by a large committee with all the major constituencies represented. The proposal rating form provided a total of 100 points to be distributed up to pre-established amounts across eleven separate criterion areas (e.g., "evaluation plan," "ease of accomplishment," "potential for dissemination," etc.) to give the committee a framework to justify their anticipated tough decisions. In the end, the choices were easy because the nine unfunded proposals were so clearly chaotic, unrealistic, or trivial.

DIGs was proposed in August, approved and announced in September; workshops were provided at the end of September and again in the middle of October. To give teachers time to prepare their responses, the competition's closing date was in the middle of November. Within the next month, the review committee had completed its work and on December 18, 1980, the superintendent wrote to the

applicants with either good or bad news. From the administrative perspective, the time from the inception to the awards was very brief and very efficient. From the teacher perspective, the grants arrived only a few days before the Christmas recess and woefully far into the school year.

It is difficult to exaggerate how far the business of grants management is from the classroom teacher's world. Teachers are ordinarily unaware when they are paid from ESAA or Title I and similarly uninformed that someone else had to establish their schools's eligibility, document its needs, sequence its activities (including that teacher's diurnal life), allocate resources, and measure the outcomes. Proposal writing and grant getting are far less real than the windows stuck in their casements, or the blistered ceiling paint, or the cockroaches in the book cupboard. In fact, for many teachers the business of grants is so unreal as to be mystical. One teacher went to three different IMPACT events before he realized that those developers looking for replicators were talking about him! It simply had not occurred to him that he would literally be able to write a propposal. Several teachers made similar points about the jargon--"it's a special language," "...you have to know what 'They' want," "I needed confidence." Teachers reported spending from one hour to ten days in preparing their proposals. Only a handful of teachers moved easily through the proposal process. Most thought the district's two proposal-writing workshops were excellent, relevant, and helpful; without them, the DIGs program would not have had any customers.

The DIGs project meets Alfred North Whitehead's requirement that 'action has to be simple or it does not happen.' A group of motivated, already good teachers competed for small amounts of money to be spent in the same academic year for purposes that they could determine. The vast majority used their

grants to buy tangible if temporary things; as we shall see, most used the money to continue activities they had been doing before. DIGs touched ten of the district's eighteen schools and only one stratum--the best--of its teachers. By having written a grant, started something new, taken on extra work, DIGs teachers were already an elite, but not even this group self-starts. More than half mentioned the overt role of the principal: "my principal handed me the application and helped me write it"; "the principal said if I would write it, he would get the school secretary to type it"; "the principal helped me to refine it"; "the principal pushed me to complete the application." Only two of the thirteen DIGs teachers managed to complete the simple proposal process on their own. If these elite teachers needed that help, imagine the energy and leadership necessary to move innovation further down teachers' ranks.

Both DIGs grants and IMPACT grants involved about the same amount of money, $300 per teacher. $300 is not a lot of money to support a professional (some doctors spend 3,000 times that amount of a CAT scanner). But, considering that two weeks' organizing a cake sale may raise less than a hundred dollars, or that the total year's supply budget for a junior high school art teacher is $600, then the $300 has a new significance. In a handful of cases, the money was used for the services of a consultant (e.g., a dance therapist). The overwhelming use was for consumable supplies--books, slides, film, food, special equipment. Only two projects augmented their resources with matching grants.

District One teachers believed that the DIGs program was loaded in favor of basic skills, especially reading ("'They' don't like solar-powered windmills"). In fact, more grants did go to the basic skills, six in reading, two in mathematics. But, there were also three special ed grants, two for nutrition education, two for social studies, and two in the fine arts area.

(The total reflects DIGs plus IMPACT.)

Once the grant was awarded, neither DIGs nor IMPACT recipients encountered many problems. One of the most intriguing difficulties came from an IMPACT replicator who reported that his developer pushed so hard for the fidelity of his idea's replication that it resembled the old, discredited attempts to "teacher-proof" the curriculum. The developer demanded particular pre and post tests, tried to dictate the time spent teaching, and sent the replicator materials with his, the developer's, name on every page. The replicator's exasperation peaked when his students asked him if he was as smart as this "Mr. B" whose name they saw on every page. The experience demonstrates why it is important for teachers to be able to adapt ideas to their own circumstances and why it is important for them to be able to take credit for new things (whether or not that credit is warranted).

The more complex was the proposed implementation, the more likely that something went wrong. One proposal was written by a team but the lead teacher fell from the principal's grace and was transferred to another class before the project got underway. Where DIGs money went for consultants, Central Board personnel regulations mushroomed the complications. Overall, it seems that there were fewer difficulties in the District's DIGs projects than in the Central Board's IMPACT projects. But the more important generalization is the smooth operation, by the teachers, of <u>all</u> the grants. They got to plan and determine how to spend money, they dealt with vendors, and with their own school's bureaucracies, things went largely as planned. And <u>without the stick of monitoring!</u>

For reasons of logistics and philosophy, the District had decided that grantee supervision was unwarranted. The superintendent sent grant award

letters and an end-of-the-year congratulatory letter and the teachers liked that. Whenever the superintendent had visited a classroom, the teacher beamed at the memory. Others thought it good not to have been bothered (in the supervisory or evaluative sense) and still others regretted that no one had come to see their accomplishments.

Both DIGs and IMPACT had hoped to increase the sense of self-worth on the part of teachers by allowing them to make decisions ordinarily reserved for administrators. That faith was well placed and, as is discussed in the next section dealing with outcomes, the teachers felt better.

