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ABSTRACT

In this document conference participants consider characteristics of the communications network for diffusion of new instructional materials and practices. Responses to these questions are presented: What are the communication mechanisms within the diffusion system that encourage or discourage the diffusion of innovation? What role do journal articles, films, pamphlets, books, curriculum guides, publisher's notices, etc., play in the diffusion (both dissemination and implementation) of innovative ideas and products? What roles do students, teachers, publisher representatives, developers or materials and authors of products, subject matter supervisors and department chairmen, college methods teachers, State Department of Education personnel and specially-trained personnel play in the diffusion of innovative products and ideas? Related documents are SO 006 339 through SO 006 344. (SHM)

NATIONAL SEMINAR ON THE DIFFUSION OF NEW INSTRUCTIONAL MATERIALS AND PRACTICES

Wingspread

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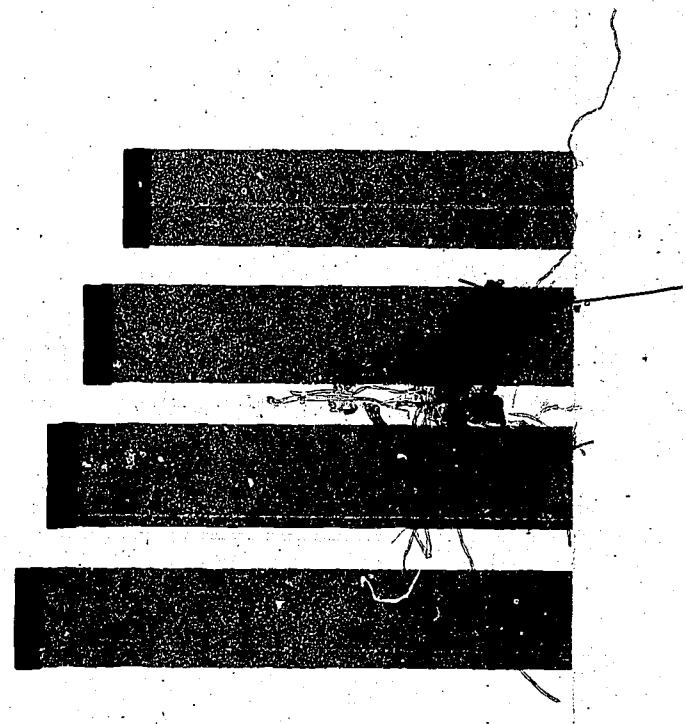

5.0 CHARACTERISTICS OF THE COMMUNICATIONS NETWORK: WHAT ARE THE COMMUNICATION MECHANISMS WITHIN THE DIFFUSION SYSTEM THAT ENCOURAGE OR DISCOURAGE THE DIFFUSION OF INNOVATION?

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with support from The National Science Foundation and The Johnson Foundation

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5.0 Characteristics of the Communication Network: What are the communication mechanisms within the diffusion system that encourage or discourage the diffusion of innovation?

My responses in this section will be rather brief.

First, mediated communication (e.g., journal articles, pamphlets, notices, etc.), basically create an awareness that something exists. The degree to which users or potential users follow up on the mediated communication is hard to pin down. As many well know, when receiving a communication from a potential user, the communication usually begins with "I heard that" or "somebody told me that" or something similar. It is very hard to pinpoint the source of the hearing or telling.

Second, in terms of interpersonal communications, it probably depends on particular school districts or particular situations as to what role particular persons would play in the diffusion of products and ideas. Let me suggest a category system. It might be desireable to have the seminar group or a sub-group try to fill in the categories or alter them. My categories would be 1) Diffusers: Those interested in distributing information about and/or selling the product.) 2) Reactors: Those who sift, sort, and criticize information. (These individuals could either promote or stop diffusion.) 3) Helpers: Those people who see their position as providing links to the improvement of a particular kind of program. 4) Users: Those who are actively using the product or the idea with the intended client. (These individuals are in a position to provide reliable feedback to Diffusers, Reactors, and Helpers).

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5.0 CHARACTERISTICS OF THE COMMUNICATIONS NETWORK: WHAT ARE THE COMMUNICATION MECHANISMS WITHIN THE DIFFUSION SYSTEM THAT ENCOURAGE OR DISCOURAGE THE DIFFUSION OF INNOVATION?

5.1 Mediated Communications. Role of journal articles, etc. Journals, films, books may be very effective in informing the few who keep on top of what's going on in the field. I doubt if most curriculum guides created by school districts are widely used by teachers. Atleast, this is my experience. The guides are important for the teachers who construct them as a learning experience in curriculum development. They no doubt influence these teachers. Publishers notices are evidently used but my publisher is not too sure of their effect. The travelling salesman is more important.

5.2 Interpersonal Communications. Importance of various people. Once materials are used in class, students are very important in the sense that if they like the materials, teachers like them too. Teachers like what student like by and large. Salesmen are important, particularly for elementary adoptions. Probably all of these different types of people are important in one way or another. I should mention one, which I am, the developers. They aid in diffusion directly by drumming up business directly through speech making and running workshops. As important, they are important in their written communications with students and teachers--in the quality of the materials and their relevance and usefulness. Diffusion must be taken into consideration in the writing, organization and design of the materials themselves.

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5.0 "Characteristics of the Communications Network: What are the communication mechanisms within the diffusion system that encourage or discourage the diffusion of innovation?"

Mediated communications seem to have an important, but limited, role in the diffusion of innovative ideas and products. Additionally, they can provide awareness which tends to be responded to by individuals or districts who are high innovators. For most, it appears that such initial awareness is not enough of an impetus to lead to trial. In early and middle stages of diffusion it appears that interpersonal communication and direct personal support are necessary for trial for most individuals. This seems as true for a teacher attempting an idea that is innovative in the classroom as for a school district trying a larger scale innovation. Studies such as those done by the Center for the Advanced Study of Educational Administration at the University of Oregon indicate that networks or cadres of individuals need to be created in order that the kinds of norms I enumerated earlier may form to support the trial and maintenance of innovations.

The importance of the communication between particular roles

such as students-teachers or publishers-representatives will vary depending upon the innovation in question. In general, the principles suggested by Lippitt, Watson and Westley in their book The Dynamics of Planned Change seem to apply. The probability of successful trial and maintenance of innovation seems generally increased if those who are to be affected by the innovation are involved in considering it, planning for it, and carrying it out.

Research indicates other ways that innovation can be accomplished. We are concerned from a value orientation that some of these ways, while achieving a kind of success, may perpetuate undesired conditions. For example, research indicates that it is important for top power figures to support an innovation if it is to succeed. While orders from the top down may achieve success in the introduction of an innovation they don't necessarily achieve success for implementation of that innovation if they generate resentment among those who are implementing or are affected by it in other ways. There can also be abortions at the other extreme. It seems to us that we sometimes see authority figures attempting to be democratic in introducing and supporting innovations whereas in fact they are actually being laissez-faire. Persons in authority seem to need to be willing to commit themselves personally to the success or failure of the innovative effort rather than simply indicating to their subordinates that they are to go ahead and attempt to be innovative and then if it doesn't work out stew in their own juice.

There are many potential "linker" roles that can facilitate the spread of innovations. Some variety in the ways that these roles are carried out is probably desirable. We doubt that there

is any single right way to be an effective publisher representative, college professor, or state department member. Again I refer to Havelock's notion of a linkage model for supporting diffusion in education. He suggests that both the user and resource system need be familiar with each other's procedures if diffusion is to be maximally facilitative. Put simply one might say people in these two roles need to understand and accept where each other are "coming from." The sequence of four training packages we are developing with the overall title of Preparing Educational Training Consultants deals with techniques for differential diagnosis of both the client system and one's self as a linker or resource role as well as ideas of differential interventions depending on the nature of the client system and the consultant's relation to that system. They consider such things as kind of problem solving in intervention efforts and differential role taking by the resource person. For example, if people in a school district think of themselves in "stereotypic" terms the resource person will gain entry most easily if seen as an "expert." If people in the school district, on the other hand, see themselves in "opinionated" terms, the resource person will gain entry best by being seen as similar in experience and orientation to members in that school district rather than as an expert. The form of an innovation needs to fit the orientation of a school district in these sorts of terms as well. We suspect that many innovation attempts fail because they are too sophisticated a form for the organizational maturity of a particular school district. Our materials go into such issues in more detail than this limited response allows.

