DOCUMENT RESUME

ED 323 611 EA 022 177

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TITLE The Entrepreneurial Restructuring of Public Education: School Incentives and the Merit School Component.
PUB DATE Apr 90
NOTE 40p.; Paper presented at the Annual Meeting of the American Educational Research Association (Boston, MA, April 16-20, 1990).
PUB TYPE Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Achievement Rating; Competition; Decentralization; Elementary Secondary Education; *Free Enterprise System; Goal Orientation; *Incentives; Institutional Evaluation; Merit Pay; Merit Rating; Motivation; Participative Decision Making; *Public Schools; Recognition (Achievement); Rewards; Sanctions; School Based Management; School Choice; *School Effectiveness; *School Restructuring
IDENTIFIERS *Pennsylvania

ABSTRACT

The findings of a pilot study of Pennsylvania's School Performance Incentive (SPI) program are presented in this report. School level incentive policies as elements of the entrepreneurial context of educational restructuring and an organizational model for an incentive-based merit system are also discussed. The study examines the effect of SPI on school outcome measures upon which monetary rewards were contingent and on school personnel behavior. Test performance data from 2,584 schools and dropout rates of 1,132 schools that qualified and did not qualify for rewards were analyzed by year. Personal and telephone interviews with teachers, principals, and superintendents in 13 elementary and secondary schools were also conducted. Analysis of performance data found no evidence of an incentive effect on school performance measures and/or on personnel behavior. Interviews indicated that SPI outcomes may be due in part to insufficient information dissemination and communication and to attitudes of disinterest and hostility. It is concluded that two of the three state program goals have been achieved: annual cash rewards for significant educational improvement; and improved collegial participation, but that the third goal, further school performance improvement, has not been achieved. Comprehensive research, organization, and favorable political attitudes are needed for successful reform initiation. An attached article describes an incentive-based merit system model. Tables and a list of 18 references are included. (LMI)

THE ENTREPRENEURIAL RESTRUCTURING OF PUBLIC EDUCATION: SCHOOL INCENTIVES AND THE MERIT SCHOOL COMPONENT[1]

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April 11, 1990

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[1]Paper presented at the meeting of the American Education Research Association, Boston, MA, April, 1990. This research was supported in part by a grant from the Public Policies Initiatives Fund of the University of Pennsylvania, and in part by the National Center for Education Statistics while the author was a visitor during a period of scholarly leave from his home institution in 1989. The cooperation of the Pennsylvania Department of Education in providing materials, data, and other information about its School Performance Incentives program is also appreciated.

Entrepreneurial Restructuring: Overview

A new strategy for restructuring public education in America is rapidly emerging as state and federal policy makers grapple with the failure of previous top-down initiatives to improve quickly and substantially the performance of our public education system. A remarkable amount of legislation enacted over the past few years has begun to create an entrepreneurial context for public schools as indicated by elements listed in Table 1. The essence of an entrepreneurial context, whether in the private or the public sector, is the opportunity to compete for gains based upon successful performance, while being at risk for losses in the event of failure.[1] There are numerous indications, including recommendations advanced by President Bush and our nation's governors at their 1989 education summit, that the current trend toward the entrepreneurial restructuring of public education will not only continue, but is in fact accelerating.

The evidence supporting the entrepreneurial restructuring thesis advanced here comes especially from legislation pertaining to the elements listed in Table 1 as enacted by a large number of state governments and, to a lesser extent, by the federal government. Boe (1989a) has reviewed much of this evidence and organized it in an entrepreneurial framework. Others have reviewed and commented on these specific entrepreneurial elements. See, for example, Finn (1990) on the focus on school outcome performance, Richards (1990) on rewards for school performance, the National Governors' Association (1989) on school choice and

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[1]See Tucker (1989) for an application of this concept to the operation of a school district.

TABLE 1

Elements of an Entrepreneurial Context for Individual Public Schools

I. Focus on school outcome performances.

II. Specification of school performance objectives.

III. Establishment of school-level incentives.

- A. Rewards for success (in attaining high objectives).
- B. Sanctions for failure (to meet minimal objectives).
- C. Competition among schools:
  1. Public reporting of test results by school.
  2. School choice.

IV. Empowerment of schools to organize and manage instruction.

- A. School-based management and participative decision making.
- B. Deregulation

V. Establishment of assessment systems for measuring school performance in relation to objectives.

VI. Delivery of rewards and sanctions as prescribed.

academic bankruptcy, Lindelow and Heynderickx (1989) on school-based management, and the National Governors' Association (1990) on deregulation.

Whereas legislation until recently has addressed usually one, and at most a few, of the elements identified above, a development currently underway is the packaging of all or most of these elements into an entrepreneurial statewide education system. Late in March 1990, the Kentucky General Assembly enacted legislation (which the Governor is expected to sign) which creates an entrepreneurial system of public education for the entire state. This legislation provides for the setting of outcome performance objectives for individual schools, establishing monetary and other rewards for school improvement and sanctions for ultimate failure, limited school choice, a new performance-based assessment system with public reporting of school progress toward meeting outcome objectives, school-based management, and deregulation (Fisk, 1990, March 30; Walker, 1990, April 4). Similarly, though not yet enacted into law, the Maryland Governor's Commission on School Performance (1989) advanced recommendations to restructure the state system of public education to include the setting of performance standards for schools, the expansion of state-wide assessment of student performance, performance-based school accreditation, monetary and symbolic rewards for successful schools, ultimate closure of unsuccessful schools, deregulation, and rewards and sanctions for school districts dependent upon the performance of its schools.

These state-level developments were preceded by the pioneering efforts of South Carolina, which over a period of years in the 1980s assembled many of the elements of a state-wide entrepreneurial education system. In 1981, it introduced a focus on school outcome performances through implementation of an extensive state-wide student assessment system. Upon enactment of the Education Improvement Act of 1884, monetary rewards for school improvement (as well as for exemplary teacher and principal performance) were instituted. It also included provisions for declaring school systems academically bankrupt and subject to state intervention. Through new legislation in 1989 entitled

"Target 2000," it also adopted a policy of deregulation for high performing schools.

Not only are several states on the road to developing statewide entrepreneurial systems for public education, but the National Governors' Association (Walker, 1990, March 7) has reached a consensus with the Bush Administration on national education goals and objectives. Included in the text of the statement on these national goals is a section on the need to restructure public education because radical changes will be needed to achieve them. The following entrepreneurial strategies are then explicitly identified as under consideration by the Governors and the President as means to this end: a focus on school outcome performances, rewards for success and sanctions for failure, school choice, school-based management, deregulation, and extensive assessment of student performance with regular reporting of results by state (Text of Statement, 1990, March 7). Presumably, the nation will see much more of these entrepreneurial strategies in the years to come. Whether they will lead to educational improvement, of course, remains to be seen.