2. The Outcomes

In looking at school efforts, the kids as the ultimate beneficiaries are often neglected. These teachers kept this analysis from that error because of their insistence on a single theme: IMPACT or DIGs, the kids got something that was good for them, they grew, they got taught. Change projects are routinely and correctly expected to have benefits beyond the term of the grant. At the optimum, we should expect some sort of continuation, or institutionalization, or stable new behavior. In that regard one of the grants seems especially hard to justify in that "all" it did was to bring a music education teacher into the classroom of a tone deaf teacher for a few days. Next year's children for that elementary teacher will be without music and to that extent the grant will have disappeared without a trace. But, as the teacher put it, at least this year, "...these kids got something they should have that I can't give them." Virtually every teacher stressed the same child-related benefit from their grant although for the most part the benefits were general ("...they're more turned on," "they liked school better"). One class did move from 7.1 to 9.7 on its average grade level equivalency reading scores, arguably as a result of the grant activities.

totally temporary materials, e.g., tulip bulbs, or bindings for class-produced essays. These teachers had not and could not have done those things before, but neither will they be able to continue those activities.

Has DIGs made a difference in this top group of teachers' already high morale? They were happy to have their creativity recognized, they said that this had "kept the batteries charged," or that it had made the last months of school "a breeze." Two teachers reported a kind of hangover from having been so high on the grant process. Both had crashed and were resentful about not being eligible to repeat as grantees (one suggested a grace period followed by renewed eligibility). The teachers felt honored and to that extent encouraged, but DIGs simply maintained their already useful attitudes.

The capacity building outcomes of the DIGs program are its most clear-cut success. The District set out to de-mystify the proposal process and build a cadre of sophisticated grant-getters. The 13 1980-81 DIGs grantees produced eight Title IV-C proposals for 1981-82. One person, who had been teaching for 20 years and never had a grant, wrote three proposals in a single year! Another teacher recognized that she would not be able to repeat as a DIGs recipient, liked the networking ideas of IMPACT but was uncertain about her prospects there, and so concluded that, wholly on her own, she should try to form a chain of teachers and schools interested in her health education idea! If the DIGs program had had no other positive outcomes, it seems quite likely that the $5,000 tax levy dollars will turn a handsome "profit" in future outside support for the District. (And that suggests an interesting externality for the IMPACT process as well.)

The final outcome area, continuation, is more mixed. Again, we should acknowledge the child-related outcomes first. Some kids who might never have

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learned about cameras will not now forget that interest; others will keep up the creative writing they discovered and learned to trust and like; still others will very probably have fewer cavities (honest!), be less obese, and more healthy because of a $300 DIGs nutrition grant to their teacher. Those are real gains but they are also the sort of one-time benefits that have always been possible from mini-grants. Most DIGs teachers used their money for supplies and they and their students happily consumed those supplies doing what they said they would do. The litany from those efforts clearly predicts the future: "Where will I get money for bus trips next year?", "If I get more paper, I can do it, but if not...", "What, are you going to pay for the film processing next year?" One totally candid teacher had never regarded her project as anything but a fleeting event and was astonished to think that maybe she could figure out how to do the same thing again. Another said she would go back to spending her own money. Another won't continue because her success got her promoted out of the classroom. In general, the more closely linked the grant was to materials and the fewer process dimensions it had, the less likely teachers were to contemplate its continuation.

For $5,000 of mostly materials support spent by teachers at their own discretion, District One clearly honored some of its best teachers and just as clearly stimulated them as entrepreneurs. On its own terms, the DIGs program is a sound and useful achievement. There is an element of unfairness in measuring DIGs against an additional standard it never sought to meet. The "dissemination," "replication," "innovation" expectations appeared on the "D.I.G. Review Form" used by the rating committee but were never seriously embraced. The District's carefully controlled, limited aspirations are a refreshing departure from over-sold projects of school change that lead only

to more disillusionment and cynicism. Having said that, it is also possible that District One might have achieved more with the same resources. We have already noted that on the tough tests of innovation (new behavior, changed behavior) the District's project fared less well. The amount of new change was slight, the penetration into the more ordinary (more numerous and far more problematic) teacher ranks was puny, and the prospects for continuation are dim. In the concluding section of this case, we examine some of the comparative dynamics of DIGs vis a vis IMPACT, especially with regard to the networking and recognition dimensions. That section concludes that adding those dimensions to DIGs would have helped it achieve this more ambitious agenda of improvement.

3. Some Dynamics

The major difference between DIGs and IMPACT is in the "process" dimension of change. Both used proposal competitions; both relied on volunteer, self-identified audiences; both spent more money supporting materials than anything else; both used small amounts of money over a single year. But beyond that, IMPACT has consciously fostered teacher networks and has tried to maximize recognition for the teachers' achievements. At the onset it is important to note that District One contemplated the same thing but decided that those activities would be premature. Their grants never took hold until January or February, few if any teachers had anything to share until late Spring, and by then the City's annual struggle with achievement testing and promotion had begun to consume everyone. The district office had wanted to have a Spring 1981 "fair" at which the DIGs grantees could display their work, but that would have required more planning time than was available. Because of these considerations, the following discussion of the absence of networking and recognition ought NOT to be read as a criticism of District One but rather as evidence about the

effect of the absence (perhaps temporary) of those factors in an otherwise comparable program.

