Innovative Behaviour and Teacher Education

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Introduction

The term "innovation", introduced into the educational vocabulary about 15 years ago (Husén, 1971) enjoys a steadily increasing popularity among social scientists. We must look with scepticism at every term that gets into the phase of "inflation" with a corona of positive connotation like improvement and other rather diffuse concepts of better life. Nevertheless we will try to analyse what is meant by the term innovation in the scientific discussion of today and what are the implications for teacher education.

The three goals of this paper are:

1. to examine—within the framework of criticism of American innovation research—why relatively little attention has been paid to the relationship between teacher education and innovative teacher behaviour.

2. to outline a concept of innovative behaviour within a social and economic framework, in contrast to the ideology of classical innovation research.

3. to report on theoretical and empirical approaches which have been attempted, in the course of a study on teacher education in the Federal Republic, at the Institute for Educational Research in Berlin, concerning relationships between innovative behaviour and teacher training.

Despite the different cultural background and the entirely different structure of the school system of the United States, the first section of this paper will focus on innovation theory and research in that country, because many of the trends and problems concerning planned change in education, which are gradually appearing in the German Federal Republic, are much more elaborated in the USA. The criticism, that will refer to the social premises, underlying innovation research in the USA, might be seen at the same time as a critical view on similar tendencies in European countries and as a feedback to the framework of research prevailing up to the present.

I. *Critical Comments Concerning American Theory and Research on Innovation*

Research on innovation in education has been decisively influenced by two approaches to change processes:

a) The small-group research of the National Training Laboratories (NTL), practised in "laboratories" and "training groups", concentrated its efforts to change the educational system on the *individual,* i.e. on changing the individual's attitudes and social behaviour. This fact has become evident in the concept of the change agent as the initiator of planned change in complex systems. Although sensitivity training enjoys a steadily increasing popularity in many European countries, we must point out here that it is an error to transfer conflict-solving strategies (such as compromise) which have been successful in small groups to macro-structures with their manifest or latent power structures and their ideological antagonisms. This error is due to a purely

psychological approach and a very idealized, yet formal understanding of democracy.[1]

b) Rogers (1962), Miles (1964), Carlson (1965) and other researchers, continuing and extending the efforts of Mort (1964) and influenced by the results of rural and industrial sociology, assume that the success of implementation processes is greatly determined by system variables like organizational structures, communication networks or management procedures. Although, in contrast to the NTL approach, much more attention is paid to the social system, and its socio-economic conditions, the individual and his change behaviour remain the focus. Success of dissemination strategies is measured in terms of an all-or-nothing dichotomy of adoption or rejection of an innovation by the individual.

After the sputnik-shock (Brickell, 1964) there was much stronger financial support for educational projects and, in consequence, a growing interest of business in the "educational market". Another source for the subsequent rise of research on innovation in education, in the framework of the two approaches mentioned above, was the coincidence between the socio-political premises of this research and those of the official educational policy with its ideology of efficiency and its compliance to profit interests. It can be shown, looking at the definitions of "innovation" and "planned change", that research on innovation was made a device for system stabilization:

Miles (1964) defines innovation "as a deliberate, novel, specific change, which is thought to be more efficacious in accomplishing the goals of the system" (p. 14). Buchanan (1969) identifies planned change with organizational development "which has the task of helping managers and administrators to improve the effectiveness of their organizations" (p. 1). The advantages of innovations in the educational system are in "any one of several directions—increased profit—greater output—improved product—reduction of unpleasant working conditions" (Woods, 1967, p. 28). The fact that empirical research focussed on problems of implementation and dissemination strategies must be seen against the background of such definitions which reduced planned change to system-immanent improvement. Indeed, the obstructive effects of an authoritarian and bureaucratic administration is lamented but strategies are drawn from public-relations procedures of industry.

Three other principles, growing out of research findings may be stated which had a great impact upon the education of teachers and which illustrate the system-stabilizing effect of research:

1. *Innovations can only be implemented if there is no conflict between the innovations and prevailing norms of the system* (cf. Woods, 1967; Watson, 1969). According to Rogers (1962) the function of the change agent is to be acquainted with the norms of the system to such a degree that he will be able to select appropriate innovations and to fit them into the existing structure. It is evident that under this aspect technical innovations may be introduced much more easily.

2. *The teacher plays a subordinate role in the innovation process.* Although the participation of teachers in planning and testing of new educational contents or technical innovations is stressed in all kinds of well-meant statements concerning democratic change in the educational system, empirical investigations reflect nothing more than the actual situation: "Teachers are not change agents for innovations of major scope. Even when free to guide their own activities, teachers seldom suggest distinctly new types of working patterns for themselves," (Brickell, 1964, p. 503). The results of studies like this give normative force to subsequent recommendations of innovation strategies. Teachers often function as an obstructive element in so far as they do not

[1] Bennis (1966) provided an example for an understanding of democracy, which is rather naive from a political point of view: he tries to transfor results from small-group-dynamics to "development and evolution of human organization" as a whole.

simply play the ascribed part of an "innovation consumer", so that the application of "democratic methods", such as decision-making in the sense of Lewin's "unfreezing", is recommended to the school management in order to push the implementation process to a successful end (cf. Woods, 1967; McPhee, 1967).

