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NEW DIRECTIONS IN INSTRUCTIONAL PRACTICES.

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BECAUSE THE LAST DECADE HAS BEEN A PERIOD OF MORE INTENSE EDUCATIONAL INNOVATION THAN ANY PREVIOUS PERIOD IN HISTORY, A NATIONAL STUDY WAS MADE TO DETERMINE HOW SECONDARY SCHOOLS HAVE CHANGED. A QUESTIONNAIRE WAS DISTRIBUTED TO 10,266 REGIONALLY ACCREDITED HIGH SCHOOLS IN THE UNITED STATES, AND 7,400 RESPONSES WERE RECEIVED. THE SAMPLE POPULATION INCLUDED 85.5 PERCENT PUBLIC, 4.2 PERCENT PAROCHIAL, 6.5 PERCENT PRIVATE RELIGIOUS, 2.8 PERCENT PRIVATE NONRELIGIOUS, AND 0.7 PERCENT GOVERNMENT AND OTHER SCHOOLS. THE RESULTS OF THE STUDY ARE PRESENTED AS TABLES CATALOGING THE MAJOR INNOVATIONS BY PERCENTAGE OF SCHOOLS WHICH ADOPTED THE INNOVATIONS, STATE, ENROLLMENT, EXPENDITURE, TYPE OF SUPPORT, AND AREA SERVED. BRIEF ATTENTION IS GIVEN TO THE ABANDONMENT OF INNOVATIONS, AND INTERPRETATION OF THE DATA IS PROVIDED. THE AREAS FOUND TO BE OF MOST SERIOUS CONCERN IN INNOVATION--(1) ATTITUDES TOWARD LEARNING, (2) STAFF DEPLOYMENT, (3) FOCUS ON THE INDIVIDUAL, AND (4) MEANS OF MAKING LEARNING INTERESTING AND AUTHENTIC--ARE DISCUSSED. SOME ATTENTION IS GIVEN TO THE SPEED WITH WHICH INNOVATIONS ARE DIFFUSED AND TO THE ROLE OF ADMINISTRATORS AS AGENTS OF CHANGE. (TT)

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# NEW DIRECTIONS IN INSTRUCTIONAL PRACTICES

by

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Prepared for

THE IOWA CENTER FOR RESEARCH IN SCHOOL ADMINISTRATION

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# NEW DIRECTIONS IN INSTRUCTIONAL PRACTICES

The last decade has been a period of more intanse change in the schools than any previous period in history. Sparked by Sputnik, the schools' critics, and a public demanding excellence, the changes and innovations have created a remarkably different kind of school in several com munities across the country. How frequently have these innovations actually been adopted, are they always retained once installed, and what is the efficacy of an innovation - does it make any difference in student behaviors?

## A National Inventory of Innovation

In 1966-67 a study was begun as a joint project of the North Central Association and the Kettering Foundation that sought answers to these questions. All regionally accredited high schools cooperated in carrying out a national inventory of 27 selected innovations.[1] The "Secondary School Innovation Scale" was distributed to 10,266 regionally accredited high schools in the United States and in a few overseas locations. This population is less than half the total number of secondary schools and represents generally the larger and better financed schools. Table 1 describes the responding schools according to four characteristics.

Approximately 7,400 high schools, or 73 per cent, responded but spoiled instruments or inconsistent responses excluded several so that a total of 7,237 schools were included in the computer analysis of the data. This rather substantial return permits observed differences to be regarded as real differences. That is, where means or percentages appear, no tests of statistical significance were necessary.

For the purposes of this study, innovation was broadly defined as any practice not generally in use. Specific definitions were provided for each innovation included such as "One or more classes use the Physical Science Study Committee materials as the basic reference in physics." Other practices were selected for ease of interpretation, distribution among curriculum, technology and organization, and general appropriateness for all schools. Of the 27 used, only the "school-within-a-school" was included as one that many schools might not adopt unless they had large enrollments. BSCS biology was not included because it was known to have been widely adopted, and the concept of independent study was omitted because of the interpretation problems. Finally, no social studies curricula were included because of the limited number of schools that have adopted any one of several new programs that are being or have been developed.

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[1] A complete report of the study, along with descriptions of several exemplary schools, has been published. See Cawelti, Gordon, "Innovative Practices in High Schools," Nation's Schools, 79, (April, 1967), pp. 56-74.