Of the twenty grantees, only two could report that colleagues had adopted their ideas. In one instance, a special ed resource teacher who had always worked with a four-teacher team got teammates to adopt his ideas. In another instance, a foreign language teacher from a neighboring classroom "grabbed" the entire idea and spontaneously and without help completely replicated the entire project. (The link in that instance was not from one teacher to another but rather through the children of one class peeking in on another and asking their own teacher, "Why can't we...". The extent to which children link adults in schools is an unexplored topic.)

For the other teachers, the DIGs grants did nothing to relieve their isolation, but IMPACT Grants were somewhat more successful. One said, "I'm getting out, I don't mind being exploited year after year as a permanent per diem sub, but teaching is the most isolating thing I have ever done." Another said, "It's kids, kids, kids for six hours and twenty minutes." Virtually all regretted being so cut off and sensed that their initiative with the grant might presage something else.

That possibility was most clearly demonstrated during one of our interviews. The conversation was interrupted when another teacher wandered into the room and after eavesdropping for a few moments volunteered that she had done nearly the same thing as the DIGs teacher's project, two years earlier. Both were teachers in the same school, both taught the same subject yet neither knew of the other's work. Similarly, the two projects centered in audio-visual technology were unknown to each other, the two projects that dealt with ancient history proceeded unaware of the other, and the two nutrition projects operated

in mutual isolation. As one teacher put it, "the District never thought of making the pebble spread the rings." The observation is not true except from the perspective of that and the other lonely teachers who wanted something more. IMPACT reduced isolation but DIGs, lacking the process paraphernalia, did not.

If they had any experience with the activities that support IMPACT's teacher-to-teacher network, the teachers liked it. They liked to get out of their own school and district, they liked to be invited to places with status (e.g., the Metropolitan Museum). The IMPACT newsletter was printed (not xeroxed) in color (not black and white) on quality paper (not newsprint). It all helped and cost (recall that only 40 cents of each Exxon dollar could be traced to teacher expenditures!). Teachers liked to visit and be visited. One teacher produced a show for her school's assembly based on her grant, and while the other teachers (and children) were entertained, no one picked up the idea for their own use. Another teacher went to an IMPACT soiree, and after listening to and chatting with the developer, brought four applications back to his school and handed them pointedly to four colleagues. The difference in the two experiences is between the entertainment purposes of the assembly (a performer-to-audience connection) and the replication purposes of the IMPACT soiree (a purposeful exchange among peers). The case data demonstrate that teachers regard other teachers as trusted, credible sources of assistance and so they learn from each other. Thus, the effect of IMPACT's networking is clear both in its own right and by its absence from DIGs.

The effect of recognition is another of the differences between the two programs but its consequences are more ambiguous. The culture of schools does suppress innovation. District One serves mostly working-class poor and non-working poor families. The social and familial violence surrounding the schools

is formidable. In tough circumstances, teachers survive by sticking together. The greater the threat, the greater the cohesion and enforcement of the group's norms (a process that is mostly indirect and unconscious). One teacher said of his school's faculty, "They want to believe that 'nothing works' because it justifies their laziness." Another teacher explained her colleague's unwillingness to apply for grants by saying, "the more you do, the more you get asked to do. The less you do, the more you get left alone." Several teachers expressed the same thought, "I'm not into recognition" but there was more than modesty at stake. One said, "...they already think I'm a rate buster because I'm never absent and always enthusiastic." Another said, "I don't want to showboat. This is a small school and favoritism is a big problem. The principal's cronies are singled out and I don't like that so I don't want any special attention for myself." A third was wistful about her hard work having gone unrecognized but pointed out that the principal was low key AND paternal. If the principal ever got into comparing teachers (for example, praising some and by inference criticizing others), the result would be conflict. When asked about recognition, a fourth said, "I don't rock the boat, I don't make waves. Only my close friends know what I'm doing."

IMPACT does recognize teachers but generally away from their schools. Recognition inside the school is far more problematic. One teacher had asked the principal repeatedly for permission to explain her project at a faculty meeting but the principal refused because, the teacher felt, that would have threatened the principal's already fragile leadership. Another principal hogged the limelight whenever the teacher's grant got attention. Thus, while some fraction of the DIGs teachers might have been pleased and even motivated by recognition, providing that visibility is difficult and--from the teacher's perspective--dangerous. IMPACT's plaudits come in remote settings.

IV. IMPACT II AND THE USER-DRIVEN SYSTEM

Theories exist to explain an otherwise chaotic reality and action, to be generalizable, has to be comprehensible. IMPACT II is an instance of parallel invention--practitioners and an analyst looking at similar events and reaching similar conclusions. This part compares the IMPACT program and outcomes to the theory of the user-driven system. Neither the program staff nor the foundation sponsors will be surprised that IMPACT's effects are a function of its teacher-driven nature.

Teacher control of the innovations that they are to embrace is central to the program and the theory. Since that control is exercised at so many junctures, it is a topic that runs throughout this part of the analysis. But we should note that teacher control is NOT a simple, binary phenomenon, e.g., "In IMPACT, they do; in others, they don't." For example, teachers could not do whatever they wanted with the grant. Their ideas had in the first instance to be approved by a committee and that is a big slice out of a professional's autonomy. The dilemma of a purely user-driven system has always been those drivers who abuse the privilege by running off the road, driving the wrong way down one-way streets or, in the schooling case, using a grant to implement a rotten idea. IMPACT's review and approval process solved that problem but, as the unfunded applicants would attest, at the expense of some teachers' judgment and autonomy.

A. Self-Interest

Does IMPACT maximize teacher interests? Which ones? And how?