3. *The higher levels in the authority structure like principal, school administrator, school superintendent are thought to be strategically the most important positions for the implementation process* (cf. Carlson, 1965; Eichholz and Rogers, 1964 and others). "New types of instructional programs are introduced by administrators. Rearrangements of the structural elements of the institution depend almost exclusively upon administrative initiative." (Brickel, 1964, p. 503). Halpin (1966) demonstrates that the existence or absence of an "open climate" in schools depends upon the attitudes and the behaviour of the principals. Fox et al. (1965) reports similar results.

Rather consequently, research on characteristics of innovators focussed most exclusively on persons in administrative positions (cf. Carlson, 1965; Hinman, 1966; Johnson, Carnie and Lawrence, 1967; Halpin, 1966, Rogers, 1969) with few exceptions involving "simple" teachers as objects for studies into innovative personality (cf. McLimas, 1967; Marcum, 1968). The results, however, are often poor, sometimes trivial and in many cases on a low level of methodological sophistication. At the present time they do not represent more than an accidental mosaic. They do not represent a consistent concept of the innovative personality.

Another more decisive fact may be a consequence of the empirical evidence described above. Since the teacher plays a rather subordinate part as a passive recipient in the process of innovation, in contrast to higher levels of school administration, there are in fact many meetings and conferences on management and administration of innovation for the further education of administrators. Teacher training, however, with its great research activity and its readiness to try new programs, is almost exclusively concentrated on the training of social behaviour in the classroom, on acquisition of knowledge (using "innovative methods" for transmission) and on specific areas such as education of culturally disadvantaged children. Programs for education of innovative teachers and research on contents, methods, and organizational patterns most appropriate to prepare student teachers for innovative activities in the school system are, as far as we know, rather scarce. Only in recent years, since an alienated generation of students has begun to demand change within educational institutions and the surrounding society, have a few cautious attempts been made to train teachers explicitly for innovative behaviour, for instance at Teachers College of Columbia University (1968; Joyce, 1969) or at the Cooperative Educational Research Laboratory (CERLI, Goldman, 1969). In these programs the socio-political aims of innovative teacher behaviour are discussed and special courses for preparation for the role of change agents in the school are developed (see also Allan and Krasno, 1968). But these experiments also seem to be determined by a restricted definition of innovation.

The circle of system confirmation seems to be closed: It implies the empirical description of the present conditions in the system, the transformation of these results into strategies for change in education, and, finally, the training of those recognized as significant for implementation of innovations. The function of the school as a mere service sub-system of the specific economic production process has not been reflected on or criticized. Thus research on change in the system contributes to the stabilization of this system.

II. *Theoretical Outlines of Change in the Conception of Innovative Teacher Behaviour*

In order to go beyond the starting points in American research on innovation described in the first part of this paper, we have first

to realize that innovations in fact represent materialized expectations of "improvement". However, innovations are basically ambivalent in their consequences, since we cannot clearly decide from the beginning whether a specific innovation is only providing system change by maximizing efficiency within the existing structure or whether it implies further system-transcending impulses. For this reason, the persons, the methods and the rationale involved in the process of realizing one initiative or a series of initiatives are of greater importance than the (primarily intended) idea of this initiative (Schumpeter, 1939). It has been shown in the course of our argument, that research on innovation without a critical concept of society and without persons who translate this argument into adequate research projects or political decisions will reduce ambivalence in innovation in favour of a durable strategy appropriately adapted to system maintenance. The same degree of interest and enthusiasm that is given to new curricula, methods, and media, should be focussed on teacher education to train teachers who are able to channel the always existing ambivalence inherent in new materials, contents and organizational procedures into the direction of progressive changes in society. As a first step, we have to transfer our interest from "innovation" to "innovative teacher behaviour". This would permit a clearer understanding of the consequences of innovations, though a final conclusion about the direction in which ambivalence in innovations is chanelled may be drawn only on the basis of information about the intentions, political concepts, and psychodynamics of the behaving individual. For a definition of innovative behaviour, in this sense, a critical analysis of the existing conditions in western capitalistic societies is necessary. In this context, school must be seen as a service sub-system of productive society (cf. Basso, 1969) having the function of producing the qualifications needed for a production process which is becoming increasingly complicated and differentiated. Another very important function of the school system, corresponding to the first one mentioned, is to provide those needed dispositions that are necessary for the consumption of products within a framework of controlled demand and for system maintenance in general. At present these needs still have an extremely "autocratic-privatistic orientation" (Schacht and Streeck, 1970): private consumption, private leisure, social security and high status. The system remains in a state of stability if coincidence exists between socialized needs and the sources of satisfaction which at present are controlled by a technocratically oriented administration. This harmony exists to a certain degree in many industrial nations, where technocracy, in the course of an expanding interventionism has moved away from simple strategies of crisis-management to a policy of long-range planning with goals of modernization and growth. In the educational sector of the Federal Republic of Germany this trend has become evident through the formation of the "Bildungsrat" and the "Wissenschaftsrat" (two different Councils on Education and Science) and through their recommendations, and in the 1970 Educational Report of the German government.