5.0 Characteristics of the Communications Network -- What are the communication mechanisms within the diffusion system that encourage or discourage the diffusion of innovation?

5.1 Mediated Communications

5.1.1 What role do journal articles, films, pamphlets, books, curriculum guides, publishers notices, etc., play in the diffusion (both dissemination and implementation) of innovative ideas and products?

I don't know much about the realtive usefulness of the different types of media for disseminating new educational

programs. However, in terms of content, I have always been turned off by brochures that give abstract accounts without examples (the abstractions are so ill-defined in education), or by films that show fleeting glimpses of student activities plus much talk about and by the curriculum developers. The more that is shown of the actual materials in print, or of students in classroom working with the curciculum, the better. While reading through national assessment brochures about the goals and operations of that program, I would have been much more enlightened by a few sample test items. Old Madison Project films showing whole class periods, told me much more than a somewhat more recent film of the Comprehensive School Mathematics Program (CSMP) project which shows a few short sequences of children's activities plus much of staff meetings, etc.

With respect to resource materials for teachers, the U S M E S project was worried about the tendency of teachers to use a detailed activity description as a lesson plan. This would prevent student initiation of activities--a basic element of U S M E S units. On the other hand, a general description could be very misleading. The project has, consequently, adopted a multiple-log approach. In this way, prospective users see details of what actually happens while also becoming aware that different things happen every time. This seems to work, but evidence has not yet been accumulated

on how necessary the multiple exposure is.

5.2 Interpersonal Communications -- What roles do the following persons play in the diffusion of innovative products and ideas? Students...teachers...publishers representatives (textbook salesmen...parents and other community members...developers of materials and authors of products...subject matter supervisors and department chairmen...college methods teachers... state department and intermediate personnel...specially-trained personnel...leadership in professional associations (professional meetings)?

Students seem to have very little opportunity to play a direct role in diffusion. However, they do play an important indirect role in making parents aware of particular school activities which interest them greatly.

When high school electives are clear about the curriculum materials being offered them, the students must have an influence through voluntary enrollment. But this takes place only after adoption. At the recent conference at Estes Park, Colorado, on "Secondary School Learning through Investigation and Action on Real Problems", the presence of four adolescents who had recently graduated high school had an important influence. This model could well be followed in the initial formulation of programs. Do schools put students on curriculum committees?

When involved, the teachers play a most effective role in the dissemination of innovative curricula. They can convince administrators of the efficiency of the program, while removing doubts about teacher acceptance. Experienced teachers are the best teachers of other teachers. However, it has been noted that teachers, like other people, are not apt to be enthusiastic unless they play a role in development. Those programs which are developed (not just field-tested) in many classrooms are most likely to have effective dissemination, through teacher interest (as well as a more soundly developed product).

Everybody seems to think that textbook salesmen are the key to widespread adoption. Is this because it is the easiest way out for many curriculum committees?

Parents and community members, like students, are usually only given a role after adoption. Then they may be very influential, especially in throwing out an innovation. Innovation could benefit from more early parent participation.

Developers of materials and authors of products are now important in general publicity and in developing national awareness of new curricula (through professional meetings and journals). However, the role they could play in helping schools or districts to decide on when and how to adopt has been largely abrogated by the publishers' salesmen. One can envisage the developers meeting regularly with the leadership

of professional associations, state and educational personnel, and with local administrators. The Administrators Conference of the U S M E S Project is looking into these possibilities.

College methods and content teachers have been very influential as initiators and developers of new materials. They have also done much to revise teacher education to provide a basis for innovative curricula. My own view is that their dissemination role is much more effective when they provide courses that combine methods and content. Then the student teacher learns the content in the form needed and gets a clear view of the effect of the new approaches.

The specially-trained personnel listed would seem to be essential if some of the teacher-education is to take place through workshop-type experience outside of the college-course context (see 5.3). I would like to learn more about the relative effectiveness of the different types of special personnel training and modes of operation.

5.3 Other

New teaching modes are very difficult to acquire through the media only. Discussion and practice would seem to be essential. This can take place in laboratory and intern-based college programs. However, when a school or district wants to adopt a new program, the necessary college courses may not

be available. Then, a short intensive workshop can be effective and, when there are enough teachers involved, cost-effective also. The availability of resource personnel to staff these workshops is the key to these programs.

5.11 I have found that films are a very effective way of bringing new ideas to the attention of school personnel. In England, many films about their new mathematics programs were made and shown at teachers' meetings, on public TV and in the schools. The English also prepared excellent pamphlets which were widely distributed to explain the new programs in very attractive ways.

5.3 The most effective means that I observed for the dissemination of the new mathematics program in England was the short teachers' workshops held in the different parts of the country at regular intervals. Very skillful people presented the new ideas in ways that involved the teachers in the learning process through various activities related to their classroom teaching. The Teachers' Centers were another means of spreading new ideas and helping teachers implement the new programs. In any event, the films, books, workshops, etc., must somehow get the teacher to understand the philosophy and rationale of the new program and to see that the students will be better off going through the new materials.

5.0 CHARACTERISTICS OF THE COMMUNICATIONS NETWORK: WHAT ARE THE COMMUNICATION MECHANISMS WITHIN THE DIFFUSION SYSTEM THAT ENCOURAGE OR DISCOURAGE THE DIFFUSION OF INNOVATION?

5.1 Mediated Communications

5.11 What role do journal articles, films, pamphlets, books, curriculum guides, publishers notices, etc., play in the diffusion (both dissemination and implementation) of innovative ideas and products?

Adequate diffusion requires the use of a wide variety of channels. While it is important for developers to publish articles, pamphlets, newsletters and reviews relating to their work, these are not especially direct avenues to the users. Only a small minority of teachers follow the intellectual currents within a discipline through journal articles, book reviews, books, and pamphlets. Nevertheless, the developer has an obligation and a need to communicate to opinion leaders, the individuals who are trend setters within an intellectual discipline and are authors and readers of journal articles, books, and pamphlets.

Thus, one of the ways a developer seeks to diffuse his product is to initiate intellectual discussion on the ideas represented by his product. For example, it was important for Donald Oliver to write articles, books, etc., relating to the jurisprudential approach in order to attract interest among the people who do reach teachers through pre-service and in-service education programs, conferences, etc. A number of people are unofficial disseminators of ideas. They are tuned in to what is fresh and interesting and pass these ideas on in a variety of ways. (In the study of public communication and influence this has been called a "two-step flow" of communication.)

The developer needs to use books, pamphlets, journal articles, etc. as a way of building credibility for his work. The developer who gives all of his time to publishing products to be consumed by students may find himself judged as merely interested in making money, as not being "truly professional." The credibility of the developer among his peers and among leaders in education within his subject area is enhanced if he writes papers and books of a more scholarly nature. Moreover, he should carefully evaluate the results of his innovations and publish his findings as honestly and as fully as he can.

Jan Tucker identified a discrepancy between teacher educators and developers regarding who should be responsible for leading the reform in social studies education. This discrepancy seems to result in part from misunderstandings about roles, distrust of intentions, and petty jealousies. The developers can help reduce these differences if they show that they are achieving high standards as specialists in the subject field by writing for their peers. Indirectly this aids the diffusion process as it wins the support of opinion leaders within the subject field and leads them to recommend the innovation idea or product.

5.2. Interpersonal Communications

5.21 What roles do the following persons play in the diffusion of innovative products and ideas?

This could become a very long answer if one were to attempt generalizations about each of the positions specified in the question. Nevertheless, much of the answer remains speculative in any event. Therefore, I have selected only a few that I think deserve special attention.