The first sort of self-interest is survival. These teachers have watched the City excess or transfer thousands of their colleagues and close scores

of schools. In another circumstance excellent professional performance, e.g., getting support for better procedures, would be an important career safeguard. But here only longevity counts and thus the only motivations to better practice are those that teachers find within themselves.

One of the classic sources of responsiveness in a democracy is the ambition of its leaders. A city council member, for example, tries to be attentive to her constituents not (only) from civic virtue but because she wants to be Mayor where, the theory holds, she will attend to citizen interests best if she knows that excellent performance there will position her for further advancement, and so on. In this view, the pithy ambition of leaders guarantees democratic responsiveness. Or, said differently, since self-interest is the only reliable motivation, the problem of public policy is to so arrange things that the individual's pursuit of self-interest contributes to a higher level good as well.

We asked our respondents if they wanted to move up the career ladder or (as teachers see it) "get out of the classroom" into administration. Forty-one percent of the developers said "yes," 20 percent of the replicators, and a third of the unfunded applicants. The result is interesting for what it suggests about [redacted] three groups, especially the developers whose initiative and seniority are pulling them away from instruction. (Will IMPACT help these teachers "escape" from the classroom or has it helped them stay in teaching? The question is important although, on these data, untestable.) Notice also that the replicator group has only half as many of its members interested in administration, yet another indication of the different teacher strata accessed by the two sorts of grants.

Still, it is unlikely that anyone would believe that a $300 grant could be the stepping-stone to advancement. Thus, we sought more direct measures of

these teachers' motives for being teachers.

Table 4

Frequency Distribution of Developers' Reasons for Teaching (N = 61)

Reasons	Percent
For "self-fulfillment"	45 (28)
For "the students"	23 (14)
For money	10 (6)
Two or more of above*	22 (13)
Total	100 (61)

Second, we asked "which aspect of the IMPACT II program did you feel contributed to you the most?" The choices were: "The recognition (awards)," "networking (meeting other teachers)," and "the money to purchase materials." The table below displays the recipients' first choices.

Table 5

First Choices of IMPACT Features (N = 135)

Recipients (Developers and Replicators)	Percent	N
Professional Recognition	12	(18)
Networking	38	(57)
Money for Materials	50	(75)
	100	150**

IMPACT relies for its effect on several strategies--dollar support, connecting teachers to others, and praise or reinforcement. The project staff believes that the networking activities are the fulcrum of improvement

*The modal response here combined "fulfillment" with "students."

**Some teachers had multiple first choices.

but the teachers take a more instrumental view. Table 6 shows the rank ordering of the features by the teachers.

Table 6

Rank Ordered Contribution of IMPACT Features Within Recipient Categories (N = 136)

	IMPACT Features											
	Percent choosing Money for Materials				Percent choosing Networking				Percent choosing Recognition			
	Developers		Replicators		Developers		Replicators		Developers		Replicators	
	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N
Contributed Most	41	(24)	68	(51)	36	(22)	50	(37)	32	(18)	-	(0)
Second	40	(23)	28	(21)	23	(14)	37	(28)	32	(18)	20	(15)
Third	19	(14)	4	(3)	41	(25)	13	(10)	37	(20)	80	(60)
Totals	100	(61)	100	(75)	100	(61)	100	(75)	(102*)	(56)	100	(75)

In general, the data confirm the altruistic sense that these respondents have of themselves. Our case interviewees had said, they weren't "in it for recognition" and neither are the survey respondents. Eighty percent of the replicators put that last; none chose it first. Recognition is a mixed blessing if it causes teachers to be frozen out of their peer culture. While "extra money" got high marks, that should be understood in the context of the City's average teacher salary of $19,747 (1979) and of the tiny sums available to teachers for materials. Thus, the self-interest dimensions of security, ambition, visibility/recognition, and even money do not explain much.**

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*Some respondents ranked more than one feature as having contributed "most."

**The other side of the coin is important. While recognition may not tell us much about most teachers, fully a third of the developers put it at the top

That leaves the "self-fulfillment" dimension in the softest, least measurable sense. One aspect--the satisfactions of collegiality--is probably captured by the "networking (meeting other teachers)" item which was chosen first by a third of developers and half the replicators (Table 6). Forty-six percent of the developers agreed when asked, "Has meeting other teachers like yourself contributed to a more positive attitude toward teaching?" One developer said, "...getting in touch with other stimulating and turned-on teachers is a reinforcement of your own work; it is the best part of the IMPACT process."

In fact, IMPACT fulfills teacher professionalism in several ways: opportunities to be trained and to train others, visiting other schools and being visited, publishing ones experiences and materials. When added to the collegiality and recognition dimensions, it seems likely that self-fulfillment accounts for most of the self-interest motivation harnessed in this program. Thus, the IMPACT experience reverses the predicted order of these motives: survival is last, ambition close to last, and self-fulfillment at the top, not bottom.

B. Teacher Social System Entry Points

Traditional theories of school improvement have viewed the faculty as an enemy camp that had to be infiltrated by outsiders who would bring new and better ways to do things. Once they had succeeded, these "change agents" would move on. The traditional theories reckoned without the vigor of the faculty as a political culture. The schools won more struggles than did the

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of the list of things they liked about IMPACT. This part of IMPACT's multi-pronged strategy is very useful to this group and thus the receptions, newsletters and other public relations features should be maintained. They are, as well, part of the web which may be synergistic.

temporary and artificial programs imposed on them.