The imposition of free market principles upon public education, a socialized enterprise dependent upon tax revenues instead of upon financial profits, is a complete break with the past and represents a promising large-scale social experiment. Even the movement of the early decades of this century to reform educational administration in terms of sound business practices (Callahan, 1962) did not entail entrepreneurial principles. The efficient organization and management of educational inputs and processes were then the focus, not the production of outcome performances upon which rewards and sanctions were contingent.

Advocacy for or against the entrepreneurial restructuring of education is not the point here, but rather that the context of public education is being so restructured by state and federal policy makers, and that the process is remarkably far along when all the elements are recognized and organized in the entrepreneurial framework. Although the present movement toward entrepreneurial principles is a radical strategy, it has the potential

(a) to resolve the traditional conflict between top-down and bottom-up approaches to educational reform; (b) to liberate educators from many top-down constraints on educational processes so they can be empowered to assume authority and responsibility for the functioning of schools; and (c) to provide a framework within which policy makers and educators can operate in mutually supportive roles. In short, it is possible that this approach will infuse public education with the dynamism characteristic of aggressive and profitable business enterprises.

With this much in its favor, elements of the entrepreneurial strategy deserve to be developed and tested fully. This paper is addressed to an examination of one such element, merit school incentive policies (MSIPs). Under these policies, substantial and variable monetary rewards have been delivered, contingent upon improvement in outcome performances, to schools in six states (California, Florida, South Carolina, Pennsylvania, Michigan, and Indiana) in the 1980s.

One of the purposes of this paper is to report the findings of a pilot study of Pennsylvania's version of MSIPs named the School Performance Incentive program. Other purposes are (a) to elaborate on school-level incentive polcies as elements of the entrepreneurial context for restructuring public education, and (b) to present a model in which the components of such polices are specified and organized.

School-Level Incentive Policies

As outlined in Table 1, a variety of incentive policies for schools have been created, some offering rewards are for desired performances, some imposing sanctions for failure to meet minimum standards, and some promoting competition among schools. In general, their purpose is to promote improved school performance and/or to maintain acceptable performance, presumably by energizing entrepreneurial initiative. A number of research questions immediately arise concerning whether or not these incentive policies lead to improved performance, how much benefit they produce, their impact on the behavior and attitudes of school personnel, and their unexpected and (perhaps) unwanted effects.

An analysis of these policies, and the design of empirical research, both require a clear definition of the incentive concept. Such a definition is presented next. It is followed by a brief description of current school-level incentive policies.

The Incentive Concept

In defining the concept of "incentive," it is helpful first to distinguish between (a) rewards and (b) incentives. Specifically, the definition of reward includes three elements:

1. A generally desireable object or condition (e.g., food, money, public recognition, positive student feedback, and the like);
2. A specified response or performance; and
3. A principle or rule under which the acquisition of a desireable object or condition follows and is contingent upon a specified response (i.e., a response/outcome contingency).

Based on these three elements, reward is defined as the response-contingent acquisition of a desirable object or condition. In addition to the three elements defining reward, the definition of incentive includes two further elements:

4. Knowledge by the performer of the response/outcome contingency; and
5. A subsequent increase in the strength or quality of the response upon which the outcome is contingent (i.e., an incentive effect).

Based on all five elements, incentive is the prospect of reward which energizes (i.e., increases) goal-directed behavior. This impact on goal-directed behavior is termed an incentive effect.[2]

In addition to the distinction made here between incentive and reward, it is useful to distinguish also between (a) incentive as a noun and (b) incentive as commonly used as an adjective. Specifically, the use of the term "incentive" as an

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[2]For simplicity here, the focus has been on reward-based incentives. A parallel development for sanction-based incentives is made elsewhere by the author, as well as for the related topic of disincentives (Boe, 1989b). In brief, a sanction-based incentive is one in which the prospect of an undesirable object or condition (e.g., a noxious stimulus or loss of money) energizes goal-directed behavior intended to avoid or to escape from the undesirable object or condition.

adjective (as in incentive policy) does not imply that an "incentive effect" has been demonstrated empirically. Given the virtual absence of research on these relatively new policies, it is rare to find such empirical demonstration. Therefore, the use of "incentive" in labeling policies and programs simply means that they are of the type which is intended to produce an incentive effect on performance as distinguished from the actual demonstration of such an effect.

Reward-Based Incentive Policies

As mentioned above, merit school incentive policies (MSIPs) have been implemented in six states. Under these policies, substantial monetary rewards are delivered to schools which improve their performance from one year to the next on achievement tests and other designated indicators. Of these six states, only four (Florida, South Carolina, Pennsylvania, and Indiana) continue to operate MSIPs, while two new states (Louisiana and Texas) are now in the process of developing and implementing them. Individual schools can earn as much as several hundred thousand dollars depending on the nature of the improvement and the particular reward formula. Though the funds disbursed through these policies are incremental to a school's basic funding formula, they follow and are contingent upon improved performance. As such, these policies are entrepreneurial, and they contrast with the traditional grant mechanism which offers incremental funds upon application for activities intended to produce future improvements.

None of these states with merit school policies has yet embraced the profit motive fully, however, in that funds awarded are incremental to a school's basic funding and competition[3] is voluntary. That is, there is no threat of loss of a portion of basic funding if performance declines or if a school simply does not compete. Although these policies accord schools significant decision authority over the use of merit funds earned, some

[3]Depending on the structure of a particular MSIP policy, this could mean either competition with other schools, or competition with (or striving to attain) a performance standard.

states explicitly prohibit their allocation for personal gain, such as bonuses for teachers and other school personnel.

A number of other states, such as Kentucky and Hawaii, have reward-based incentives in the form of recognition, symbols (i.e., flags of excellence), and token financial awards for exemplary school performance. While such devices are also used in commercial enterprises, they are secondary to the profit motive. In education, symbolic rewards may have some entrepreneurial utility in focusing attention on the importance of outcome performance, and in creating status incentives which presumably stimulate voluntary competitive striving.

Incentive policies are not limited to offering monetary and symbolic rewards, however. At least two states (South Carolina and Ohio) have recently enacted legislation which provides for some deregulation for high performing schools. In the future, presumably, schools could earn the reward of regulatory relief by performing at the high level defined. Again, schools are not obligated to strive for this reward.

Another new policy trend is a shift in the basis of accreditation from the traditional evaluation of inputs and processes to the measurement of performance. Louisiana and Texas, as examples, have recently adopted policies by which schools earn accreditation, in part, by demonstrating performance at a specified level. An incentive is thereby created to perform, with the prospect of accreditation as the reward. This incentive may have more impact on improving school performance than other existing reward policies because there is a necessary down side consequence, viz., the ultimate discontinuation of the school or merger with another because of failure to attain the performance standard required for accreditation.

