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ANY society is a sum of its many parts. If a society is one in which change is taking place at an accelerated rate, then it of necessity follows that its component parts must also be changing at a rapid pace. Changes within any particular institution may be based on a chance factor, on a desire to change just to try something new, or on a pragmatic plan of action.

The innovation initiated to improve on the status quo, either in process or product, is the key to the historical development of each area of man's endeavors, even in those fields as diversified as agriculture, industry, or education. The pragmatically planned change may be motivated altruistically for the good of society, economically for the benefit of some group of individuals, or a combination of the two in which the gain for the few is dependent upon their improving the services and products which they provide for a larger part of society. In a society, as rapidly developing and as complex as ours, a change in one area will have far-reaching consequences which will spread into a diversity of related, and sometimes seemingly non-related areas.

The major criterion for innovation must be that it seeks to change what existed so that what is created is better for the society which it serves. Such innovations, to be pragmatic, must be

## Criteria for Innovations

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based on a series of research and developmental procedures which in themselves form criteria from which to evaluate the change. The following questions must be answered: 1. Is the proposed change directly related to identifiable needs of society? 2. How does the existing system fail to meet those needs? 3. Are these same needs successfully being met by other approaches already in operation in a different location? 4. Has the proposed change been examined in terms of its relationship to pertinent researched data? 5. Can such a change be adequately evaluated before and/or after

it is put into operation? 6. Viewed within the total of which it will be a part, is the change pragmatic in its effect on other areas?

The three areas, agriculture, industry, and education, share the major criteria for innovation. However, beyond this point, the systematic questioning necessary to validate a specific change is frequently lacking in education. In its approach to on-going innovation, education can justifiably be criticized for areas which it could and should change.

Agriculture and industry realize that innovation, essential in meeting the changing needs of society, is a full time job requiring money and trained personnel. Evidence of this attitude is shown in their on-going research programs which both add to basic knowledge and supply pertinent data to the research personnel who are formulating possible innovations. This in itself is a vital difference if these two institutions are compared to education. All too often in education, even in relatively progressive districts, innovations are researched, developed, and evaluated by curriculum committees who donate their time at the end of the school day. Certainly these individuals are to be commended for their interest and dedication; however, is education to be commended for this, at best, surface approach to its development? The curriculum committee may well have the ability necessary but it rarely has the time and energy necessary for a systematic approach to innovation.

The needs of society which agriculture and industry must attempt to meet can at any particular time be identified and listed, often as specifics, down to

such items as the increase of the yield per acre for a particular crop or the need for a more adequate braking system for an automobile. The hypotheses developed to better answer the identified needs will be realistic because they will not repeat what historically has already been done or what currently exists in another area. The nature of these industries permits them to pretest the hypotheses in controlled situations. The theory of a new braking system is not put into the year's new models to see if it will work. An idea for a better fertilizer is not sold to the farmer on the basis that it might work, but that in terms of research it should work. Once in operation, it is relatively simple to determine whether or not the particular innovations have been successful.

Education encounters immediate difficulties when it attempts to define its objectives in terms of the needs of society. Certain objectives, such as the need to lower the illiteracy rate, can be clearly stated so that the question of innovation is concerned with identifiable areas of the curriculum. On the other hand, many of its objectives remain in necessarily ambiguous statements about preparing the child for adult citizenship and a meaningful life. It is difficult to specify the components for such objectives.

The second problem is met even when the innovation being attempted is clearly definable. Attempts to find out what has been tried in the past, what is being tried in other areas, and what researched data exist are extremely time consuming and frequently unfruitful because the necessary communication channels do not exist. Be-



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cause of these limitations, education is too often guilty of expending time and effort to re-invent the wheel.

Education cannot adequately determine the success of a particular change through a controlled laboratory situation. It has to explore the innovation on a trial and error basis in a variety of ordinary classrooms. Frequently, once the change goes into effect it is not adequately evaluated and what starts out as a trial persists as established practice even though in actuality, it may be invalid. Education must provide qualified personnel with the ability and responsibility to do the essential work of evaluation.

### Aids to Innovation

Education may have to continue its present approach to innovation simply because financially it can not afford to do otherwise. If this is the case, then it must streamline its thinking within its existing frame of reference and realistically concentrate on quality of innovation rather than quantity. The innovations which it does attempt must be carefully considered in terms of effect. At this time, the sophistication of industry is offering education all sorts of potentially invaluable teaching devices. To use the most obvious example, education must not purchase the television sets unless it provides the necessary program development to validate them in terms of educational objectives.

Financial limitations have restricted educational innovation in both scope and methods. The Elementary and Secondary Education Act of 1965 (P.L. 89-10), in essence gave education the opportunity to explore innovation without these financial limitations. Title

III, ESEA, designed to encourage "Projects to Advance Creativity in Education," offered local school districts financial aid to develop programs which were innovative at the local level and exemplary to the point that they could be used as models for other systems.

In terms of the amount of money spent, the variety of programs being developed throughout the nation, and the safeguards used to insure the quality of those programs, Title III, viewed in its totality, has the potential to make significant contributions to educational development locally and nationally. The significance of the potential value of this federal aid is inherent in certain key factors.

The first key factor is in the availability of planning grants. A district does not have to move directly into an operational program but can first be funded to permit the proposed innovation to be carefully researched and developed.

The second key factor involves provisions for evaluating proposed innovations. To be funded, the project must prove that it has a satisfactory plan for evaluation. The time and personnel to carry out the evaluation is a valid part of the individual project's budget.

The third vital area results from the two preceding factors. Because Title III projects represent systematically researched, developed, and evaluated innovations, they will make a significant contribution to the body of reli-

able data pertinent to curriculum areas covered by the projects themselves. At this time, the United States Department of Health, Education, and Welfare has the responsibility for realizing the significance of this data and providing the means for organizing it into a communicable form.

The significance of Title III at the local level might be illustrated through brief remarks about the Arts and Humanities Education Program in Colorado Springs, Colorado. Focusing on the stated need of society, to strengthen the influence of the arts and humanities, this program seeks to explore ways in which education can better answer this need.

In essence, the program is a massive exploration of ways and means of relating the arts and humanities to all curriculum areas at all grade levels, K-12. Its potential lies in the invaluable experience which such exploration affords the development of the arts and humanities as focal points for specific curriculum innovations.

Educational innovation will always face a more complex problem than will either agriculture or industry. However, with the availability of federal funds, education has both the opportunity and the responsibility to correct two of its major weaknesses. Given this aid, innovations must be organized into a body of significant data which can easily be retrieved by local curriculum developers. ❧



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