One noticeable IMPACT feature is that it is only a "program" at the City-wide level. Its unit of intervention is the individual teacher, not the school or district. Within the teacher's life, we have already seen how IMPACT taps the continuing drive of some of the system's best teachers to be better. IMPACT receptions at the Metropolitan Museum, ceremonies in the "Hall of the Board" (a first-floor auditorium at 110 Livingston Street), slick publications--all hook into the pre-existing need of teachers for status in the eyes of someone else besides their students. The dominant reality of a teacher's life is the six-hour twenty-minute day almost totally tied to student-related demands. IMPACT exploits that base by providing developer-teachers with substitutes so that they can offer workshops, go to other schools, or receive visitors. With IMPACT auspices, forty-two percent of the developers have visited other schools and forty-seven percent have attended workshops.

The "user-monitoring" section discusses the logs kept by developers of their contacts with other teachers. Those logs show a total of 228 inquiries to 48 developers. In order to respect the fragile world of an outstanding teacher (especially one in a less than outstanding school), both the teacher with an idea to push (the developer), and the teacher with a curiosity about that idea (the potential replicator), have to be protected. Teachers, like prophets, are seldom honored in their own settings. The IMPACT networking system facilitates this kind of more anonymous (but still credible) contact through its social occasions, telephone contacts, and diffuse voluntary procedures. The developers' logs, for example, show almost the same number of contacts from outside the developer school's borough as within it (113:115). The vast majority of the log entries came from schools other than the

developers' own.

On the other hand, we asked our respondents directly what had been their project-related experiences with other teachers. It was reasonable to ask developers about "training" others, but replicators were asked only if they had "spoken to" others about the ideas they were adopting.

Table 7

Frequency Distribution of Developers and Replicators Contacts by Setting (N = 136)

	Recipient Category	
Setting	Percent of Developers who "trained" others	Percent of Replicators who "spoke to" others
...outside own school	52	61
...in own school	62	87
...both	74	95

A higher proportion of both groups report own-school contacts suggesting that the "second circle" thesis may be wrong. Diffusion here may not be skipping nearby places. A full test would require data about the number of contacts in each place and especially about their effect. Proximity alone increases the likelihood that an IMPACT grantee would have had some purposive interaction with a faculty colleague about the grant. From that perspective the 38 percent of the developers who had no own-school training contacts to report is startling. And second, "training" people and "talking to" people is not at all the same as changing people. Still, there is in these data more encouraging evidence about the willingness of IMPACT grantees to proselytize their cause, close to home than would have been predicted from the theory.

The replicators, by the way, continue to surprise. Formally expected to do not more than adopt/adapt someone else's ideas, and without the outreach support

available to the developers, they show consistently higher scores in all settings than do the developers. Among their other attributes, they may be true believers.

The dictum that naturally occurring apertures provide better leverage than artificial ones is also honored by the project features discussed in the previous section. For those who want prestige and visibility, IMPACT provides recognition. For those who need to fight isolation, boredom, and anomie, there is networking. And for those whose only barrier to a better classroom is $100 for a gerbil habitat, IMPACT has money. Thus, IMPACT captializes on the ordinary features of a teacher's life.

C. Learning Theory

In earlier research, several hundred Federally-funded projects of staff development were found to have used practically none of what is generally accepted as desirable practice in any teaching/learning situation (see Mann, "The Politics of Training Teachers in Schools," Teachers College Record, v. 47, n. 3, February 1976). IMPACT comes far closer to honoring the injunction that programs to educate educators ought themselves to be educationally sound. IMPACT maximizes teacher involvement to such a degree that one person interviewed in the case analysis said that he would "...never apply for an IMPACT grant; they expect too much for too little." Obviously, all of the IMPACT recipients learned about the program, secured the applications, asked for and received a grant. And, they all spent varying amounts of time and effort preparing and using new things in their classrooms. Ninety-two percent of the teachers surveyed believed that they had used the grant for something original with them. (It is astonishing how many teachers simultaneously invented the solar-powered windmill.) At least three-quarters of the recipients tried to

disseminate their work. More than half were involved in workshops. Sixty-one percent used their grants to improve a part of the curriculum of their own devising rather than an area of the Board-mandated curriculum. Half actually wrote new curriculum materials, more than a third developed A-V materials, a third have published in the "IMPACT Star." Forty-three percent have visited other classrooms.

Beyond the flurry of opportunities or even responsibilities for participation, IMPACT's administrative arrangements add importantly to the personal commitment felt by the teachers. IMPACT consciously traded central control for individual commitment. The teacher's role was maximized, not the school administration's. Although the principal signed the application, the teacher decided, for example, which camera to buy, from whom, and at what price. IMPACT's central office provided overhead support directly to individual teachers. Eighty-three percent of the recipients sampled said that they had had the freedom to spend the grant as they determined: 100 percent agreed that teachers should "always" or "sometimes" have that privilege. The fidelity with which the proposals were implemented and the other enormously positive outcomes, along with the teachers' pleasure in having, "for once," been treated like professionals are largely attributable to the effect of the participation hypothesis (i.e., that as involvement increases, change increases).

The replicator part of our data disconfirms that hypothesis, although this is a rare instance in which more of a quantum is produced (here, changed behavior) rather than less. Although replicators participate less than developers, the replicators show more change. The explanation may lie in their background characteristics (less maturity, less independence, etc.), and we will return to them as a group in the conclusions.