Sanction-Based Incentive Policies

Two sanction-based incentives for improving school performance complement the reward-based incentives. In both instances, the sanctions take the form of state level intervention in the operation of schools which fail to perform at a minimum satisfactory level. The incentive for schools is therefore to initiate

actions resulting in performance at (or above) the required minimum level in order to avoid state intervention and the loss of local control this represents.

The first example of a sanction policy affecting schools is found in federal regulations for Chapter 1 compensatory-education programs issued in May 1989. If a Chapter 1 program operating in a school does not reach its performance objectives, these new regulations provide for the state education agency, along with the district, to intervene by developing and implementing a joint plan for improving the failing program. The sanction is state level intervention, which displaces local control. In addition, the aggregate student performance measures of each Chapter 1 program are made available to the public, thereby creating a further incentive for the school; i.e., to win public approval, or to avoid disapproval.

The second example of a sanction policy affecting schools, but targeted at the district level, is the enactment in recent years of "academic bankruptcy" statutes in eight states. New Jersey and Kentucky have used these statutes to assume full control and management of districts judged by the state to be performing so poorly as to be bankrupt in the academic sense. Note that these actions have been triggered by the failure of school districts to maintain a minimum acceptable level of performance. The sanction is the removal of senior school administrators and school boards, i.e., the loss of local control. The threat of this consequence presumably functions as an incentive to school districts to maintain at least the minimum performance level expected in order to avoid loss of local control.

Competition-Based Incentive Policies

The reward and sanction policies described above are being applied to school performances judged in terms of standards of excellence. For the most part, schools are not in competition with each other. Schools that perform at a designated high level will earn the rewards offered, and schools that perform at or above the designated minimum level will avoid the sanctions

threatened. To respond successfully to these contingencies, entrepreneurial actions are essential. In the business world, however, the essence of entrepreneurship is the successful competition with other firms for customers and profits. While there is some elasticity in the total volume of both, the gain of one corporation typically comes at the loss of another as exemplified in market share proportions.

This fact has not escaped education policy makers who have also been very active in creating two performance incentives based upon competition among schools. These inter-school competition polices are often termed high stakes testing and school choice. In contrast with separate reward and sanction policies, incentive policies based on inter-school competition are double-edged; they simultaneously offer reward for the successful competitors and threaten sanction for unsuccessful competitors. Since schools typically have no option but to be in these competitions, there is no avoiding liability for the consequences linked to performance outcomes.

High stakes testing, in general, refers to the increasing practice of attaching contingencies to aggregate student performance, such as merit salary raises for teachers or principals based on increments in test performance, accreditation for a school based on test outcomes, and a variety of other contingencies reviewed above. High stakes testing also creates competition among schools for status, approval, and public support when test results aggregated by school are released to the public - an increasingly common phenomenon dictated by state policy. The incentive value of "looking good" is represented by the fact of and alarm over "teaching to the test," a frequently reported practice of teachers when results are publicized or used to make important decisions about consequences. Regardless of measurement technicalities, the public will see which schools score high and which score low with respect to each other.

The other inter-school competition policy is choice, whether it be open enrollment, magnet schools, or tuition tax credits. During the past few years, state-wide choice among public schools (with certain restrictions) has been adopted by six states

(Minnesota, Iowa, Oklahoma, Arkansas, Nebraska, and Idaho). In addition, a number of districts (such as Community District 4 in East Harlem) have adopted choice among their schools. School choice polices are intended to create incentives for competition among schools for students and the funding each represents. The reward offered is a gain in students and funds; the sanction is the loss of students and funds. It is expected that some schools will be successful and that others will fail, perhaps even so completely as to result in closing, merger, or takeover.

School choice policies are intended to energize school personnel to entrepreneurial planning and action - all in service to the objective of becoming more competitive for students and funds (i.e., customers and profits). Through this device, the entrepreneurial approach to education exposes schools to the discipline of free-market forces.

Incentive System Model

Since, by definition, incentive requires knowledge of a reward contingency, it is necessary for school personnel to have knowledge of a school incentive program in sufficient detail to be able to strive to qualify for rewards if they choose to do so. In order for an incentive effect to occur, school personnel need to have a clear understanding of the required performances and of the rewards available if the performance requirements are met. With this information, they can first estimate the potential of the school to achieve the required performances and can then decide whether the prospective rewards are sufficiently appealing to be worth the effort and trouble to strive for them. Unless school personnel can resolve these two issues affirmatively, it is unlikely that they will initiate actions designed to improve school performance in expectation of qualifying for available rewards.

A considerable number of specific elements are involved in designing an incentive-based system for improving (or maintaining at an acceptably high level) school performance. A comprehensive model of these elements, as developed by the author, is attached to this paper. While this model includes all desirable elements,

not all are necessary for a school incentive program to have its intended incentive effect. Table 2 (abstracted from the Attachment) lists the minimum essential elements necessary to produce an incentive under MSIPs. Specifically, items one through eight identify the information that should be communicated to school personnel, while item nine, the final essential element, is the actual communication of this information. School personnel will then have sufficient advance knowledge to decide whether or not to initiate school improvement actions in order to qualify for rewards offered.

The comprehensive model of an incentive-based system for improving school performance has two main functions. First, it can be used as a framework to analyze existing MSIPs to detect strengths and limitations, and to help identify possible defects if incentive effects on school performance are not produced. Secondly, the model can be used as a guide to designing or redesigning MSIPs. In the following section, this model is used to analyze Pennsylvania's MSIP entitled the School Performance Incentive program.

Pennsylvania's School Performance Incentive Program

In October 1988, the Commonwealth of Pennsylvania approved Act 110 which included a Section 2595 creating School Performance Incentives (SPI), a policy by which significant and variable monetary rewards were to be delivered to schools which achieved significant gains in one or more of three school outcome performances. The Legislature also appropriated a sum of $5,000,000 to be expended in fiscal year 1989 as monetary rewards under this program. At this time, only two other states, Florida and South Carolina, had similar programs in operation (since 1984). California had also operated a similar program for two years from 1984-86. Programs of this general type are termed here merit school incentive policies (MSIPs).

States that initiate MSIPs with the intent of producing improvements in school outcome performances are embarking on unproven large-scale demonstration programs which seem promising. Unfortunately, there has been no prior effort anywhere to devel-

TABLE 2

Essential Elements for a Merit School Incentive Program

1. Specification of the applicable organizational units (e.g., all public schools in the state).

2. Identification of the relevant performances (e.g., reading and mathematics achievement for elementary schools; dropout rates for secondary schools).

3. Description of the measurement operations to be used for each performance (e.g., standardized reading and mathematics achievement tests; annual dropout rates from administrative records).

4. Designation of the standard for comparison to be used with each performance in triggering rewards (e.g., improvement from year-to-year, as distinguished from absolute performance levels).

5. Designation of the criterion level on each performance measurement which is required to trigger the reward (e.g., improvement of average reading and mathematics test scores by a minimum 10 points from one year to the next; reduction of dropout rate by 1.8% from one year to the next).