TABLE 1

PERCENTAGES OF RESPONDING SCHOOLS ACCORDING TO ENROLLMENT, EXPENDITURES, TYPE OF SUPPORT, AND AREA SERVED

| | Enrollment | | Support |
|---|---|---|---|
| % | Response Alternatives | % | Response Alternatives |
| 8.5 | Fewer than 200 | 85.8 | Public |
| 26.4 | 200-499 | 4.2 | Parochial or diocesan |
| 45.6 | 500-1,499 | 5.5 | Private, religious affiliated |
| 15.8 | 1,500-2,499 | 2.8 | Private, not religious affiliated |
| 3.7 | Over 2,500 | .7 | Government, other |

| | Per Pupil Expenditure | | Area Served |
|---|---|---|---|
| % | | % | |
| 16.2 | Less than $350 | 8.6 | City of over 400,000 |
| 40.1 | $350-$499 | 33.5 | Community of 5,000-399,999 (not suburban) |
| 28.0 | $500-$649 | 23.1 | Suburban-within urban fringe of central city |
| 15.7 | Over $650 | 21.0 | Small town of under 5,000 |
| | | 13.8 | Rural |

## Results

The findings indicate that substantial change has occurred in the last decade. Over a third of the schools reported use of the new curricular materials in physics, chemistry, and mathematics, and doubtless this would be well over half the schools in the case of biology. The humanities course has shown remarkable growth. In the period from 1964-66, over 800 high schools reported adopting a unified course in art, music, literature, history, and philosophy. See Table 2 for the percentages of schools reporting having adopted or abandoned each of the innovations included in the study.

In the area of technology, use of the direct or audiolingual approach in teaching foreign languages seems well established with almost three fourths of the schools having installed the laboratory equipment needed. Television instruction is used by only 16.5 per cent of the schools and the periods of adoption reported indicate that, as for program learning, interest has leveled off at present. (Schools were asked to indicate the period during which each innovation was adopted or if they plan to adopt any next year.)

Team teaching has been adopted by 41 per cent of the schools. The National Association of Secondary School Principals' Staff Utilization Project is now over ten years old, but some 2,000 of the 3,000 high schools using team teaching reported adoption during the 1964-66 period. Other innovations adopted heavily during the last three years include use of teacher aides or paraprofessionals, honor study halls, flexible scheduling, and work-study programs.

## State Variation

Table 3 indicates substantial variation among states in the average number of innovations adopted by the schools. Whereas the national average was about 6 of the 27 practices, the innovation rates were much higher in California, New York, Washington, Connecticut, and Rhode Island, where 8 innovations were more typical. The average number of adoptions per school was about four or less in such states as Arkansas, Louisiana, Mississippi, South Dakota, and West Virginia. In these states, a high proportion of the schools were spending well under $500 per pupil annually.

The rate of adoption seems to be associated with per pupil expenditure, type of community, and enrollment. Table 4 reveals that high schools serving primarily rural area students averaged about four innovations compared to almost eight for suburban area schools. A close relationship between expenditure and innovation was also observed - higher expenditures resulted in more innovations having been adopted.

TABLE 2

PERCENTAGES OF SCHOOLS REPORTING AS HAVING ADOPTED AND ABANDONED THE 27 INNOVATIONS
(n=7,237)

| Innovation | % of Schools Adopting | % of Schools Abandoning |
|---|---|---|
| **Curriculum** | | |
| 1. P.S.S.C. Physics | 43.2 | 3.2 |
| 2. C.H.E.M. Study Chemistry | 38.7 | 1.6 |
| 3. S.M.S.G. Mathematics | 36.4 | 6.1 |
| 4. Humanities Course | 17.7 | * |
| 5. C.B.A. Chemistry | 9.9 | 2.7 |
| 6. E.S.C.P. Physical Science | 9.7 | * |
| 7. U.I.C.S.M. Mathematics | 4.5 | * |
| 8. S.S.S.P. Physical Science | 3.5 | * |
| **Technology** | | |
| 9. Language Laboratory | 71.3 | 1.0 |
| 10. Programmed Instruction | 28.8 | 4.9 |
| 11. Data-Processing Equipment | 28.3 | * |
| 12. Television Instruction | 16.5 | 3.8 |
| 13. Simulation or Gaming | 15.4 | * |
| 14. Teaching Machines | 12.7 | 1.7 |
| 15. Telephone Amplification | 5.3 | * |
| **Organization-Miscellaneous** | | |
| 16. Work-Study Program | 48.7 | 1.6 |
| 17. Team Teaching | 41.0 | 4.3 |
| 18. Student Exchange Program | 36.5 | 1.7 |
| 19. Cultural Enrichment Program | 31.0 | * |
| 20. Teacher Aides-Paraprofessionals | 29.1 | 1.3 |
| 21. College Credit Courses in High School | 28.0 | 1.4 |
| 22. Honor Study Halls | 23.5 | 6.0 |
| 23. Flexible Scheduling | 14.8 | * |
| 24. Extended School Year | 5.1 | * |
| 25. Nongraded School | 4.7 | * |
| 26. Optional Class Attendance | 4.0 | * |
| 27. School-Within-a-School | 2.7 | * |