School administration has always been an ambivalent business split between facilitating the work of colleagues who happen to be teachers and requiring those same colleagues, as subordinates, to do things whether they want to or not. The former "enabling" role saves the teacher for the benefits of autonomous participation, the latter directive role does not. Several administrators were interviewed about IMPACT. One principal had invited two teachers to accompany him to an IMPACT event and he then "let them loose." IMPACT's premise is that improvement begins in the classroom not the office, and that principal's soft sell is probably the modal approach for those administrators who have had anything to do with the program. For our developers' sample, 57 percent reported that their principal had been involved. Only a third of the developers regarded their principal as having been supportive of the grant activities, a figure that is hard to interpret because some administrators probably kept a studied distance to maximize the grantee's learning and other principals probably wanted to but could not help. A frequent and difficult request was for class coverage so that the developer could leave the school, but substitutes are difficult to attract to many schools, emergency coverage must take priority, and parents object to the disruption in instruction which attends substitute teaching. Still, ten percent (6) of the developers reported receiving such extra help from their principals.

Interviews show more administrative involvement, often more assertive involvement. A Brooklyn superintendent, for example, did the usual broadcast distribution of the IMPACT announcement and he kept track of the schools that did not respond and sent them a subsequent personal invitation to take part. In his cabinet meetings he repeatedly praised the principals from schools that had landed grants, a practice which made the other principals uncomfortable but

which has eventually contributed to the district's leading position in raising outside money. This sort of push form the top remains the exception rather than the rule. IMPACT, pointed at teachers, depends for its effect only on teachers.

The clarity of the tasks set by IMPACT is measured by their modesty. No one asked teachers to solve the problem of reading (in fact, the project consciously stayed away from box-scoring grantee's success by gains on standardized achievement tests.) Instead, developers were asked to refine something on which they had already been working and replicators were asked to adopt or adapt an idea whose complexity had already been forestalled by a $300 price tag. In all cases, trial and error led to simplicity.

Throughout their IMPACT involvement, grantees are rewarded for their participation. In the first place, the fact of the grant reinforces the teacher. Its publication and the ceremonies which accompany the award further encourage the recipient as does all the rest of the IMPACT paraphernalia. The "Times" and the "Daily News" have both covered IMPACT. The "IMPACT Star" has regular items congratulating teachers over the signature of the Chancellor and other Board officials. The teachers' union consistently supported the project and endorsed teachers' participation.

Selective reinforcement is the last of the learning theory precepts, i.e., the only behavior that is to be rewarded is good behavior. IMPACT has no way to sanction those teachers who make little use of its grants--or even those who do not do what they proposed. Technical assistance is available from the Division of Curriculum and Instruction but project monitors are not. The money involved ($200 to $300 per person) and the number of grants (499) make monitoring unfeasible and the program's assumptions make it undesirable. Nonetheless, 83 percent of the recipients had talked with project staff and 78 percent felt

that staff to be responsive to their concerns.

Commercially packaged curriculums are frequently shipped to a school with a "teacher's guide" inside the box. At best they will have been preceded by a salesman's visit. The involvement of any given teacher in the decision to "adopt" (nominally) that curriculum can be represented by that person's fraction of a committee vote. The results of that process have been disappointing and contrast clearly with IMPACT's emphasis on the grantee's autonomy and ownership for a modest idea frequently and positively reinforced.

D. User Monitoring

New York's 40,000 teachers have got to generate at least one idea every day that is deserving of support. It is possible to argue that more improvement can be had by exploiting such spontaneous improvement than by trying to force improvement where the teachers have not yet begun to move. The problem is knowing about those promising moments in time to help. The IMPACT grant process is part of that. Deadlines are frequent: applications are relatively simple: decisions are reached and communicated quickly. The publicity about the program helps connect the needy and deserving teacher with some modest help, quickly.

But the greatest contribution to user-monitoring comes from the networking provisions. IMPACT has attempted to require its developers to record their contacts with potential replicators. Of the 61 developers in our sample, 78 percent (48) had completed these logs. Analysis of the logs indicates an average of five contacts per developer, undoubtedly a gross undercount since casual inquiries are unlikely to have been recorded. The recorded entries show that most diffusion occurs within the same grade level, e.g., elementary to elementary (16 contacts within grade level, 59 across). Slightly fewer contacts came from outside the borough where the developer's school was located (113:115).

Every fourth contact followed through with a replicator application and 55 of the 57 who applied subsequently received grants. Overall, IMPACT has funded 252 persons to replicate 97 separate ideas. Thirty-nine percent of the developers have attracted followers who applied for and received replicator grants. This does not include informal replicators who may be adopting the program on their own.

The diffusion of one developer's idea is represented in the following figure.