6. Specification of the basic parameters of available rewards (e.g., $612 per FTE teacher for each qualifying school, to be delivered in February of the year following the qualifying performance).

7. Specification of the permissible uses of rewards earned (e.g., for instructional improvements as determined by teacher vote, with use for salary increments or bonuses excluded).

8. Specification of the time periods during which the performance-reward contingency apply (e.g., improvement in performance during the 1987-88 school year in comparison with the prior year).

9. Development and implementation of a procedure for early communication of the above information to school personnel so that school improvement actions can be initiated.

Note: Examples taken from Pennsylvania's School Performance Incentive program.

op, test, and refine such programs on a small scale prior to statewide implementation. Even six years after the initiation of MSIPs in three states, little formative or outcome evaluation research has been completed.[4] To date, the only research reported on MSIPs, as defined here, is (a) a cross state comparison of descriptive characteristics of MSIPs by Richards (1989), and (b) psychometric studies of improvements in achievement tests scores as a means to identify schools that might be termed meritorious in this respect (Mandeville, 1988; Tate, Piotrowski, and Im, 1989, March; and Stephenson and Levine, 1987). In general, the results of these studies raise serious questions about the validity of using year-to-year achievement test gain scores to define school merit.

Not only is there an absence of evaluation research on MSIPs, but there is no hard data on the effect of any school incentive policies on the behaviors of school personnel. Research has not demonstrated whether or not such policies energize actions intended to increase the probabilities of reward or to decrease the probability of sanctions. Consequently, those responsible for designing MSIPs can find no specific guidance from prior research, and very little from past practice.

The pilot study of Pennsylvania's SPI reported here is therefore the first of its type to be reported. Its main purpose was to begin to explore the possibility that one MSIP might actually have an incentive effect (a) on school outcome measures on which the monetary rewards were contingent, and/or (b) on the behavior of school personnel. That is, the main questions were whether or not improvements in outcome measures could be attributed to the implementation of SPI, and whether or not school

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[4]The author has received personal communications indicating that evaluation research is currently in progress with respect to MSIPs in Florida and South Carolina. In addition, South Carolina conducted a mail questionnaire survey in 1987 of five teachers and the principal drawn from 330 schools throughout the state selected by a stratified random sampling method. The unpublished results did indicate that a high degree of approval was given to the concept of rewarding schools for outstanding gains in achievement, and that South Carolina's MSIP was viewed as providing additional motivation to schools to improve student achievement.

personnel initiated actions in the schools with the intention of improving outcome performances so as to qualify for SPI rewards. If an incentive effect could be detected, then further questions, such as about its practical significance and cost effectiveness, could be investigated.

Any research that seeks to demonstrate possible incentive effects of SPI needs first to establish whether or not incentive effects were actually intended by the policy. A review of all written materials pertaining to SPI and its implementation by the Governor's Office and the State Department of Education revealed that, in the entire set of relevant materials, there is only one explicit statement of such an intent. This occurred in the first sentence of Section 2595 of Act 110, where it is stated that one of the purposes of SPI is "to evoke further school performance improvement." Thus, it seems clear that SPI was intended by the Pennsylvania Legislature to produce an incentive effect on school performance.

SPI Description

SPI is described here in terms of applicable elements of the merit system model attached to this report.[5] The illustrations of the essential elements listed in Table 2 are drawn from and characterized Pennsylvania's SPI in its first year of operation.

As stated in Act 110, the purposes of SPI are:

1. To establish a program of school performance incentives to reward significant educational improvements;

2. To evoke further school performance improvement; and

3. To foster collegial participation by school employees in improving school performance.

Governor Casey elaborated on these purposes in addressing the National Governors' Association in August 1988, and also stated that "the core of our education reform is to set higher expectations and insist on results by demanding accountability and rewarding success."

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[5]Elements of the model that do not apply to SPI, or do not as yet apply, are those numbered 8, 11, and 12.

The chronology of events from approval to dissemination and implementation of SPI is provided below, and is important because it reveals the order and content of the actions taken by the Commonwealth to disseminate and implement SPI in the field. This is particularly relevant to essential element number nine of Table 2 pertaining to communication of program information to school personnel. The chronology was as follows:

October 13 and 20, 1988: The Pennsylvania Legislature passed Act 110 and the Governor signed it into law.

October 20, 1988: The Secretary of Education informed school district superintendents, school board presidents, and other lead educators in the state, by letter, about enactment of SPI and provided an overview of its principles (along with a number of other new developments in education at the state level).

December 20, 1988: The Secretary of Education informed school district superintendents, school board presidents, and other lead educators, by letter, of details of SPI, and the terms of rewards that were to be made in 1988-89 for improvements in school performance in 1987-88 over a previous base period.

February 10, 1989: The Office of the Governor issued a press release on the first statewide SPI rewards as based on the specifications of the Secretary's December 20, 1988, letter.

February 14, 1989: The Secretary of Education informed school district superintendents, school board presidents, and teacher organization presidents of the rewards earned by qualifying schools in a district. Details of SPI were also given in this letter.

February 1989: The February issue of Fast Forward, the Department of Education's newsletter with wide circulation among educators and others in Pennsylvania, was devoted primarily to a report of the February rewards delivered to schools under SPI, and included a listing of the qualifying schools along with their performance data, and other details. This report also indicated that the Governor was seeking $7.5 million dollars from the Legislature for SPI rewards in 1989-90 - a clear indication the SPI was a continuing program.

April 1989: The April issue of Fast Forward contained a further description of SPI, and compared it with President Bush's newly proposed Presidential Merit Schools program.

September 6, 1990: The Secretary of Education informed school district superintendents and AVTS directors by letter about forthcoming SPI rewards in the amount of $5,000,000 for school performance in 1988-89 in comparison with a prior base period, about the criteria to be used in selecting qualifying schools. This letter also stated that these criteria will be also used for rewards to be made in 1990-91, thereby clearly indicating that SPI was a continuing program and that school performance in the current year would be eligible for rewards to be delivered in 1990-91.

February 13, 1990: The Office of the Governor issued a press release announcing 1989-90 SPI rewards.

February 20, 1990: The Secretary of Education informed superintendents of districts with schools qualifying for 1989-90 SPI rewards by letter of permissible uses of SPI monetary rewards and reporting requirements under SPI.