In my opinion, publisher representatives have been overlooked as a major dissemination agent in education. Some at this conference will have heard me comment on this theme before. We know very little about the processes used by textbook salesmen in influencing decisions by teachers and school administrators. We know very little about procedures they use to win state adoptions. We need well-documented case studies regarding procedures and methods used by textbook companies. The little experience I have had in studying their activities convinces me that the role of textbook salesman is quite analogous to the role of pharmaceutical salesman in medicine. For many teachers, salesmen are a primary source of information about what is occurring in social studies. Many teachers develop very close relationships with salesmen, and they buy products from a particular salesman because of faith in the company or in that salesman rather than through any kind of comparative assessment of the relative merits of the products available to them. In some states, salesmen succeed on the basis of the service they provide their clients. In a great many cases, teachers are more familiar with a particular salesman and rely more upon him for advice than they do representatives from nearby colleges and universities. Some textbook firms employ professionals who provide in-service training programs relating to the products they are marketing. I suspect that in some states, more teachers are engaged in in-service programs through textbook firms than they are in in-service programs sponsored by the state colleges and universities. We can only speculate about the effect textbook companies have on the movement of ideas in education, but I am certain that it is much larger than any of us realize. This topic is begging to be investigated.

Subject matter supervisors and department chairmen are important conduits for information about innovations within subject matter fields. The proportion of supervisors and departmental chairmen who belong to the National Council for the Social Studies is much greater than the proportion of classroom teachers who are members. While there are weak supervisors and weak department chairmen, the fact is that the role expectations lead these people to be attentive to new developments in their subject fields. I have somewhat mixed feelings about the role played by college methods teachers. In the first place, the role is different in different kinds of institutions. In large state universities, people are employed to teach methods full time within a particular subject field. They also direct doctoral students within that subject area. These people are often the major opinion leaders within the subject field. They attempt to stay abreast of leading ideas and are usually aware of the work of developers. Often they become important allies for developers. In some cases, when a college methods teacher has adopted a position that is contrary to the ideas promoted by the developer, he can lead the oppostion to the developer's program. These people write articles, books, and reviews that touch upon the developer's work. Therefore, it is important to tap this group as much as possible for the diffusion task.

There are other people who teach methods courses. In many smaller colleges, no particular individual is assigned the task of teaching the methods courses within a subject area as a full-time responsibility. Therefore,

one can expect to find a history professor or a political science professor who occasionally is asked to teach a special course for teachers. These individuals are often as out of touch with new developments within a subject field as are many classroom teachers. Indeed, they are usually more out of touch than social studies supervisors and department chairmen. Often, they are not readers of the journals and books within the subject area, making it very difficult to reach this population.

In some colleges and universities, a general methods course is taught by a professor in the department of education. This course is taken by all students who are preparing to teach regardless of their subject fields. The instructor may know much about teaching, but he frequently knows little about the leading ideas within specific subject fields and has little time within his course to devote to ideas within specific subject areas. While these people may be receptive to new ideas if they can be reached, it is a difficult group to contact and influence.

State department personnel who are specialists in the subject field are invaluable allies. Without exception, I have found state department social studies supervisors eager to be informed about new ideas and willing to be helpful in promoting new programs within their states. In state adoption states, these individuals play important roles in defining the criteria that will be used in selecting textbooks for adoption. Therefore, it is important to inform this group about new developments within the field of social studies.

Education sorely needs additional types of diffusion and dissemination agents. At Indiana University, Gerald Marker has been responsible for the training of people designated as "field agents." These people were selected

from school systems within a 300-mile radius of Bloomington and were given one year of special training at Indiana University. Later, they returned to their school systems to assume new roles that gave them authority and responsibility to act as change agents within their subject fields, both within their schools and within surrounding school systems. Other experiments are underway to shape and develop field agent or change agent roles. Hopefully, in the years ahead, much more work of this kind will be done.

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5.1 Mediated Communications

5.11 What role do journal articles, films, pamphlets, books, curriculum guides, publishers notices, etc., play in the diffusion (both dissemination and implementation) of innovative ideas and products?

Certainly, the public media can strongly assist the process of curriculum innovation. While publishers tell me that advertising is of relatively low value in the educational marketplace, certainly articles in popular and prestigious journals do make curriculum opinion makers and decision makers aware of the existence of innovations; and this can create a general climate of receptivity within the professional education community. Of more central importance, however, is the need for staff development. Here curriculum materials, such as films, books, guides, etc., can be tremendously supportive of a large-scale training effort. They do not replace, however, interpersonal communication.

5.2 Interpersonal Communications

5.21 What roles do the following persons play in the diffusion of innovative products and ideas?

Students: Very little role except when their reactions are recorded on film, newspaper articles, classroom correspondence, etc. Potentially, they are a very strong force for innovation, but there are few mechanisms for mobilizing their participation.

Teachers: Teachers are probably the most effective disseminators of innovative products, as they have very high credibility with other teachers if they are experienced users. Unfortunately, however, it is almost impossible to draw teachers into the process of diffusion on any extensive basis. Any mechanism that could be devised for increasing the participation of teachers in the diffusion of innovation would be very desirable, in my view. Teacher-to-teacher networks are desperately needed.

Publisher Representatives: These are the principal diffusion agents within the country, and they are very successful in getting standard products in the marketplace. They are often confused or threatened by innovative products, as they involve costly and time-consuming presentations. I would say that publisher representatives, by and large, represent a barrier to the diffusion of innovation.

Parents and Other Community Members: Potentially, parents and other community members could be a strong force behind innovation, but they are not at the present time. If anything, growing parent involvement with the schools is forcing administrators to adopt a cautious and conservative stand towards curriculum innovation. Only a strong effort on the part of schools, the users, and developers to cultivate the participation of community members in the innovative process can overcome this basic problem.

Developers of materials are sometimes very good at informing the profession generally about the existence of products. They are not, however, very good at solving the hard problems of getting school systems to adopt and pay for innovative products.

Subject matter supervisors and department chairmen: These people very often play a key role in curriculum innovation. An enlightened supervisor or department chairman can carry a great deal of weight with the school board. Many of these people are highly motivated towards innovation.

College methods teachers: This group tends to associate itself closely with innovation and often appears to adopt a strong supporting stand for new curriculum materials. Their record in getting the materials effectively used on a large scale within the schools is much less impressive than their rhetoric. By and large, college methods teachers are interested mainly in their college work and do not want to "dirty their hands" with the tough problems of getting new programs installed within the schools.

State Department and intermediate personnel: In my experience, State Department personnel have either been ineffective or extremely conservative about the adoption of innovation. There are exceptions to this, of course, (North Carolina is a notable one), but very often State

Department personnel are simply not acquainted with new products and ideas. This will undoubtedly change with the trend towards regionalization, as fresh people begin to occupy those dusty offices.

Specially-trained personnel: Many of these people have turned out to be extremely effective innovators. Their strength lies in the fact that substantial sums have been invested in providing them with in-depth exposure to innovative programs, and they are often able to speak with great persuasiveness and credibility to school administrative personnel. Providing training of this kind is very expensive, but it seems to have paid off well with respect to the adoption of innovation.

Leadership in professional associations: Communication of this kind has been only moderately effective. Developers need a "pipeline" for information about new programs, and the professional associations are appropriate candidates for this role. Unfortunately, however, they have been only moderately effective in establishing a communications network, and annual meetings and conferences seem to be so overloaded with diverse topics of discussion that it is often impossible to reach people in large numbers at these meetings. In recent years organizations like NASSP, ASCD, and NCSS have become increasingly interested in curriculum innovation, but new mechanisms are needed to translate that enthusiasm into effective support for the implementation of new programs.

5.0 CHARACTERISTICS OF THE COMMUNICATIONS NETWORK: WHAT ARE THE COMMUNICATION MECHANISMS WITHIN THE DIFFUSTION SYSTEM THAT ENCOURAGE OR DISCOURAGE THE DIFFUSTION OF INNOVATION?

5.1 The literature of research in the spread of innovation in fields other than education indicates that difussion depends more on professional and informal contacts (for example, physicians meeting with other physicians) than upon commercial and formal channels of communication. In education there is evidence to suggest that "outsiders" actually hinder adoption of innovation. The most important function of media communication is to make educators aware of the existance of new products; other means are more effective in stimulating actual adoption.