* Less than one per cent

TABLE 3

AVERAGE NUMBER OF INNOVATIONS REPORTED

| | | | | | |
|---|---|---|---|---|---|
| Alabama | 4.8 | Louisiana | 3.5 | Oklahoma | 4.9 |
| Alaska | -6.9 | Maine | 5.0 | Oregon | 6.8 |
| Arkansas | 3.3 | Maryland | -7.0 | Pennsylvania | -6.9 |
| Arizona | 5.5 | Massachusetts | - 7.7 | Rhode Island | -8.2 |
| California | 7.8 | Michigan | 6.7 | S. Carolina | 5.6 |
| Colorado | -6.9 | Minnesota | -7.3 | S. Dakota | 3.4 |
| Connecticut | - 8.6 | Mississippi | 4.2 | Tennessee | 5.6 |
| Delaware | -7.9 | Missouri | 5.7 | Texas | 5.6 |
| Dist. of Col. | 6.7 | Montana | 4.9 | Utah | -7.2 |
| Florida | -6.8 | Nebraska | 5.0 | Vermont | 5.5 |
| Georgia | 5.3 | Nevada | -6.8 | Virginia | 6.6 |
| Hawaii | -7.5 | New Hampshire | 6.5 | Washington | -7.8 |
| Idaho | 4.5 | New Jersey | -7.1 | West Virginia | 4.1 |
| Illinois | 5.9 | New Mexico | 5.1 | Wisconsin | 6.2 |
| Indiana | 5.5 | New York | -8.5 | Wyoming | 6.4 |
| Iowa | 4.9 | N. Carolina | 5.3 | Dept. Schools | 4.9 |
| Kansas | 4.8 | N. Dakota | 4.5 | Extra Terr. | 5.9 |
| Kentucky | 6.0 | Ohio | 5.1 | Nat'l. Average-All Schools | 6.1 |

TABLE 4

AVERAGE NUMBER OF INNOVATIONS (NATIONAL) ACCORDING TO ENROLLMENT, EXPENDITURES, TYPE OF SUPPORT AND AREA SERVED

| Av. | Enrollment |
|---|---|
| 4.2 | Fewer than 200 |
| 4.3 | 200-499 |
| 6.4 | 500-1,499 |
| 9.2 | 1,500-2,499 |
| 9.1 | Over 2,500 |

| Av. | Per Pupil Expenditure |
|---|---|
| 4.8 | Less than $350 |
| 5.7 | $350-$499 |
| 6.9 | $500-$649 |
| 7.6 | Over $650 |

| Av. | Support |
|---|---|
| 6.1 | Public |
| 5.6 | Parochial or diocesan |
| 6.0 | Private, religious affiliated |
| 6.7 | Private, not religious affiliated |
| 6.5 | Government, other |

| Av. | Area Served |
|---|---|
| 7.2 | City of over 400,000 |
| 6.7 | Community of 5,000-399,999 (not suburban) |
| 7.7 | Suburban-within urban fringe of central city |
| 4.3 | Small town of under 5,000 |
| 4.1 | Rural |

## Reasons for Abandonment

The abandonment rates for PSSC physics, SMSG mathematics, television instruction, programmed learning, team teaching, and honor study halls were highest of any of the 27 innovations. As an example, 434 high schools (6.0 per cent) said they had tried but abandoned honor study halls. To determine why these practices had been given up, a followup study was carried out among a sample of such schools. The following were among the most common reasons:

- Indiscriminate adoption: principals reported they had not engaged their staff in adequate study of the implications of such a change; it just didn't "work out."

- Difficulty level of curriculum materials adopted was inappropriate, often just too abstract for the students asked to use them.

- Personnel changes and turnover; when certain key people left, so did the idea.

In the case of television, it seemed apparent from the responses that we simply don't know how to use it well enough yet. Problems of scheduling, reception, and bored students were cited. In the case of honor study halls, a number of principals had originally tried it for administrative expediency and then gave it up. A more frequently mentioned reason, however, was that there were simply some students who could not handle their time well when not supervised.