Insert Figure 4

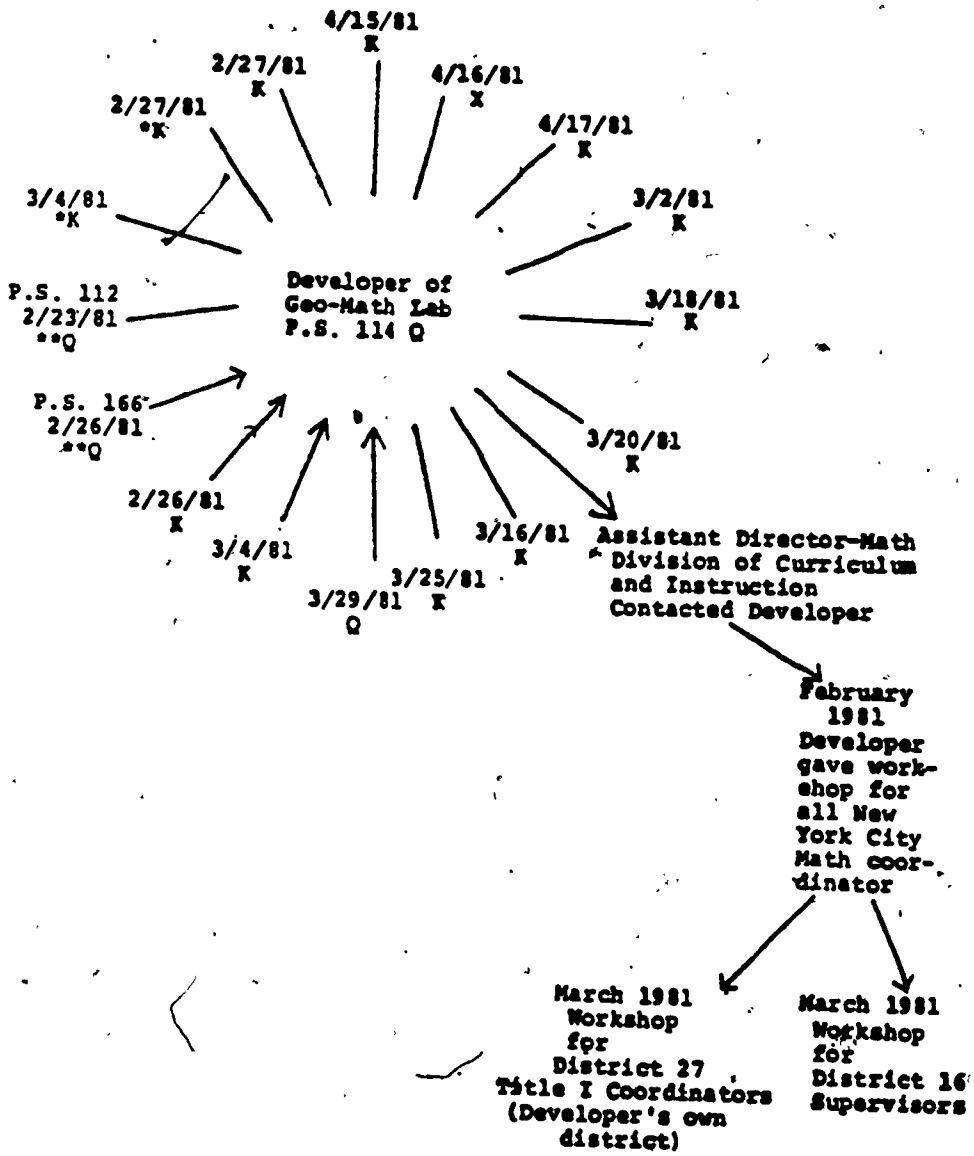
IMPACT was designed to influence teachers but has attracted an administrator audience as well, most notably, Community District One's DIGs program. Those results include 22 applicants from 10 schools: mini-grants to 13 teachers, followed by eight additional proposals for extended support from IV-C funds written by the grantee group. Another unit in the Division of Curriculum and Instruction is using part of the IMPACT process. A coordinator for movement education has held workshops, at the request of the principals, in 36 schools. The developers' logs show that 15 percent of the contacts have come from administrators, a substantial if unintended audience.

E. Disjointed Incrementalism

School change is a messy process completed if at all bit by grudging bit. The attempt to impose pre-determined, holistic algorithms has wasted a great deal of effort and resulted in unwarranted skepticism about the prospects for improvement. Disjointed incrementalism is an alternate, more realistic guide to school improvement. This aspect of the user-driven theory can be applied

Figure 4

One Developer's Recorded Experience



Legend: Dates and boroughs of 16 contacts are illustrated,
K = Brooklyn, Q = Queens, and X = Manhattan
Dates of contacts are all immediately following the distribution of IMPACT II catalog to all NYC schools.

*These contactors applied for IMPACT replication grants.
**These contactors received replication grants.

NOTE: Some more anecdotal evidence is available from the principal of a Brooklyn school that has been-turned around from one of the system's worst to one of the most active. In an interview about the IMPACT process, the principal credited the school's initial IMPACT developer grant with having demonstrated to others that "it could be done." Since, the school has received eight other grants and produced six additional proposals during 1980-81.

at two levels: from the perspective of the individual teacher and from the project perspective.

On our survey evidence, IMPACT seems to fit easily into the lives of teachers. Developers take ideas with which they are already familiar and refine them. Replicator objectives are even more modest, marginal, manageable. The activities are founded on a base of sound practice for a group of motivated and competent teachers. The IMPACT experience has persuaded many of these teachers to keep trying for better instruction.

The social nature of school improvement is beneath all the receptions, ceremonies and other public events in support of networking. In The Nature of Managerial Work, Henry Mintzberg reminds us that the "real" business of meetings takes place before and after the formal agenda when participants buttonhole each other, pursue face-to-face negotiations, follow-up on matters too subtle or too sensitive to commit to paper. IMPACT's cheese-and-crackers budget effectively draws individuals into an alternate, select reference group far more likely to support risk-taking than is the average teacher lunchroom social circle.

Finally, the year-long grant period is preceded by the proposal preparation and competition and followed by the project's continued attention to the grantee in the form of forwarded requests, publicity, and invitations to continue (although out of the teacher's own pocket). Thus, at the individual level, participation is clearly both incremental and disjointed.