5.2 The diffusion of curriculum innovation involves a complex galaxy of roles and relationships. One simplified example of such interaction can be outlined for the difussion of episodes by the Sociological Resources for the Social Studies project. Students provided feedback and suggestions for improvement at two stages in the episode development process; during local trials of pilot materials by the teacher members of the writing teams and during national trials of the experimental units by SRSS headquarters personnel. Teachers served as co-authors and conducted trials of the episodes in classrooms around the country. Publishers representatives constitute the sustaining force for diffusion of the episodes. The role played by parents and other community members in diffusion of the SRSS materials is not known to this author but it can be assumed that there has been some input. The SRSS staff played a large role in stimulating the diffusion of the project materials; as developers the staff initiated a wide variety of contacts and media to communicate about the episodes.

bject matter supervisors and department chairmen, at least in the trial

schools, facilitated much of the work of conducting classroom tests of the trial materials. College methods teachers were a prime source for project developers to contact to originate proposals for inservice teacher education institutes and workshops; a few helped the SRSS staff coordinate episode trials in the areas around their universities. State Department and intermediate personnel had little direct contact with the SRSS diffusion effort but often played an indirect role in their communications with state and regional educators about innovative curriculum products. Specially trained personnel had a large role in the diffusion of the SRSS episodes. Trainees of NSF summer, part-time inservice, and academic year institutes; resource personnel workshops; summer administrators' conferences; and the directors of all of these organizations all contributed to the broadcast of the SRSS message. Their work has been further stimulated by the efforts of specialized agencies like the Indiana University Diffusion Project and Field Agent Program and the Social Science Education Consortium. Benifits to the SRSS diffusion program came also from leadership in professional organizations, primarily the National Council for the Social Studies. SRSS staff personnel were active in the NCSS and conducted yearly sessions at the annual meetings. In addition SRSS staff members made presentations at the other major educational organizations including the American Educational Research Association, The Association for Supervision and Curriculum Development, the National Association of Secondary School Principals, and many state and local level social studies organizations.

5.0 *CHARACTERISTICS OF THE COMMUNICATIONS NETWORK:*

5.1 *MEDIATED COMMUNICATIONS*

5.11 *WHAT ROLE DO JOURNAL ARTICLES, FILMS, PAMPHLETS BOOKS, CURRICULUM GUIDES, PUBLISHERS NOTICES, ETC., PLAY IN THE DIFFUSION (BOTH DISSEMINATION AND IMPLEMENTATION) OF INNOVATIVE IDEAS AND PRODUCTS?*

(a) Articles, films, books, etc., are effective means for curriculum diffusion but only with those teachers who read or review them. Unless a teacher has access to these materials or unless a supervisor encourages teachers to review these media, it is unlikely that ideas will be diffused. Therefore, it appears to me to be imperative that schools' instructional staff be encouraged to join all professional associations and attend all possible meetings and conferences that time and budget allow. In our own local area, one district (high school district 214) provides $75.00 per year to a teacher to join professional associations and buy professional materials. At any meeting, it is obvious that these teachers are more interested and aware than teachers from schools where this practice is not followed. Even at Lake Park, which I consider an innovative high school, I have had difficulty in persuading some members of my department to join NCSS and other professional associations.

(b) Publisher notices are generally worthless as far as encouragement of teachers to try new products. If publishers were to send a "spy" to stand by teachers' mailboxes for any length of time they would soon realize that advertising material is immediately tossed to the nearest waste basket. At the very most, a department chairman might save the material to be used later on. Publishers would be far more served by sponsoring

half-day conferences and/or luncheons and dinners in which these materials would be discussed and displayed. The total cost would probably not exceed what must be a tremendous financial burden as far as mailing. In my own school, teachers that have not been at Lake Park for six or eight years still continue to receive four and five letters a day from various publishers.

5.2 INTERPERSONAL COMMUNICATIONS

5.21 WHAT ROLES DO THE FOLLOWING PERSONS PLAY IN THE DIFFUSION OF INNOVATIVE PRODUCTS AND IDEAS?

STUDENTS, TEACHERS, PUBLISHER REPRESENTATIVES (TEXTBOOK SALESMEN), PARENTS AND OTHER COMMUNITY MEMBERS, DEVELOPERS OF MATERIALS AND AUTHORS OF PRODUCTS, SUBJECT MATTER SUPERVISORS AND DEPARTMENT CHAIRMAN, COLLEGE METHODS TEACHERS, STATE DEPARTMENT AND INTERMEDIATE PERSONNEL, SPECIALLY-TRAINED PERSONNEL--INCLUDING TEACHER CENTER REPRESENTATIVES (TEXAS EDUCATION ASSOCIATION); RESOURCE PERSONNEL WORKSHOP TRAINEES (SUPPORTED BY THE NSF); SUMMER ADMINISTRATORS' CONFERENCES (NSF); SUMMER INSTITUTE DIRECTORS (USOE AND NSF SUPPORTED); SPECIAL FIELD AGENT TRAINEES (INDIANA UNIVERSITY DIFFUSION PROJECT); ETC., LEADERSHIP IN PROFESSIONAL ASSOCIATIONS (PROFESSIONAL MEETINGS)

Students are significant in the diffusion process if one group is being exposed to a set of curriculum materials and another group is not. This frequently occurs when a teacher returns from a summer institute and implements a set of curriculum materials in his classroom. Before long other students are requesting that their teachers also use them. However, unless a situation similar to this occurs the students probably have little if any role to play in the diffusion process. By the same context, teachers are frequently influenced by other teachers on their staff, but only if they are not "pushy" about their new ideas. The best service a teacher can be is to teach his classes in such a way that it becomes apparent to all concerned that he is enjoying more success than a teacher who is not

using the ideas or materials. Publisher representatives and textbook salesmen are important, but sometimes simply do not have tne expertise or the knowledge to effectively communicate the goals and descriptive characteristics they are trying to sell. In my own area, Harcourt and Ginn have outstanding publisher representatives. They are able to explain the rationale activities and other important information to department chairman and/or teachers. However, others are so poorly informed that they may do more harm than good in trying to diffuse materials. Parents and other community members can be involved only so far as their knowledge is concerned. I have given several talks to PTAs and other community groups about the new "social studies." This has resulted in some encouragement on the part of community members to ask their school administration to review some of the materials I described or displayed. However, I would not think their impact would be very large. The developers and authors of curriculum materials are probably as important as supervisors and department chairman. These two groups, I feel, as the most significant in the diffusion of educational innovation, whether it be in the form of materials or new ideas and techniques. If curriculum developers effectively use the techniques described in 2.0 they can be extremely significant in the diffusion process. Authors, if they are given a budget and are willing to speak to teachers, can also be effective. Subject matter supervisors and department chairman are probably the most important group in the diffusion process. Although teachers criticize their efforts as autocratic, supervisors or chairman that have been most successful are those teachers on their staff that are interested in new techniques and/or new materials. Sending teachers to other schools or to

conferences can be extremely effective in encouraging them to explore new strategies and materials. Conversely, a supervisor and/or department chairman can stifle or inhibit the diffusion process in countless ways: by the skillful use of red tape, by negative appraisals and by out and out refusal to purchase materials. Diffusion then can be rejected. In my visits and consultative work with other schools, I felt that the two most significant barriers to diffusion were either a teaching staff that resisted efforts of a supervisor or chairman or the supervisor or chairman restricting the enthusiasm and open-mindedness of his staff. College methods teachers are, with a few notable exceptions, absolutely useless as far as the diffusion process is concerned. So few of them are knowledgeable about new developments in either instructional strategies or instructional materials they simply can not be effective. State Department personnel are effective in some states such as Minnesota and innefective in others such as Illinois. The primary reason for this is that some states have subject matter specialists that are selected because of their expertise and ability to work with teachers. Others are simply political patronage jobs and are generally unskilled in the use of human dynamics and unknowledgeable in the realm of curriculum innovations. Professional associations are important to those teachers who are members, as I described in 5.11. I think it is this area that offers the most opportunity for curriculum diffusion. If we can encourage more classroom teachers to join and take part in professional associations I think we will go a long way toward the encouragement of curriculum innovation.

5.0 CHARACTERISTICS OF THE COMMUNICATIONS NETWORK: WHAT ARE THE COMMUNICATION MECHANISMS WITHIN THE DIFFUSION SYSTEM THAT ENCOURAGE OR DISCOURAGE THE DIFFUSION OF INNOVATION?

5.1 Mediated Communications

5.11 What role do journal articles, films, pamphlets, books, curriculum guides, publishers notices, etc., play in the diffusion (both dissemination and implementation) of innovative ideas and products?