## Implications

Certain patterns can be detected from the data and by visiting innovative schools, which suggest that traditional programs are changing and new objectives being sought. Few educational phenomena are without historical precedent, and the emergence of several highly innovative schools is no exception.

In the period from 1910 to 1930, some 30 so-called "progressive schools" appeared across the country, often in laboratory school situations but also in the public schools. Influenced by Dewey, Burk, Parker, Kilpatrick, Charters, Rugg, Caswell and others, their growth and development featured extensive debate on origins of the curriculum, revolt against its classical structure, and a rigorous attempt to attain social as well as individual ideals. New organizing centers for knowledge (social sciences) were suggested, and the nature of knowledge itself underwent scrutiny. Organizational considerations were also basic, especially in Dewey's mind, as he encouraged teachers themselves to be engaged in curriculum revision in an authentic way. In these he was to be the prophet, and in attempting to make learning more interesting and realistic he was, for millions of students in the school's captive audience, to become a savior.

Carleton Washburne has analyzed the current thrusts as part of a cyclic or spiral pattern in which the spotlight in the schools has alternately switched from the learner to what is learned.

> "During the period 1880-1900 we see greatly increased emphasis on the learner. From 1900 to 1920 the emphasis shifts to what is learned. From 1920 to 1940 the light turns mainly (never exclusively) on the learner again. Then from 1940 to 1960 it shifts back to what is learned. Now we are beginning the shift to the learner.[1]

Such an analysis seems at least partially accurate although the educational enterprise is much more diverse and complex today. However, the growth of so-called "child-centered" activity schools in the twenties, and the self-instructive materials in which Washburne pioneered at Winnetka are much the vogue today except this is now called a continuous progress plan.

What central themes can be seen then in today's innovators? While much of the activity may be superficial or of a "band wagon" nature, it is clear that serious efforts are being made to accomplish change in these areas:

Attitudes toward learning - Schools embarking on flexible scheduling often provide students with from 20 to 40 per cent of their time unscheduled in order that the library, laboratories and other facilities can be used and teachers consulted. While a traditionally organized high school's library is often empty during class periods, when student regimentation is abandoned a much larger instructional materials center is required. The attitude students have toward school is crucial in determining their motivation learning. Students have grown up faster, are more mature today, and many have demonstrated their ability to handle their time wisely. That exceptions to this do occur has already been pointed out. However, there is often some risk in new ventures, and a few should not hold back the many from assuming greater responsibility for their learning.

Staff Deployment - The great majority of teachers are still typically faced with 25 or 30 students each hour, five times a day, five days a week. This 30 x 5 x 5 formula, while comfortable to administer, is extremely tiring, inefficient, and saps the creative energies of a teacher. Who, in good conscience, can recommend to a young person to go forth to a lifetime of teaching under such conditions? Such a schedule usually features much repetition of instruction for the teacher and makes no sense in terms of the purpose of various learning activities. The teacher also needs more free time to prepare, to discuss, to evaluate, and to study alternatives to present procedures. A different schedule, teacher aides, and various technological devices can do much to free the teacher from constant confrontation with students. A change is conducive to better morale which in turn is closely associated with teaching performance.

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[1] Carleton Washburne, "An Eighty Year Perspective on Education," Phi Delta Kappan, XLV, (December, 1963), pp. 145-150.

Focus on the Individual - Innovative schools are again attempting to better adapt the curriculum to the increasing diversity of students found in today's comprehensive high school. This is no easy task as enrollments mount. The hope of the non-graded plan, or continuous progress materials, is to organize students and the curriculum in such a way that individuals can progress at varying rates in meeting instructional objectives. While there is considerable talk at present on how big business is going to help with this, and how computer-assisted instruction will become useful, the school is not much helped at present by the limited experimentation now going on. However, every school can organize its curricular materials into steps, phases, or units, that students can succeed in and teachers can manage. Such curriculum materials have been locally developed in a few communities for many years.

Making Learning Interesting and Authentic - Use of technological devices such as television, simulation, telephone amplification, and other audio-visual aides has been effective in moving away from the single textbook approach to teaching. A few schools have employed a person with artistic talents to prepare visual transparencies for the teachers. In the social studies, efforts are being made to encourage better scholarship among students by guiding them into examination of actual historical documents rather than reading some textbook author's generalization about them. This area may see striking improvements in the next decade.