The same is true at the project level. Far from promoting any single orthodoxy, the staff is content to let hundreds of flowers bloom. In contrast to the City's School Improvement Project which has targeted particular schools and tried to blanket them, IMPACT works with only some teachers from wherever

they may be. In a system where the average community district will have spent $60 million over the last decade in Title I funds alone, this program's modesty is apparent (a quarter of a million a year, city-wide). Similarly, IMPACT has not tried to transform the school's most listless, hostile, racist, and inadequate teachers.* It has instead worked "at the margin" with already good teachers who could be better. The strategy's acceptability depends on the size of the increment. Is there more to be gained by helping the good be better? Or by helping the average to be exceptional? Or by helping the bad to be average?

Herein lies part of the significance of the replicators. They start the IMPACT process being younger, less experienced, less ambitious for advancement, and with less initiative than the developers. They are that next stratum of teachers more in need of improvement. They end the IMPACT process more likely to have changed those parts of their behavior that are closest to the heart of teaching and learning and more enthusiastic about sharing their good practices. Adding IMPACT's success with the developer increment to its even more substantial accomplishments with the replicators suggests an unusually large contribution to teacher inprovement.

IMPACT's commitment to persist at the problem of teacher improvement is best demonstrated by the Central Board's recent decision to assume half the program's cost, with taxpayer money, next year. Moreover, the staff's willingness to support the rediscovery of the same techniques but by different teachers is also defendable. Central Board flyers and Bureau of School Lunch dieticians notwithstanding, the melancholy reality is that every teacher (each teacher) has to discover "The Problem of Potato Chips" or nutrition education never gets

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*Someone should.

implemented. Thus, at both the individual and the project level, IMPACT is profoundly and appropriately a disjointed incremental event, multi-faceted, modest, and persistent.

V. The Impact of IMPACT

Exxon's yearly quarter of a million could be spent in other ways than through this particular project strategy. It might, for example, directly support eight teachers plus their overhead costs, but added to 40,000, they would not help. Exxon might have spent the same amount on education-related basic research, an area where $250,000 is a kind of minimum chip. But added to the Federal Government's hundred million yearly investment, and given the low probability of backing the "right" innovator, that too is difficult to justify.

Instead, three years of resources have gone into 500 very small grants directly to teachers in a larger context of a systematically developed teacher-to-teacher network. At the beginning of this evaluation, we reviewed the reasons many people have given up on urban schools. New York epitomizes those big obstacles--a unionized, veteran staff, a mammoth bureaucracy, declining resources, etc., etc.--yet the IMPACT program has been remarkably successful. Has it changed teachers?

. Two-thirds of the developers and three-fourths of the replicators use more small group instruction because of IMPACT II, a gain at least twice that reported by the control group of unfunded replicators.

. IMPACT participants are more likely to make better use of other professionals (consultants, team teaching) than are the control group.

. With respect to instructional techniques, 85 percent more of the IMPACT recipients than of the unfunded applicants reported significant change in the

same period. In fact, IMPACT's greatest penetration appears to be in these student-related variables which are at the heart of the teaching-learning process.

. Three-fourths of all IMPACT recipients have tried to disseminate their work. Forty-eight developers have generated 228 inquiries, 57 of those became applicants for replicator grants, and 55 of those won awards.

There is considerable evidence that the IMPACT process makes the most difference with respect to replicators, not developers. This is especially significant because, while innovative projects have always succeeded with the most innovative teachers, others have been vastly more difficult to reach. IMPACT's replicators are from a distinctly different stratum--they are less experienced, less well trained, less confident, less creative, and less motivated. Although they have less dollar support, less recognition, and less participation:

. More replicators than developers report change in instructional practice, and,

. Replicators are more likely than developers to try to recruit others to better practice.

Finally, it is worth noting that IMPACT exists in an era in which "implementation," or getting people to do what they are supposed to do, is a major problem of public policy. Supported through this project, several hundred New York City teachers have solved that problem by accepting the resources (directly) for doing what they said they would do, and then doing that efficiently, completely, faithfully, and without monitoring or supervision.

And that of course explains a large part of the dynamics of the program's success. It has punched all the way through to classroom changes because it

is user-driven. With such important gains from such a modest investment, it is little wonder that New York's Board of Education has been willing to commit its own funds to the program's continued support. Similar strategies will work in other cities, but IMPACT's success is due to subtle causes. When the public is clamoring for "bottom line accountability," focussing on process takes courage. IMPACT is soft and effective, diffuse and efficient, loose and successful. All of that has to do with trusting teachers, supporting their judgement, honoring their commitment and then carefully crafting and nurturing a network to facilitate that.

The importance of the process dimension was sharpened when we compared IMPACT outcomes with those of an otherwise similar program that had not then added the network support feature. In that comparison experience, the money did help teachers and children in the year it was spent and in the classrooms for which it had been targeted. But even when two teachers had similar project ideas, there was no exchange. Teachers who got mini-grants never tried (or had the opportunity) to persuade others to adopt those practices. The innovations paid for by the grants stopped cold when the money ran out. In short, these good ideas helped once and then died. The difference is in the effect of networking, the waves of developers followed by replicators, the availability of some free time for teacher visitations, and the extraordinary supportive structure that buoys up teachers helping others improve their practice.

IMPACT took on the tough problem of teacher improvement in the tough circumstances of New York. It succeeded because it was user-driven. Teacher participation and control makes a difference in the willingness to try out new ideas. Teacher networking provides the vehicle for peer learning and support.

For those who would improve public schools by improving classroom teaching, the lesson echoes something said more than 2,000 years ago.

> When people are subdued by force they do not submit in heart. They submit because their strength is not adequate to resist. But when they are subdued by virtue, they are pleased in their inner hearts, and they submit sincerely.
>
> Mencius
> Chinese philosopher, ca. 300 B.C.