The school performance indicators on which SPI rewards are based are cut-off scores set by the Commonwealth on the TELLS test of essential reading and mathematics skills[6] for grades 3, 5, and 8; school-specific dropout rates as defined by a standardized system maintained by the PA Department of Education; and scores on and participation rates of high school seniors on the Scholastic Aptitude Test. For rewards delivered in 1988-89, the following improvements in these indicators in 1987-88, over a previous base period, were required:

> (a) An increase from 1986-87 to 1987-88 of at least 10 points in the percentage of students above a cut-off level on tests of essential reading and mathematics skills at grades 3, 5, and 8; (b) reduction from 1986-87 to 1987-88 in dropout rates in grades 7-12 by at least 1.8 percentage points; and (c) <u>either</u> an increase of 8 percentage points in the percent of 1988 seniors (vs. 1986 and 1987 seniors) taking the SAT plus some gain in the both V and Q scores, <u>or</u> an increase of at least 35 points in the sum of the average V and Q mean scores plus some increase in the participation rate (<u>Fast Forward</u>, February, 1989).

The performance criteria for computing the second year SPI rewards (1989-90) were adjusted somewhat as described in the Secretary's letter of September 6, 1989, and were later adjusted

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[6]A standardized test developed by the PA Department of Education.

further by the Department in such a way as to increase the number of schools eligible. The details of these adjusted criteria are not reported here because they are not germane to this report.

The SPI performance criteria were applied to all public elementary, junior and senior high, and vocational technical area schools in Pennsylvania. The computations of performance improvement on the TELLS test and of dropout rates were made by the Department of Education from its data base, while computations of the SAT performances were made by the College Board only with specific permission of each school district. As of the end of March 1990, 95% of districts had provided that permission.

Monetary rewards under SPI were assured for each school that qualified under applicable improvement criteria, and individual schools could qualify for rewards in successive years if one or more improvement criteria were met. The magnitude of the reward a school might earn, if it qualified, was not known in advance. It was computed after the fact by dividing the total amount of SPI reward money available by the number of full-time equivalent (FTE) teachers in schools qualifying under each criterion. This computation determined the dollar amount per FTE teacher. This amount was then multiplied by the FTE teacher count in a qualifying school to compute the reward amount for the particular school. For rewards distributed in February 1989 the amount per FTE teacher was $611.81; in February 1990 this amount was $629.72.

Districts with schools qualifying for SPI rewards were informed that the funds earned could be used in a variety of ways to improve instruction and to involve families of students in school-related activities. SPI funds could not be used to supplant funds that would otherwise be available to a school, and could not be used for salary increments or cash bonuses for school personnel. Act 110 prescribed that the uses of SPI rewards "shall be determined by the regular full-time and part-time school employees in the school through a selection process of their choice." Such plans require the approval of the applicable school board.

Research Methods

The pilot study investigating a possible incentive effect of SPI that is reported here focused on performance data on which SPI rewards for school improvement were based, and on other information obtained by structured interviews with school personnel about SPI. The Pennsylvania Department of Education provided the annual data for each public school in Pennsylvania from which improvement in TELLS test scores and in dropout rates were computed. Specifically, these data included the percentage of students above cut-off scores on the TELLS scales of essential reading and mathematics skills and dropout rates for the years 1986-87, 1987-88, and 1988-89. These data were used to compute trends over these years for rewarded and non-rewarded schools. SAT scores were not in the possession of the Department of Education, since SAT improvement was computed by the College Board, and were not available for this research.

In addition, eight different, but overlapping, structured interview questionnaires were developed for teachers and principals associated with the following groups of schools:

1. Schools qualifying for SPI rewards in 1989 only.
2. Schools qualifying for SPI rewards in 1990 only.
3. Schools qualifying for SPI rewards in both 1989 and 1990.
4. Schools not qualifying for SPI rewards in either year.

The questionnaires for teachers and principals in each category of school were nearly identical. A separate questionnaire was developed for interviews with district superintendents. Copies of these forms are available from the author upon request.

In general, the questionnaires sought information about the extent of knowledge school personnel had about SPI, about when and how they acquired this knowledge, about special school programs in operation related to SPI performance measures, whether or not these were initiated specifically in response to SPI so as to increase the chances of the school qualifying for a reward, about the utility of SPI rewards earned in improving instruction in the home school, and about the value of SPI as a statewide program to improve instruction in the Commonwealth. This information was obtained by face-to-face individual inter-

views with principals, superintendents, and about half the teachers by appointment in the schools, and by telephone interviews with the remaining teachers included in the sample. Interviews were conducted by the author and two graduate assistants during March 1990.

A total of 13 schools in 9 districts in Southeastern Pennsylvania were selected for interviewing. Urban, suburban, and rural schools were included in the sample. After being interviewed, principals were asked to designate two or three experienced teachers who could be interviewed. All school personnel contacted cooperated in the interview process. The number of interviews completed by category is reported in Table 3.

TABLE 3

SPI Interviews Conducted

Persons Interviewed	School Reward Qualification Status				
	Only 1989	Only 1990	Both 89&90	Neither Year	Total
Teachers	2	2	9	6	19
Principals	1	3	4	5	13
Superintendents					2

For the purposes of this limited pilot study, it was not possible to interview either a large sample of school personnel or a representative sample. Consequently, no statistically justified inferences to the population of public schools, principals, or teachers in Pennsylvania are possible. An effort was

made to sample from a variety of schools and districts, and to greatly oversample schools that had qualified for SPI rewards. On the whole, only about 7% (or 14% in two years) of Pennsylvania public schools qualified for SPI rewards in each of the two years they were delivered. This group represented 8 of 13 schools in the sample because the intent was to learn about SPI's impact at the school level where it was most likely to have occurred, i.e., in the schools that earned rewards.

Performance Data Results

TELLS data are based on 2584 schools for which complete test data were available for each year of the three-year analysis period.[7] For each school, the mean cutoff percentage score (i.e., the percentage of students in a school above a cut-off level) for reading and math across all grade levels present was computed for each of the three years. The median of these mean percentage scores are reported in Table 4, by year.

Dropout data are based on 1132 schools for which complete dropout data were available for each year of the three-year analysis period. All schools without a dropout percentage in each of the three years were deleted from the original data set of 1178 schools. Median dropout percentage scores are reported in Table 5, by year.

Medians as the measure of central tendency were selected because of skewness of the frequency distributions of the percentage scores. The TELLS scores were moderately skewed negatively, while the dropout scores were severely skewed positively.

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[7]TELLS scores are generally available for grades 3, 5, and 8, for each of the three years. A particular school could have one, two, or all three of these grades. If any one TELLS score (either reading or math) at any one grade level was missing from the raw data set for a particular school in any of the three years, that grade level was excluded from the data for that school. The grade levels for which complete data were available for a school was retained. In the event a particular school did not have complete test data for any of the three grades across the three years, it was excluded from the data set. A total of 73 schools were thereby deleted from the original data set of 2657 schools with TELLS.