## The Current Rate of Duffusion

Data from the national study of innovation clearly indicate that schools are changing and at a much more rapid pace than in the past. The diffusion rate* established by Professor Paul Mort at Columbia several years ago is clearly no longer applicable to American education.

The data in Table 5 show that this lag theory does not describe the adoption rates of four important innovations. It must be pointed out that the population involved in accredited schools is a select group and the assumption has been made that any truly national estimates would lower each of the percentages cited. As an example, a national study[1] by the National Association of Secondary School Principals in 1964 reported that only 12 per cent of the schools were making use of educational television compared to 16.5 per cent in this study. Similarly, the 1964 study reported only 22 per cent of the schools involved in team teaching compared to 41 per cent with the accredited schools.

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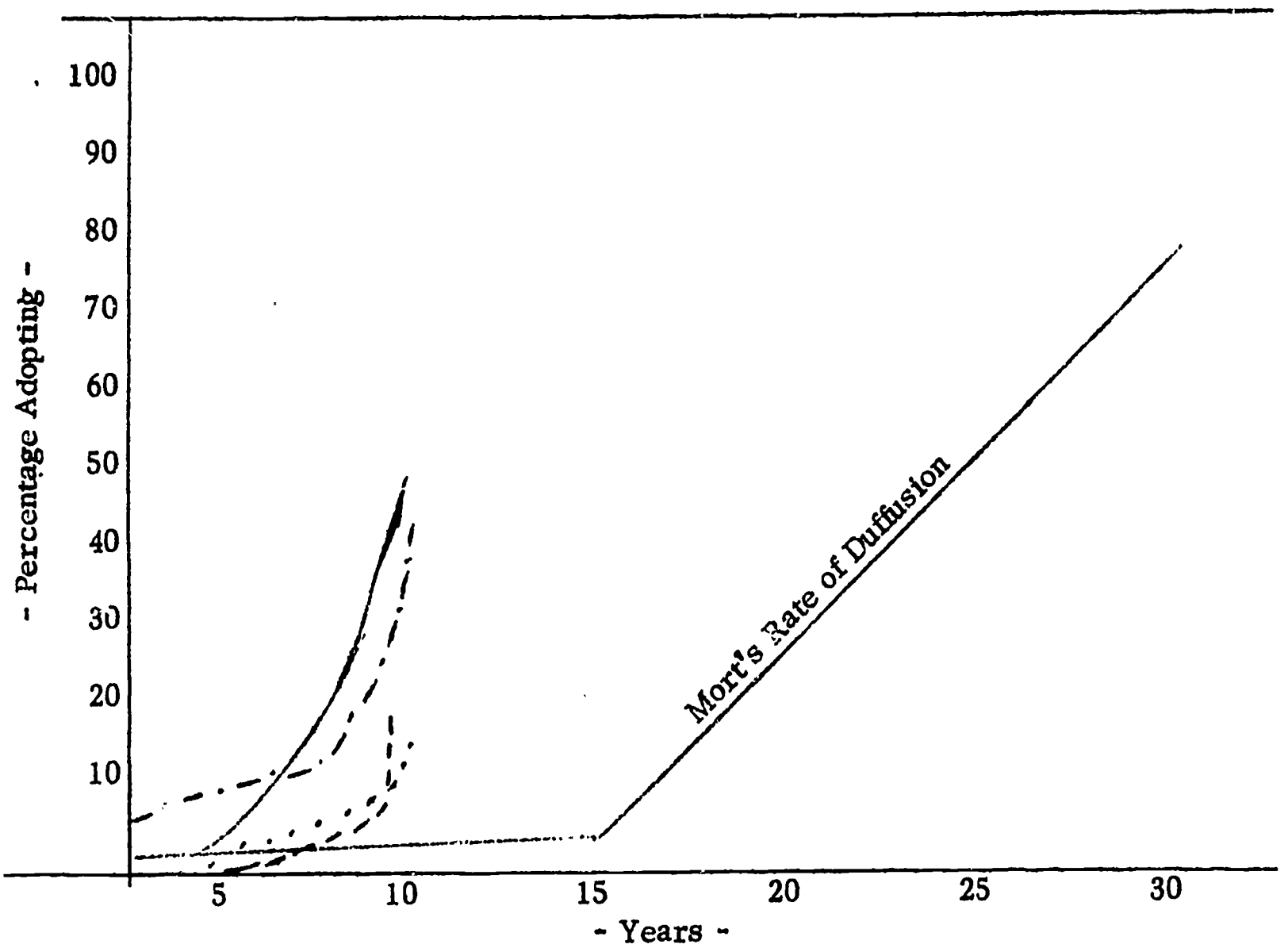
*Stated briefly: once a practice has been invented, it takes about 15 years before three per cent of the school systems adopt the practice and then 50 more years before it is completely "diffused."