Considerable, since these printed and other visual materials can be mass distributed easily. Some of these, such as films and teachers' curriculum guides are usually critical to the actual use of the product in schools. Also, these materials are used extensively by sub-implementors who were not a part of the development team.

5.2 Interpersonal Communications

5.21 What roles do the following persons play in the diffusion of innovative products and ideas:

Students: Little at present. A neglected resource used only as the subjects for participation in dissemination films currently.

Teachers: Major if the plan for diffusion is carefully designed since they can provide evidence on what actually happens when using the product.

Publisher representatives: Major if necessary training is provided and interest is maintained. They directly carry the product to the local schools and service the customer.

Parents, etc.: Minimal. Can spread product in school system or limited geographic area by word of mouth.

Developers and authors: See question 2.0.

Subject matter supervisors: Can give leadership if available. Can be valuable for carrying out continuing in-service training if needed.

College methods teachers: Especially at the elementary level they can have a most significant effect by keeping pre- and in-service teachers informed of developments in the field so they understand the reference frames in which specific innovations exist. All too often this individual is not well informed about innovation in his area.

State Department personnel: Can help in disseminating information, making known innovative options available and can help in area of state adoption if applicable.

Specially trained personnel: Any significant innovation will require teacher and school district staff training and assistance during the period of adoption before the innovation becomes an integral part of the school operation. If the innovation is to become internalized, then continuous upgrading of program and staff is necessary. For these reasons, it is absolutely essential that specially trained personnel be developed who can take leadership on the local

and regional level in implementing the new product. The development team's major dissemination concern should be the design and evolvement of this network of specially trained personnel.

5.3 Other

The professional literature could be a valuable aid in the diffusion process. The problem, especially at the elementary school level, is the fact that there seem to be an infinite number of journals, none of which is read by a large percentage of the users. Therefore, it is most difficult to communicate in this way.

5.0 Characteristics of the Communications Network: What are the communication mechanisms within the diffusion system that encourage or discourage the diffusion of innovation?

The role of mediated and interpersonal communication networks in the diffusion process is certainly important, but many teachers and other citizens seem to delight in the shadow of non-communication. Perhaps, they believe that to be lucid is to be found out. In all seriousness, however, I would argue that the mechanisms of communication are only part of the answer to diffusion. For example, many parents are unsympathetic to schools, not because schools are not "keeping up," but because the schools are changing too rapidly. Parents cannot even recognize "the school" as the place they remember. Many educators find an escape from the pressure of change and from the pressure to change by nurturing these parental sentiments.

Some educators, who do argue for change, base their argument on the premise that we must justify education extrinsically and this will, in turn, elicit support from reluctant clients. Thus, to such educators, communication networks are used to spread the word that "education is good for something." Citizenship, a job, a happy married life, better mental health, are examples of the messages coming out of the educational community that posit reasons for why we should run schools. Noble reasons all--but intellectually weak and dangerously misleading, at least to this observer.

The role of communication networks must address, then, first of all the nature and rationale of the educational enterprise. Second, the network must place much more emphasis upon the community outside of the educational establishment. It is becoming more clear, for example, that in those schools where school board members and parents are actively involved, innovation takes place. There is need for adult education--not basket weaving nor organic gardening, but education dealing with social change, social order, political

activism and the social system called school in all its complexities. Only with broad base support can allocations be made for future concerns--that is, a real research and development component of education that acts not in terms of what the market will accept, but in terms of what is right, both intellectually and humanistically.

Perhaps the most useful thing to keep in mind relative to a vital communication network is the ability to fit into ungoing and culturally-accepted modes. For example, to reach students you might have to use the local "pop" FM radio station. The early Christians understood this well when they agreed to have a celebration of the birth of Christ coincide with celebrations already going on.

One last point should be made relative to communication networks, and that is that they represent and present a system whose total impact is greater than the sum of its parts if and only if all parts are orchestrated. For example, it may be that the best way for schools in a particular state to address the implications of the 26th Amendment (to the Federal Constitution) for their social studies curriculum might be to organize meetings across the state basing such meetings on already established athletic conferences. There are some interesting advantages to this organization, not the least is travel time among schools and similarity of school size. Strength can be added to this organizational scheme by involving other people in media, e.g., the NCSS (its publications and organizational ability), ERIC, SSEC, universities, state departments of education, legislators, parents, students, etc. In this way, a network can be built that is on the one hand in touch with a national community and on the other hand uniquely regional. But it is, above all, a network or system and that fact is the key to effective diffusion.

5.0 What are the communication mechanisms within the diffusion system that encourage or discourage the diffusion of innovation?

Probably research and scientific journals have the least effect on diffusion of our product, although they have produced inquiries which led to other opportunties to publicize our work. We have found that publishers' notices and other sales efforts by publishers of basal series with a tutorial component probably have the greatest effect of all the mediated communications named in the questionnaire. Also we have found that interpersonal communications have more positive effects than do mediated communications.

Among sources of interpersonal communications, we have found that the sources of greatest effect are presentations by our staff (i.e. developers and authors), presentations and informal communications by State Department and intermediate personnel, exchange of information among users of our product and their colleagues and communications among publishers' representatives and school personnel. Students play little or no role in dissemination and implementation of our product. In communities where there is a parents' advisory group and/or other parents' groups, these groups often play an important role in implementation of our product. We often recruit both paid and volunteer tutors through these groups.

The support of classroom teachers is important to successful implementation of our product but their role in dissemination usually has been rather small. College methods teachers have actually inhibited diffusion of our product.

5.0 Characteristics of the communication network: what are the communication mechanisms within the diffusion system that encourage or discourage the diffusion of innovation?

5.1 Mediated communications

I believe that some people attend to mediated communications; most school people, however, are more interested in talking to someone who has used a particular new product than in reading about the product.

5.2 Interpersonal communication

Almost anyone can be an effective diffuser, provided he is persuasive and has credibility. Since I have already spoken of the role of advocacy in diffusion, I will focus on credibility. Credibility means that the diffusing agent is viewed as someone who "knows what he is talking about." For an academically oriented teacher, a history professor probably will have greater credibility than does an education professor. Similarly, the social studies consultants in a geographical area may give special attention to the views of one of their membership, the one who is perceived as being "on top of things." Credibility, therefore, is not defined in terms of particular traits. Rather credibility is in the eye of the beholder.

Obviously, an interpersonal communication from someone who is not only persuasive and credible but also powerful is more potent than an interpersonal communication from someone who lacks power. But power has its limitations, one can compel adoption but it is most difficult to force implementation. Indeed, sabotage, unconscious as well as conscious, can be used to resist "forced" adoption.

5. CHARACTERISTICS OF THE COMMUNICATIONS NETWORK: WHAT ARE THE COMMUNICATION MECHANISMS WITHIN THE DIFFUSION SYSTEM THAT DISCOURAGE OR ENCOURAGE THE MECHANISM OF COMMUNICATION?

It would be difficult to determine how important the role is of journal articles, film-strips, phamphelts, curriculum guides, books, published notices, etc. in the diffusion of innovative ideas and projects because they are available on such a massive scale. When one is able to indicate that he has had success with a particular kind of curriculum development or idea and shares it in an appropriate manner through proper channels he certainly affects the decisions of other people interested in the same thing. On the other hand it is very seldom that one who has had a terrific failure with an "innovative" project will ever publish and tell the world about his despair. One usually only talks about his successes mediated communications tend to perpetuate successful projects and to not publicize the failures. Success probably breeds success.

As one of the centers for reviewing teaching materials in the United States, we have been interested in what effect reviews have on implementation of products in the educational business and more particularly the field of science teaching. A recent dissertation done by one of our doctoral students indicates that there are certain groups that frequently use journal information, for instance, on making decisions on purchases. One such major group are school librarians who do make major outlays in the purchase of books and other types of instructional materials.

Frequently science and mathematics project directors forward on to us the comments they receive as a direct outgrowth of curriculum information found in The International Clearinghouse Reports that we publish. From these we have strong indications that such information does have a major impact, even on the international scale on innovative adoption. The project directors indicate that their products are given quite a bit of consideration by persons a great distances away and even in situations which they would not consider similar to those in which their staffs have been working or for which they had prepared the original materials. Certainly the interest expressed in materials which were shown as part of the exhibits at our recent ICSU International

Conference on the Education of Teachers for Integrated Science, with almost 200 persons from over 60 countries indicates a tremendous amount of interest in what others are doing. It brought about open discussion of how materials can be modified or adapted and eventually used in other situations. The large number of letters and phone calls that we receive at The International Clearinghouse from literally all over the world, indicates that people do want to know more of what is happening and the written word is certainly a valuable means of sharing ideas on innovative projects.