TABLE 4

Median School Percentage Above Cut-off Level on TELLS Tests

School Group	N	Median Percentages		
		1986-87	1987-88	1988-89
1. All Schools	2584	84.0	86.0	84.5
2. Received 1989 Reward	124	68.9	86.7	79.7
3. No 1989 Reward	2460	84.5	86.0	84.5
4. Received 1990 Reward	169	78.0	84.5	92.0
5. No 1990 Reward	2415	84.3	86.0	84.0

TABLE 5

Median School Dropout Percentages

School Group	N	Median Percentages		
		1986-87	1987-88	1988-89
1. All Schools	1132	1.0	1.1	1.2
2. Received 1989 Reward	39	5.4	3.3	3.9
3. No 1989 Reward	1039	.9	1.0	1.1
4. Received 1990 Reward	23	6.1	5.8	3.7
5. No 1990 Reward	1109	.9	1.0	1.1

Since the data of Tables 4 and 5 pertain to the entire population of public schools in Pennsylvania, tests of statistical significance are not needed or appropriate.

Since SPI was approved by the PA Legislature and Governor in October 1988, the prior performance changes from 1986-87 to 1987-88 were independent of the program. As shown in Tables 4 and 5, for all schools combined, there are increases in both the TELLS and dropout percentages from the first to the second year (increases of 2.0% and 0.1% respectively). The schools qualifying for reward on both indicators posted substantial improvements in 1987-88 for unknown reasons, but one can surmise that improvement was partly due to regression toward the mean and partly due to actions being taken by schools and districts to improve these performances independent of SPI. For example, school-specific TELLS percentage scores by had been published by the Department of Education for the first time in 1986-87. Interview data suggests that some schools were stimulated to action to improve these scores by adverse publicity received by virtue of this publication.

The chronology of events in the implementation of SPI presented in the prior section revealed that the initial information about its terms reached different sectors of the education establishment in the period from December 1988 to February 1989. It is therefore unlikely that many schools could have mounted programs on such short notice to affect TELLS and dropout scores in the then current year, 1988-89. Thus, the improvements seen in the 1990 reward groups in Tables 4 and 5 are not likely to have been caused by the introduction of SPI - even though they served to qualify for SPI rewards after-the-fact.

As shown in Tables 4 and 5, for schools rewarded in 1990, the observed changes in performance from 1987-88 to 1988-89 actually mimic quite closely the changes observed for schools rewarded in the prior year when SPI could not logically have been a motivating factor. For example, the median percentage dropout decline for the schools rewarded in 1990 for 1988-89 performance (a decrease from 5.8% to 3.7%) is virtually the same as that for the group of schools rewarded a year earlier (a decrease from

5.4% to 3.3%). For the comparable TELLS percentages, the improvement was even less for schools rewarded in 1990 than that for schools rewarded in 1989 (an increase from 84.5% to 92.0% in 1990 rewardees vs. an increase from 68.9% to 86.7% in 1989) - a finding that can be attributed to a less stringent reward criterion in 1990.

In conclusion, these data provide no evidence that SPI served to "evoke" improvements in performance measures in 1988-89. This is to be expected because of the lack of time available to schools to institute and operate special programs if they wished to do so. The performance data from 1989-90 will be a much better test of whether or not the prospect of SPI rewards produces an incentive effect on performance measures.

Interview Data Results

The findings from the interviews bearing upon the main issues addressed by this pilot research are summarized here. Interviews with personnel from schools that qualified for SPI rewards in both 1989 and 1990 are considered first because they have had most exposure to SPI principles and benefits. Three of four principals interviewed from these schools (see Table 3 for a listing of interviewees by category) reported they knew the performance criterion their school had qualified under, but only one reported knowing how the reward amount was calculated. Three of the four reported that they had a special program in place during 1987-88 that was relevant to the SPI criterion. Only one expected that SPI rewards would be made again in 1990, but none knew the performance criteria nor the reward formula that might be used. However, all four reported a special program related to the relevant SPI criterion was in place in 1988-89, but not because of the prospect of a SPI reward.

These same four principals first learned about 1990 SPI rewards upon receiving notification in February 1990 that their schools had qualified, even though their superintendents had received notification by letter dated September 6, 1989, that rewards would be made in 1990 and again in 1991. These principals did not know if SPI rewards would be made in 1991 and had

not initiated programs in an effort to qualify for such rewards. They reported having too little information on the nature of SPI to do so, and one expressed no interest. Their assessments of the utility of SPI rewards to improve instruction in their schools varied widely, as did their overall assessment of SPI as a valuable statewide program.

The one principal interviewed whose school qualified for a SPI reward in only 1989 did have a relevant program in place during 1987-88 (the year the reward pertained to), but was very negative in his assessment of the value of SPI and would not make an effort to try to qualify for possible future rewards.

The three principals interviewed whose schools qualified for SPI rewards in only 1990 had no specific information about the program from the time of the first round of rewards in 1989, did not expect SPI rewards to be made in 1990, had not instituted school efforts to qualify for SPI rewards, but were well informed about SPI principles after receiving the 1990 rewards. Only one of these three principals expected SPI rewards to be made again in 1991, and none had instituted actions in an effort to qualify for future SPI rewards (two were negative about doing so). These principals expressed mixed views about the utility of SPI rewards, and about its value statewide.

As might be expected, the five principals interviewed from schools not qualifying for SPI rewards in either year knew little about how SPI operated, except that two had concluded in 1989 that the scores of their schools were too high to qualify. The five were disinterested in the SPI program and had initiated no SPI-related actions in their schools. As a statewide program, their views of SPI were mixed ranging from excellent to ineffectual.

With respect to the teacher interviews, the amount of specific information about the SPI program (its timing, criteria, and basis for setting the amount of reward) ranged from little for teachers in schools that had qualified for rewards in both 1989 and 1990, to virtually nothing for teachers from schools that had not qualified for rewards in either year. The nine teachers interviewed from the former group had a mixed view of

the utility of SPI rewards for improving instruction in their schools, and seven of the nine held a negative view of the value of SPI as a statewide program.

The four teachers interviewed from the schools which had qualified for SPI rewards either in only 1989 or in only 1990 were likewise quite mixed in their assessment of the utility of dollars earned through this program. Of course a few of these teachers were quite pleased with having an opportunity to spend discretionary funds on instructional improvement, as were some of the principals.

Finally, the two superintendents interviewed were not well informed about the details of the SPI program, even though schools in their districts had qualified for rewards. Both indicated that no programs had been initiated in the schools of their districts in an effort to qualify for SPI rewards. They did not know for sure if SPI rewards would be made again in 1991. One was moderately positive about the value of SPI statewide, while one was negative.

The main purpose of this pilot study was to explore the possibility that the SPI program might produce an incentive effect on school performance measures and/or on the behavior of school personnel. In the prior section on performance data, it was concluded that there was no evidence in the data of such an effect, and that it was too early to expect one. For all practical purposes, the current school year is the first full year in which school personnel could have implemented special initiatives designed to improve school performance to qualify for future SPI rewards. The interview data, however, give no significant evidence of this. All 15 principals and superintendents interviewed indicated that no initiatives were currently in operation at the school level for the purpose of qualifying for future SPI rewards, and some were quite negative about even considering this. More often than not, however, schools that had qualified for SPI rewards reported having in operation, during the year in which the rewarded improvement occurred, special programs relevant to SPI criteria and attributed success to these initiatives.