[1]John Hemphill, James Richards, and Richard Peterson, Report of the Senior High Principalship, (Washington: NASSP, 1965), p. 68.

TABLE 5

APPROXIMATE DIFFUSION RATES OF SELECTED INNOVATIONS COMPARED TO MORT'S LAG THEORY 1957 (BASE YEAR) - 1967




Key: PSSC physics _____ Team Teaching ___.___.___.___

Humanities - - - - - - - - Television . . . . . .

Even accepting the estimates as revised downward, the three per cent category was quickly surpassed with several of the innovations reported as adopted by from 30 to 40 per cent of the schools. The lag theory never really was very applicable to the schools in general anyway. Because of their diversity, and increasing recognition that alternate paths can be used to accomplish the same objectives, it is apparent that 100 per cent adoption is an unrealistic or even an inappropriate kind of speculation.

A study of this kind is subject to many limitations, especially the problem of interpretation. It is doubtful that 15 per cent of the high schools are on a modular schedule as defined. Many schools may have only one section of a given subject being taught using new materials. However, the innovations involved in this study are having their impact. No textbook publisher would come out with anything other than "modern math" these days, and the abandonment study revealed many schools that abandoned the program as defined but only because they had purchased a commercial edition of the material. Many respondents indicated that they had not adopted wholesale a given curriculum, but were using parts of it or certain of the concepts it featured. Few schools, for example, are entirely nongraded, but many have adopted this plan for their English program.

Already a number of studies have grown out of this national inventory. Researchers are investigating differences in organizational complexity, climate, and administrative behavior among innovative and traditional schools in an effort to get at the factors that help facilitate change. How organizational health can be established and maintained must continue to be a matter of concern to both the researcher and practitioner. The functions and expectations of the local faculty, the school system, the state and federal governments, along with a large number of other organizations, are in a state of flux now, but most are interested in determining how they can help schools to better themselves. Much of the responsibility must fall on the local administrator and his staff as they work to accomplish sensible change. Effective evaluation procedures can do much to reveal strengths and weaknesses of an organization.

## The Administrator as Change Agent

Today's administrator has more alternatives in curriculum, technology, and organizational devices than ever before. In the final analysis, he must present knowledgeable recommendations to the board knowing that his staff has the enthusiasm and know-how to implement a new program. It is finally being recognized that the administrator must learn better how to function as a change agent. We are all part of organizational bureaucracies-they are an extremely durable social arrangement. However, the properties of a bureaucracy such as fixed rules, hierarchy of authority, division of labor, and the handling of conflict by power, suppression, or avoidance ... these properties tend to function to maintain the status quo.

Today's administrator must marshal resources for his staff and learn to recognize the complexity of the change process. There are a number of important components that must be involved in accomplishing change. Table 6 depicts one way of viewing these components.

The first stage involves recognition of weaknesses in the program as revealed through local study and evaluation. It can also be called identifying the unmet needs of students. This kind of information must be discovered and very honestly conceded.

A second aspect is faculty consideration of constructive alternatives (innovations). It is in this respect that we have more alternatives available than ever before. Those that seem feasible and realistic can be adapted for local use through teacher involvement. At this stage, it will often be necessary to involve consultant help, or to send staff members out to observe other schools.

Once the alternatives have been considered, the administrator must consider the factors that will tend to retard change. It may be finance, teacher resistance, board reluctance, community disinterest, or a combination of these. Any one of them may prevent desirable changes from taking place.

Factors within the organization must also be analyzed in order that barriers to change can be overcome. When generally it is desirable to capitalize on the strengths of people, there may be times when personalities must be sacrificed for the good of the program. Roles must be clarified and expectations of people agreed upon if change is to become a viable way of life in the school. Considerable effort must be made to nourish creativity among teachers and maintain at the same time good organizational health.

A final aspect is to develop a strategy or master plan for accomplishing the changes that have been identified as needed. It is here that the administrator must have knowledge of the various components just identified, and will need many skills that often he has not been taught. What will the administrator be remembered for after five years, ten years, or a lifetime in a community? Those who have been most adaptive in acquiring the new skills involved in change processes are certain to make important contributions to the progress of the educational enterprise.

TABLE 6

COMPONENT OF THE CHANGE PROCESS IN SCHOOLS