At the level of interpersonal communications there certainly is an effect on the diffusion of innovative products and ideas by a variety of kinds of people. Students must play a role, at least in their own school district, when they appear to be successful in their study and there appears to be some kind of direct correlation with work they have had or the kind of materials they have been using in a school system. Although student failures in educational programs may never be publicized there should be some way to have such information fed directly back to stop an apparently/otherwise successful project.

Teachers, through their regional and national associations, otherwise share ideas and help to diffuse the use of numerous products. The journals which they have read and in which they write, affect change a great deal. By their discussions with fellow teachers and their presentations at national, regional and international meetings they play a major informational role. The publisher representatives are an informational link in the chain that can contribute greatly to the diffusion process. The questions related to their own/of evaluation of their products before sale is still an important issue however. There are many educators in the field of science who feel that the publishers have much more of a responsibility to show the value of their particular products and how they could best fit into a school system than is presently ing presented.

Parents amd other community members, unless really organized or as part of an advisory body to a school district, may have less effect on the school than they think they have. Unless such individuals have gotten into a major issue, such as being either for or against a particular curriculum on an organized basis, or become members of the local school board, they have little impact, I'm afraid, on the innovative ideas that go on within the school's classrooms. Tax support may be their greatest contribution.

Developers of materials and authors of products certainly must have a role since they bring together or develop the ideas that will later be used. Of necessity these people have enough interest in their own product to see that it is discussed at appropriate meetings and that information appears in the proper journals. How often they can be truly creative, however, is an interesting question.

Subject matter supervisors and department chairmen frequently have the responsibility and the opportunity, to decide which materials will be finally purchased. They actually make, for all practical purposes, the final decision of the product purchases. They are influenced to some extent by their colleagues in the classrooms, but when requisitions are finally pulled together and put in the proper forms, its at their level that the real decision is made. Once a certain amount of money is allotted to them, they take the action.

College method teachers who have close ties to the realities of classrooms through the regular supervision or direct involvement with school districts can have a major role to play. If they are well informed they can share many innovative ideas with their students who are the future decision makers. When they come into a situation where they are responsible they should at least have a better basis on which to make the proper choices. Also college methods teachers frequently write textbooks which, when studied by other groups, do influence the changes which may occur. Unfortunately these sometimes are "after the fact" and cannot always be considered innovative.

At another level, the state departments of public instruction personnel can

have an influence on diffusion by being aware themselves of curricluar changes and then setting up the proper communication channels to supervisors and school districts. Some states are much more effective in this than others and the personnel roles are frequently defined in different manners from one state to another. At one point many of them working in science and mathematics were heavily involved in the writing of proposals for the NDEA Act and other U. S. Office of Education grants funds. In this way they had a major role in the dissemination of innovative products and ideas. In other cases when financial ties are not so directly involved they may be of less impact.

Through U. S. Office of Education and National Science Foundation funds a number of specially trained personnel have become actively involved in producing informational centers that affect the diffusion of innovative products and ideas. Certainly the summer institutes for teachers have had a major impact on the fields of science and mathematics. At institutions where the staff really was actively involved in curriculum development or implementation, the teachers were able to gain and share considerable information. Also, in institutions where large collections of curricular materials and hard and soft ware have been collected, there has been a great deal of visitation and conference-type operations that have diffused information on a large scale. An indication, for instance, of this would be the large number of persons, both domestic and foreign, who visit the International Clearinghouse just to see the science and mathematics curricular materials and to work with them. Much curriculum development work goes on at this type of center.

Special field agent types, such as those who worked back in the middle 50's with the American Association for the Advancement of Science's "Study on the Use of Science Counselors", had an impact on the diffusion of ideas and encouraged many spin-off projects such as those of the Oak Ridge Traveling Labs, the NASA Spacemobiles and the state agencies that now have maintained after their original NDEA Act funds specially trained personnel to regularly interact with the school districts in consultative

The leaders in professional associations certainly affect diffusion because they make decisions on what content goes in to the professional journals as well as what topics will be presented at regional, national and international conferences. Since these are major sources of information on innovative ideas these persons affect, either positively or negatively, the changes that will later occur. Also, through the selection of the caliber of person who will do the writing or the presenting of the information they indirectly determine how well it is received.

5.0 Characteristics of the Communications Networks:

What are the communication mechanisms within the diffusion system that encourage or discourage the diffusion of innovations?

The American Institutes of Research is attempting to locate and describe all the educational products developed since 1960, and to date, more than 1000 have so far been identified. The 3rd Edition (December 1972) of the CEDaR (Council for Educational Development and Research) catalog is in two volumes, totaling nearly 500 pages. The catalog is a compilation of select research and development programs and products from ten educational laboratories and nine university based research and development centers. The 1972 Report of the International Clearinghouse on Science and Mathematics Curricular Developments consists of 858 pages of descriptions for only two subject areas. Typically, these agencies do not list curricular studies nor educational products developed wholly by commercial publishing or equipment companies. Herein lies the communication problem.

A curriculum project without a newsletter, and whose developers do not present and display materials at appropriate state and national conventions, and whose authors do not write for professional education journals, and where the headquarters

staff does not answer inquiries, might as well not exist. Even if a project staff does all of these things well it may still not be enough to insure widespread diffusion of their product. A forthcoming report from the ERIC Center for Science and Mathematics will show that with all the efforts over the past decade to introduce better science into the elementary school less than eight per cent of children now in school come into contact with any of the innovative programs.

Herron's study of "teachers of new secondary school science courses" led him to the hypothesis that "teacher perception of new course materials, their structure, goals, and basic philosophy, is a problem that lies at the roots of resistance to curriculum change. Most teachers are simply handed (in one form or another) the materials to teach, with little or no knowledge of the philosophical points of view upon which they are based."[1] Hurd, with the support of private

1. Herron, Marshall. "On Teacher Perception and Curriculum Innovation." Curriculum Theory Network, No. 7, 1971, p. 48-49.

foundations, conducted a series of two-month long summer institutes for high school science teachers over a fifteen-year period in which the major focus was upon the rationale, goals, and learning assumptions implicit in the "new" science programs. Teachers selected for the program must have had five or more years of teaching experience, have been rated as outstanding

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teachers by their administrators, and have had a high academic record and strong ba ic preparation in one or more sciences. The purpose was to educate these teachers as "change agents" and leaders for their own community.[2] Television, radio and

2. Hurd, Paul DeHart. Shell Merit Fellowship and Residency Programs at Stanford University, 1955-1970.

newspaper items about each teacher were displayed in their home town area during the summer months to make the teacher conspicuous and to provide an "aura of authority". All the nation-wide curriculum projects provided pilot materials for use in the program so that the teacher could feel "ahead of the game". With these and other efforts we were able to stimulate approximately half of these teachers to assume positive actions for curriculum reform in their schools.

A Harvard University team of researchers in a nation-wide (700 colleges and universities) study sought to determine the emphasis given to the "new" elementary and secondary school science programs in methods courses required for the certification of teachers. "From the evidence it seems that the attention given to the new courses would have to be described as 'introductory' or 'descriptive' rather than 'preparation for teaching' ... less than 10% of the instructors devote intensive consideration to any one (of the programs)."[3]

3. Newton, David E. and Watson, Fletcher G. The Research on Science Education Survey. Cambridge: Harvard Graduate School of Education, 1968, p. 62.

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There has been a resistance among the majority of science educators to support the new curriculum programs because they were not included in the development process nor financially supported to diffuse or implement them in schools.