With respect to the schools in which interviews were conducted, there seems to be two main reasons for the apparent failure of SPI to, as yet, "evoke further school performance improvement," as ACT 110 intends. The first reason relates to point 6 of the attached merit system model which concerns the communication of the terms of this incentive program to those in the schools who are in a position to develop and operate programs in response to SPI. These individuals do not seem to have enough information about performance specifications to determine whether or not their schools might actually be able to improve scores to the extent required if they were to try. Likewise, they do not have enough information about the amount and certainty of the prospective rewards to allow them to determine whether or not they are worth the effort that may be required to attain them. Given the myriad pressures of everyday life in the schools, SPI does not seem to have gained much attention and interest.

The record of communication from the Commonwealth to district superintendents and to the educational community indicates that sufficient information was disseminated, by September 1989 at the latest, to understand the terms of the SPI program. However, these efforts to implement a complex new program may have been insufficient, especially considering that SPI entails uncertainties about future funding, performance criteria, and reward calculations - all of which make it difficult to grasp. If school personnel understood SPI, they would realize it was a moving target and might conclude it was not worth tracking, at least at the present level of funding.

Since the enactment of SPI legislation and funding did not include any appropriations earmarked explicitly for management and implementation, it appears that the Department of Education simply, but precisely, communicated the terms of the program to district superintendents and local school boards, apparently in the expectation that they would pass the information on to school principals, and through them to teachers. The limited evidence gathered here suggests that principals knew very little about SPI, took little action on the modest information they had (other than that pertaining to the spending of SPI rewards under the

constraints of ACT 110), and did not pass much information on to their teachers.

In short, it does not appear that the incentive aspect of SPI has yet been implemented in a significant sense. Clearly the reward aspect has been implemented in that money has been awarded to schools which demonstrated improved performances - the first purpose stated for SPI in Act 110. Attainment of the incentive purpose of SPI, if it is even possible, may well require a major program implementation effort.

As indicated above, there are at least two reasons for no discernable incentive effect, as yet, of the SPI program. The second reason is that a considerable proportion of school personnel interviewed expressed disinterest in or hostility to the concept of using monetary rewards to instigate school improvements. Many thought it a fundamentally wrong idea.

Though the extent of this and other sentiments of school personnel statewide can not be inferred accurately from this pilot research, it is definitely there. Fortunately, it affects neither the process of determining what schools meet the numerical reward criteria and the distribution of reward funds, nor does it seem to affect the spending of these monies in the collegial manner intended by Act 110 (these rewards are "gratefully received"). But it may well affect the degree to which school improvement initiatives are evoked by the prospect of earning the rewards.

SPI Conclusions

It seems clear that, of the three purposes of Act 110 which established SPI in 1988, two have been achieved thus far. The Department of Education has operationalized "a program of school performance incentives to reward significant educational improvements," in the sense that improvements from year-to-year in significant education indicators at the school level are rewarded with cash payments on an annual basis. The necessary data base monitoring performance indicators is being maintained; the computations of school improvement are being made; and the reward payments are going out annually.

The purpose of fostering ". . . collegial participation by school employees in improving school performance" is also being accomplished in the sense that SPI reward funds, from all appearances, are being spent at the school level with collegial participation. The Department of Education has informed district superintendents by letter about the regulations governing the expenditure of SPI funds, and about the reports due to the Department by October 31, 1989 and 1990 for expenditure of 1989 reward monies. The Department has created a questionnaire to be submitted by Districts along with expenditure reports which solicits information required by Act 110. Consequently, this pilot research has not focused on this aspect of SPI.

The most difficult purpose of Section 2595 of Act 110 ". . . to evoke further school performance improvement" (i.e., further to that rewarded under the first purpose) does not yet appear to be attained, at least insofar as the data generated by this research suggest.

Beyond the three purposes specified in the statute, additional benefits of SPI may be gained. This program may produce a benefit in terms of enhanced positive public visibility for education in the press and other media. Pipho (1989), for example, reported that an incentive policy in West Virginia designed to deter dropping out of school (by withholding drivers licenses from school dropouts) is viewed by the public "as an honest attempt to get students and parents to take education seriously" (p. 503). In a similar vein, Governor Casey has stated that the core education reform in Pennsylvania is to set higher expectation and insist on results. Systematic survey research could help determine if this potential benefit of SPI is being attained.

As a complex new statewide program, SPI should be operated for a number of years before evaluation research is expected to produce definitive findings. Similar programs in other states have operated for at least six years before such research has been commissioned. SPI needs time and nurturing before we will able to see if it is capable of evoking "further school performance improvements."

Entrepreneurial Restructuring: Discussion

As the educational restructuring process now stands, there is little hard evidence, including the research reported here, demonstrating the efficacy of individual school incentive policies that may be incorporated in an entrepreneurial system of public education, and there is no evidence on the efficacy of such a system as a whole. The findings of this research suggest that designing and implementing effective and respected school incentive policies may be very difficult and costly. Unless these deficiencies are addressed, the promise of this strategy may well be lost.

The piecemeal implementation of different elements of an entrepreneurial system in many states, and in several particular school districts, provides valuable opportunities to study each element in isolation of the others. In a sense, natural experiments are occurring in which critical variables are manipulated and available for study. The fundamental question, of course, is whether entrepreneurial strategies produce improved educational outcomes as intended. If so, what collateral effects do these strategies have on the school processes and climate? And are they cost effective?

Another issue is the reaction of school personnel to incentive policies created to stimulate improvement in school performance. Will they be energized to make a school competitive without the prospect of personal financial gain (as presently excluded in certain merit school programs)? If personal financial gain is a requisite, how much gain is needed to produce results? As a second example, will academic bankruptcy policies stimulate poor performing districts to improve by using only local talent and resources, or is technical assistance and/or additional resources from the state required?

As usual, the list of unanswered questions vital to framing viable policies is frustratingly long. It is not surprising, however, for policy makers to create initiatives based on preconceptions, good intentions, and expediency, and it is good that they often do. New solutions to problems can thereby be put in operation and observed. They can lead to positive results, as

has Head Start. However, when a new program such as Head Start is initiated, its effectiveness is typically studied through evaluation research. With respect to current entrepreneurial initiatives, if policy makers do not move quickly to establish a research base underpinning their innovations, they will not reap full benefit from ongoing field experience and results in refining and extending their policies. Though providing valuable opportunities for analytic evaluation research, the fact that elements of an entrepreneurial public education system are being enacted piecemeal by states and districts is also a serious limitation. It may be found that some individual elements alone have no beneficial effect on school performance. If combined with others, however, they may work as intended.

In conclusion, the entrepreneurial restructuring of the context of public education in America is well underway, and holds promise for liberating the talent and energy of educators to produce better student outcomes. Since each major element of this strategy is controversial, the effort must be well organized, politically popular, and buttressed with credible research to survive long enough for its promise to be demonstrated in practice.

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Attachment

INCENTIVE-BASED MERIT SYSTEM FOR EDUCATIONAL INSTITUTIONS: A COMPREHENSIVE MODEL

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March 25, 1990

Introduction

An incentive-based merit system for educational institutions is defined as one in which prescribed rewards are provided to an organizational unit (such as a school) by a higher policy authority, contingent upon successful completion of specified performances. Such a system becomes incentive-based when the performance contingency is communicated in advance to the unit so that it has an opportunity to adjust its behavior as needed to qualify for subsequent rewards. Thus, a reward is not an incentive unless it energizes effective behavior leading to its acquisition.

What distinguishes an incentive-based system is advance knowledge that particular performances are linked by policy to specified rewards. If the performances specified are achieved, the reward will be forthcoming. This is distinguished from a grant program (sometimes called incentive grants) which provides a monetary sum contingent upon submission of an acceptable application. The grant award is then intended to facilitate the attainment of future performances. Likewise, a merit system is distinguished from an incentive-based accountability system in which sanctions are imposed for failure to perform.

Advance knowledge of a reward contingency is intended to energize adaptive behavior which results in organizational performance maximizing available rewards. Such happenings, when they occur, are incentive effects. Thus, a system designed to produce them can appropriately be labeled "incentive-based" because the incentive aspect is the distinguishing characteristic.

A number of states now offer schools and districts incentives for restructuring, reforming, and improving their operations. Likewise, a number of states offer incentives to schools and districts to consolidate and to share resources. Incentives used in this way are a form of encouragement to make organizational changes regarded as constructive, but optional, by state authorities.

The basic elements of a comprehensive incentive-based merit system are described below in terms of a performance unit, such as a school or district, with the state education agency as the policy authority. The description presented is for institutional incentives as distinguished from individual incentives. However, the basic components can easily be adapted to a system for the performance of an individual such as a student or teacher.

It is not expected that any merit system will have all the elements described, nor is it essential that they all be present. The model is designed to include as many elements as might ideally be useful, and can be used as a framework in analyzing existing or proposed merit systems. It can also serve as a framework for the design or redesign of such systems.

Basic Elements of the Model

1. Establishment of educational goals and objectives.

2. Definition of measurable performances (i.e.,indicators) relevant to established goals and objectives.

   a. Specification of the applicable organizational units (e.g., districts, schools, classrooms).

   b. Identification of multiple types of performances.[8]

   c. Development of measurement operations for each performance specified.

   d. Designation of a standard for comparison to be used with each performance in triggering rewards.

      (1) Absolute standard

      (2) Comparative standard

         (a) Comparison of unadjusted performance measures

            - with all units

            - with units of similar characteristics

         (b) Comparison of all units based on the difference between statistically-predicted expected performance and actual performance.

      (3) Improvement standard (e.g., from one year to the next)

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[8]The performance types and criterion levels set should be sensitive to the circumstances and capabilities of the units to which they apply.

e. Setting of criterion level(s) on performance measurement scales which trigger rewards, perhaps with different criterion levels for different degrees or types of rewards. Interim steps, such as provision of technical assistance and other support, may also be activated at specified criterion levels in an effort to promote improvement.

3. Definition of rewards contingent upon performance.[9]

   a. Basic parameters.

      (1) Type (e.g., money, recognition, deregulation, etc.)

      (2) Magnitude (e.g., amount, duration, intensity, etc.), or formula for computing magnitude.

      (3) Probability (e.g., probability of 1.0 indicates each unit can be certain of receiving the reward under the performance terms specified, or probability of 0.1 indicates the chances are only one in ten of receiving the reward)

      (4) Delay (i.e., the time interval between the performance and reward delivery)

      (5) Single-shot vs repetitive (i.e., whether the reward is available only once, or is available repeatedly whenever performance is measured)

   b. Specification of regulations applying to the disposition of material rewards earned. If, for example, money is earned as a reward, what guidelines and restrictions apply to its expenditure, by what process are spending decisions made, and who or what group has the authority to make such decisions?

4. Specification of the time period(s) in which the performance-reward contingency apply. In the event that an improvement standard is used to determine qualifying performances, the base

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[9]Among others, two special conditions necessary to produce an impact on performance are:

(1) The criterion level of performance set must appear to be attainable to the performance unit, and

(2) The characteristics of the reward expected (as specified by its five parameters) and the regulations governing it disposition must appear to be sufficiently appealing to the applicable performance unit to justify the level of effort and organizational stress required to attain the criterion level of performance required.

time period to be used in computing improvement must also be specified.

5. Development, installation, and operation of an assessment system to measure the performances on which rewards are contingent. A useful assessment system will also monitor multiple inputs and context data, as well as multiple performance outputs, so that exceptional performances can be related to antecedent variables. Problems can then be addressed and the bases of success can be identified and perhaps replicated.

6. Communication of the detailed terms and conditions of the incentive program to the applicable performance units in advance of its initiation so that the units have adequate time and opportunity to plan and implement actions that are designed to be effective in qualifying for available rewards. It is important that this information reach at least key personnel who have a role in the planning, implementation, and maintenance of the actions initiated. The terms and conditions should include, as a minimum, the following elements:

   a. Specification of the applicable organizational units.

   b. Identification of the relevant performances.

   c. Description of the measurement operations to be used for each performance.

   d. Designation of the standard for comparison to be used with each performance in triggering rewards (see 2.d. above).

   e. Designation of the criterion level on each relevant performance measurement which is required to trigger the reward.

   f. The basic parameters of available rewards (see 3.a. above).

   g. Regulations governing the disposition or expenditure of material rewards, if any.

   g. The time periods during which the performance-reward contingency apply.

7. Feedback during the performance period to applicable units to insure that the performance-reward relationship:

   a. is understood

   b. is believed (i.e., that it will actually happen)

   c. is remembered during the performance period

8. Optional but desirable at this stage, early identification of performance units struggling or failing to improve performance. The policy authority may provide technical assistance and other support designed to help the performance unit.

9. Based upon the performance requirements set and the results obtained through the assessment system, delivery of the specified rewards.

10. Reporting performance data, rewards, and technical assistance provided at the level of the performance unit, along with analyses and the range of responsible interpretations, to parents, teachers, administrators, policy makers, mass media, and the public. Though comparable information should be reported to all constituencies, the language and technical detail of the reports should be tailored to the particular audience to enhance understanding.

11. Assist organizational units in interpreting and applying assessment data in efforts to improve schooling.

12. Evaluate and improve the incentive system based on examination of technical adequacy, results obtained, and perceptions of various constituencies.