Subject matter supervisors (frequently general curriculum persons) early in the science reform movement got lost in the maze of new educational products. Take elementary science, for example; the following projects were active during the peak of the reform: SAPA, COPES, SCIS, ESSP E-SSP, ESSP (Utah), ESS, IDP, ISES, IPI, MinneMAST, SSCP, plus a Quantitative Approach in Elementary Science, the Webster College program, and others, not including nearly three dozen commercially produced programs. The supervisor's task is how to choose the program that best meets the needs of his schools. Hurd described the rationale, goals, subject matter, course organization, teaching and learning demands and compiled a comprehensive bibliography on nearly all of the experimental science curricula produced within the last 15 years. The intent was to provide supervisors with a "place to begin". The major criticism of the books (by the supervisors) is that the programs are not evaluated and no ranking is provided as to the "best" to adopt.[4,5,6]

4. Hurd, Paul DeHart and Gallagher, James Joseph. New Directions for Elementary Science Teaching. Belmont, Calif.: Wadsworth Publishing Co., 1969.
5. Hurd, Paul DeHart. New Directions in Teaching Secondary School Science. Chicago: Rand McNally and Co., 1969.
6. _____. New Curriculum Perspectives for Junior High School Science. Belmont, Calif.: Wadsworth Publishing Co., 1970.

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The communication chain or network for disseminating information on educational products, it seems to me, is yet to be perfected. The culture of schools seems not to encourage change and thus there are few positive efforts to seek out or try new programs. School people rarely carry on a continuing search for ways to improve the effectiveness of education.

5.0 Characteristics of the Communication Network -

It appears crucial that someone within a system believes that their role requires them to keep up with new developments in social studies education. Sometimes an individual teacher assumes that function. Often, but not always, social studies department heads and supervisors perceive their role requirements to include reading journal articles, publishers notices, and new books and attending local, state or national meetings. If the individuals who are receiving messages from an outside network, also believe they should disseminate information they acquire to members of their system, then diffusion is likely to take place. It appears that mass media channels are important for disseminating information to this minority of people, but in turn they must pass their knowledge on to colleagues. Opinion leaders without such sources of information will help to preserve the status quo. Diffusion also will not take place if well informed innovators do not share their information with opinion leaders.

Subject matter supervisors and department heads are most often the key to diffusion. If they receive information from external systems and disseminate it internally, then diffusion of innovations is likely to follow. However, if those key individuals do not exercise either retrieval or dissemination functions,

diffusion does not seem to result. As I traveled around the country presenting American Political Behavior (APB), I was continually struck by the fact that supervisors and department heads had the greatest potential for facilitating or impeding diffusion. The most innovative districts always had a good retriever-disseminator as a supervisor or department head, and the least innovative systems never did. Such people would arrange for consultants like myself to meet the opinion leaders. They would brief me on the teachers' concerns and suggest what they thought would be an appropriate strategy. They set up workshops and in-service meetings to create awareness or to persuade. They put sample materials and descriptive brochures and articles in the hands of those who are influential in the adoption system. At the trial stage they provide the necessary supports to prevent discontinuance.

Students are probably the most important to diffusion at the trial stage. If they provide positive feedback to the teacher who tries an innovation, and if they tell other students, teachers, counselors, administrators and their parents about their positive feelings toward an innovation, diffusion will take place. Conversely, a negative student response may contribute greatly to discontinuance. Teachers have a similar power. If they feel that

their trial was not successful, they will discontinue use of an innovation even though it has been purchased and must remain in their room. Teachers who tell others of their positive or negative experiences with a trial have much influence in the diffusion or lack of diffusion of an innovation. If a pilot teacher for APB was in a particular district, their attitude determined the willingness of other teachers to try the program.

Publishers representatives are particularly important in informing potential adopters who are not retrieving information from the network among innovators. As a consultant working with publishers representatives, I was often creating awareness in people who had never heard of "the new social studies" programs. The salesperson had often sent letters to all government teachers in the area inviting them to attend a presentation on American Political Behavior. Sometimes they took me to meet individuals who bought other books from them, but who did not know about "the new social studies."

Parents and other community members sometimes organize for the discontinuance of an innovation, as has happened recently in several Indiana communities. I am not aware of instances in which they have been a positive force for change.

Developers of materials and authors of materials, who have made themselves highly visible to teachers and who have made efforts to personally meet opinion leaders, facilitate diffusion. The fact that so many people felt they knew Mehlinger and Patrick resulted in many people being favorably disposed toward their products.

A few people I met had learned of APB or other new social studies projects from college methods teachers. Most, however, did not receive information through that channel either because they had not recently had a methods course or because their professors did not emphasize the new projects. This may be an underdeveloped resource for successful diffusion, or may simply not be an effective channel.

State department and intermediate personnel also do not seem to be major channels for diffusion. In a few states they do influence state adoption policies and the development of curriculum guides or they sponsor workshops. The potential adopter in the local school district rarely makes reference to state personnel.

Social studies field agents have been extremely effective in informing social studies teachers about innovations. Many teachers who are pleased with the innovations they have adopted report that they had not heard of the new program prior to the

field agent's year of training. The field agents seem to be instrumental in getting other members of their departments to read journals and to attend professional meetings. In several cases they have initiated the idea that the department conduct a re-examination of their program. The field agents serve as channels for dissemination, supports in implementation, and catalysts in creating norms that are conducive to continual self renewal and innovation.

5.0 CHARACTERISTICS OF THE COMMUNICATIONS NETWORK: WHAT ARE THE COMMUNICATION MECHANISMS WITHIN THE DIFFUSION SYSTEM THAT ENCOURAGE OR DISCOURAGE THE DIFFUSION OF INNOVATION?

5.1 Mediated Communications

5.11 What role do journal articles, films, pamphlets, books, curriculum guides, publishers notices, etc., play in the diffusion (both dissemination and implementation) of innovative ideas and products?

I place a great deal of stress on the role of such mediated communications as journal articles, books and publisher's notices. With respect to journal articles I can cite the fact that by far the most significant communication that I conveyed to various social studies teachers in several schools situated in four Central American countries was the April, 1970 issue of Social Education, which featured reviews of 26 social studies projects. It is difficult for those of us who spend most of our time within the United States to appreciate the sense of academic and intelluctual isolation felt by teachers in schools located outside the United States. Information about new programs was an eye opener for many of these teachers. This experience was replicated when I had occasion to consult with various Department of Defense schools in Okinawa and Japan in 1971. I recall especially one elementary school principal who was very much intrigued by the journal articles, publicity blurbs and my own evaluative information about the MACOS program. She even went so far as to make a formal request that a person from the Educational Development Center be invited to conduct an in-service workshop in Japan. Unfortunately, there was a major shift in personnel and assignments shortly after this request was made and it was never implemented.

Another example, also in a cross-cultural setting, which highlights the importance of written communication occurred in consulting work with the Ministry of Education in Thailand. In the course of an extensive study of secondary education in that country, we established several subgroups which were to address themselves to such topics as the history of education in Thailand, the social foundations of Thai education, the secondary school curriculum, and the relation of the schools to power needs. Particularly with respect to the curriculum subgroup I recall that

one highly placed official within the Ministry prepared a preliminary draft that was almost a replication of the main ideas in the well-publicized American Educational Policies Commission publication Education for All American Youth. Of course, one can readily question the wisdom or appropriateness of such wholesale transfer, but the essential fact still remains: Such written communication do indeed exert a powerful influence on curriculum builders.

5.2 Interpersonal Communications

5.21 What roles do the following persons play in the diffusion of innovative products and ideas?

(1) Students - Sometimes a very significant role --especially in the case of student teachers (See my comments under 4.5)

(2) Teachers - Here I would judge that the role of the teachers is more apparent when they are blockers of proposed innovation then when they are originators of innovative ideas. A basis for this generalization is simply a look at the 26 projects surveyed in Social Education. In general, teachers were not the prime originators in most of these projects. But they certainly do play a significant negative role if they are opposed to the implementation of any one of these.

(3) Publisher representatives (textbook salesmen) - Given the nature of our economic system and they way in which commerical goods are distributed, I would have to place a great deal of significance on the role of publisher representatives. A particularly appropriate example here is the Minnesota Project Social Studies. Many of us who inquired about the progress of this project during the 1960's were resigned to the fact that we would not get any substantive materials on the project from the original developers. Now that it has "gone commercial" the publishers are flooding the schools and convention display booths with their products.

(4) Parents and other community members - No data available.

(5) Developers of materials and authors of products - I would identify these as the most significant factors in the entire diffusion process. Not only must they be competent enough to produce theoretically and practically viable curriculum materials, but their active participation in demonstrating and describing their products provides the single most effective king of salesmenship that could be attached to any innovative project.

(6) Subject matter supervisors and department chairmen - No data available.

(7) College methods teachers - Recognizing that my response may be biased in view of my position, I still feel that these individuals do indeed play a highly significant role. Several times my students have expressed genuine surprise (and even appreciation) in finding out about curriculum projects that they would not have learned about, or would not likely learn about, by means other than the methods courses. I should like to make another observation. I am not so naive as to assume that all of the new ideas that are dispensed to students in methods course inevitably and immediately find expression in their student teaching. But an interesting phenomenon is the "hanging fire" affect that some of these new ideas have. Many of my students have said that they did not incorporate much of what they were exposed to in methods courses because the student teaching situation in which they found themselves was not conducive to such innovation. But they expressed a strong desire to try out these new materials and approaches once they were on their own in their teaching jobs.

(8) In one particular case (concerning the social studies coordinator for the State of Michigan) the impact of State Department of Education personnel has been substantial. In this instance the person holding the leading social studies position in the department also was in on some of the development phases and early training workshops for the Taba program in elementary social studies. As a result he held several training sessions with various school personnel throughout the state over a period of two or three years. There is no doubt in my mind that the impact of these training sessions has been felt throughout the state to a much greater degree than it would have been had this particular person not been involved in the Taba program. I recognize, of course, that this is a special situation and happens to represent a coincidence of position and previous experiences. But I think it is reasonable to infer that other State Department personnel who have had close experience with other programs are in a similar position to do an effective job of diffusion.

(9) Specially-trained personnel - I shall limit my remarks here to summer institute directors and specifically to those who have directed workshops in economic education sponsored in part by the Joint Council on Economic Education. Having been a director of three consecutive such workshops, I can say, on the basis of experience, that this position enabled me to diffuse a considerable amount of information, materials, and new points of view concerning the teaching of economics. (Here again I am not so naive as to assume that diffusion has necessarily resulted in implementation in the classroom.) Aside from the usual units of work and other materials prepared by teachers in these workshops, there was also the spin-off of a high school textbook in economics co-authored by the workshop director and two of the economists who were also staff members of the workshop. Although the workshops were held in the New England area, the subsequent textbook that emerged was used (albeit not in tremendous numbers) in other geographic parts of the U.S. and was on the state adoption list in Texas.

(10) Leadership in Professional Associations - A very decisive role is played by leaders in professional associations in the diffusion process. Aside from

the formal kinds of program meetings which are a normal part of professional organizations, another highly valuable communication network is the informal contact that takes place at these professional meetings. Here again I have heard about teachers in the field who went back to the classroom and carried out some innovative program following their conversations with individuals who were associated with the production of such materials.

Another important communication medium at these meetings is the informal evaluations which people who have been associated with various projects make of the deficiencies connected with their project or somebody else's. These informal evaluations are highly valuable and sometimes are more realistic and honest than those that appear in print.

5.0 CHARACTERISTICS OF THE COMMUNICATIONS NETWORK: WHAT ARE THE COMMUNICATION MECHANISMS WITHIN THE DIFFUSION SYSTEM THAT ENCOURAGE THE DIFFUSION OF INNOVATION?

5.1 Mediated Communications

5.11 What role do journal articles, films, pamphlets, books, curriculum guides, publishers notices, etc., play in the diffusion (both dissemination and implementation) of innovative ideas and products?

Among university personnel these all mean quite a lot, but among public school personnel not much, I think.

5.2 Interpersonnel Communications

5.12 What roles do the following persons play in the diffusion of innovative products and ideas?

Students -- very little, really not much

Teachers -- some, but not much

Publishers representatives -- really not much, I found most publishers representatives know very little about their own products in academic terms such as learning theory, rationale, place in the curriculum, etc., and practically nothing at all about other products

Parents and other Community members -- a small amount

Developers of materials and Authors of products -- probably has the most influence of any source in the dissemination of their products.

Subject matter supervisors and Department chairmen -- very little influence from my experience, but a little more than teachers and students

College methods supervisors -- some are quite influential

State department and intermediate personnel -- can be quite influential

Specially-trained personnel -- probably the most potent and influential source of diffusion

Leadership in professional associations -- for those who attend meetings it is a powerful source of dissemination

5.0

CHARACTERISTICS OF THE COMMUNICATIONS NETWORK: WHAT ARE THE COMMUNICATION MECHANISMS WITHIN THE DIFFUSION SYSTEM THAT ENCOURAGE OR DISCOURAGE THE DIFFUSION OF INNOVATION?

5.1 Mediated Communications

5.11 What role do journal articles, films, pamphlets, books, curriculum guides, publishers notices, etc., play in the diffusion (both dissemination and implementation) of innovative ideas and products?

The roles vary, the critical factor seems to me to hinge on the extent of the audience. Most advertisers anticipate about 1 response per 100 inserts. Thus, saturation advertising in popular teacher periodicals is likely to be far more effective than a 1,000 piece direct mailing or a journal article in a journal to which few schools subscribe.

5.2 Interpersonal Communications

5.21 What roles do the following persons play in the diffusion of innovative products and ideas?

Students (Children and young people in public schools) very little.

Teachers - Can play very important roles but must be trained to do so.

Publishers reps - I believe the singularly most effective role.

Parents/community members - not much

Developers of materials and authors - These people rarely play much of a role in the diffusion system. My experience suggests that they are neither trained for nor have the time for the enormous contact task that diffusion demands.

Subject matter supervisors and department chairman (in public schools) Play a very important role - perhaps next to the publisher's rep.

College methods teachers. The potential is high, in actuality, their role is not immediately felt but as they develop a cadre of knowledgable teachers, they have a strong long-lasting effect.

State department and intermediate personnel. The role and effect varies. In states with specifically designated subject-oriented supervisors who have ties with funding dollars, effects can be strong. In states with generalists, effects are reduced markedly.

Specially-trained persons. The problem here is that there are not many of them. They are effective, but their total contacts are limited.

Leadership in Professional Associations (Professional Meetings) Strong effect, limited audience. In general, the audience is supportive of innovative efforts. There is a second problem which has to do with the competence level needed and the reward provided. I have found that without adequate support, the most zealous and dedicated are not able to affort to invest large portions of their effort in this direction.

5. THE COMMUNICATIONS NETWORK

a. The interpersonal is more powerful than the mediated - but it is severely limiting.

b. Journal articles have almost no impact except:
(1) getting developers invitations for personal appearances, and
(2) getting fugitive materials a limited circulation.

c. Publishers blurps are probably more effective than journal articles. They need some sort of salience to get them to stand out from the mass of mailed advertisement.

d. Personal contact with the developer:
(1) gives teachers status,
(2) produces an effective affinity in teachers for the materials independent of the content, and
(3) the quality of contact is important. Teachers turn off developers if they perceive them as condescending or as coming from the "tower" with the message.

e. Contact by publishers representative is powerful as a follow-up to other contacts.

f. State social studies supervisors can get current projects exposure even in remote areas where they would not otherwise hear of it.

g. Dissemination should be part of initial conceptualization of curriculum.

h. It may be necessary to adjust to publisher's needs by not abandon basic ideas such as flexibility, modularism, etc.

i. Some people disseminate (glut the channels with stuff) but fail to diffuse. The latter means to find out what specific audiences need and provide precise materials. It may be as much an error to give a client too much materials as it is to give him too little. (This idea from the Education Information consultant materials developed at Far West Lab.)

5.0 Characteristics of the Communications network: What are the communication mechanisms within the diffusion system that encourage or discourage the diffusion of innovation?

5.1 Obviously one must have knowledge of an innovation before one can consider it for adoption. Formal mediated communications, however, are usually only low level cursory descriptions, advertisements, and propaganda about innovations.

5.2 There is some evidence from the High School Geography Project and from Econ 12 that those persons writing letters of inquiry to the project and the project field-test teachers played major roles in diffusion of information about these curriculum products.

Of all the potential diffusers, to me the most significant ones in order of importance are: 1) curriculum developers, 2) publishers representatives, 3) presenters at professional meetings, 4) school district subject matter supervisors, 5) teachers.