Although it is too simple to disqualify these policies of long range planning as merely a conservative consideration of the coincidence between needs and devices for need satisfaction, they offer, in a broad sense, only a system-stabilizing strategy. The school may give impulse for change in the existing power structure by disrupting the harmony between needs and satisfactions. This may be done through the creation of new motivational patterns and corresponding cognitive structures (i.e. a new consciousness) which, under the present conditions, can only be satisfied under more democratic circumstances. Sensitivity to new motivations like the needs for self-realization, autonomy, reduction of alienation, "cultural and political activity" (Etzioni, 1968) is increasing markedly within groups where the basic needs for consumption and security are provided for (for example

student and pupil groups in almost all western countries) and becomes evident in an active criticism with regard to the social system.

Innovative behaviour of teachers would be an activity of promoting and selecting contents, materials and organizational devices with the goal of progressive change of social conditions, and with regard to the new need structure and corresponding cognitive and emotional patterns of pupils. The innovative teacher in this sense is no passive recipient or enthusiastic executor of all kinds of new ideas on innovation in education. He uses new technical media and courses to provide his pupils with the basic cultural techniques, and therefore, for an observer, this aspect of innovative behaviour, as we understand it, is not easily distinguished from the passive adoption of all new media, as they were recommended by the establishment. To make this distinction we would need to look at other aspects of the behaviour and perhaps have to know more about the goal of the individual.

Innovative behaviour is, in the main, an eminently active political behaviour. On the one hand the teacher channels the ambivalent character of innovation in the direction of self-autonomy and of a critical and political engagement of the pupils. On the other hand he is working with other teachers for change in the structure of the school. He thus provides improved conditions for his own innovative teaching activities. These behaviours can hardly be expected from school bureaucracy as the agent of the technocratic planning-system. But within the framework of long-range planning in the educational system—intentionally or not—vacancies for innovative teacher behaviour are established.

III. *Investigations, Undertaken at the Institute for Educational Research, Berlin, into the Relationships between Innovative Behaviours and Teacher Education*

The practical consequences to be drawn from the American experiences and the theoretical concept of innovative behaviour outlined above might lead to some speculative reform propositions. But, if empirical research is chosen as the starting point for a revision of teacher education, this approach will be confronted with a dilemma between the theoretically formulated conceptions of a society and school system subject to change and the actual research field which is structured by precisely those norms which are intended to be changed.

There are two major approaches to empirical research: first, the experimental approach with its methodological advantages and disadvantages as far as generalizability from experimental results to the structural complexity of educational systems is concerned, and second, field research within an institution of teacher education. If we choose the second approach, it is necessary to hypothesize that a research field like this is not a totally homogeneous structure. Therefore, even in the present state of affairs, tendencies would become evident which lead to innovative teacher behaviour. Moreover, training conditions could be pointed out which—from the viewpoint of the present system—might seem dysfunctional for the development of innovative behaviour, but which, from a wider point of view, must nevertheless be looked upon as functional for this development. It is more likely that these hypotheses will be correct for teacher education institutions which are in a lesser degree formalized and differently substructured. To base an empirical research project upon these assumptions might imply the following three aspects:

1. operational definition of innovative behaviour based on the theoretical concept as well as on the actual conditions in the existing systems of teacher education;
2. definition of the qualifications (Robinsohn, 1967) characterizing the teacher's personality related to innovative behaviour, —in short, the dynamics of the innovative personality;
3. exploration of a complex and multivariate educational system in order to deter-

mine those variables exerting the utmost influence on innovative behaviour or on innovative personality variables, which—vice versa—are supposed to be related to innovative behaviour.

A research group at the Institute for Educational Research in Berlin[1] has made the attempt to realize some parts of this design, using the framework of a study on secondary teacher education and focussing on pre-service training, as follows.

1. *Construction of Innovative Behaviour Dimensions.* The operationalization of innovative behaviour must, on the one hand, grow out of the outlined socio-political conception of innovative behaviour and on the other hand, take into account the conditions of the system (in this case teacher education in the Federal Republic of Germany) in order to avoid the construction of behavioural patterns that cannot be found at all in the teachers' behaviour repertoire. Thus, when operationalizing innovative behaviour, we have to take into consideration for instance, that the problem of the application of new media and methods in Western Germany differs considerably from that in the USA. In view of the few possibilities and the general conservatism of the surrounding educational system, independent activity of a prospective teacher in testing and applying technical, curricular or organizational innovations seems to be a remarkable sign of a defined attitude toward a new conception of the teacher's role. The focal point of all these activities must be those methods and contents which accelerate pupils' self-development and get him to take an active role in the decision-processes during school-activities. Furthermore, the innovative teacher, by a permanent request for new information, reveals his tendency to maximize his state of knowledge. For the transformation of this knowledge into impulses initiating social change the political activity of the teacher is of major importance. This political activity may consist in actions for instance with other teachers accelerating change in the educational system as well as in thoughtful political instruction of pupils.

Based upon these reflections about the possibility of operationalizing the normative conceptions under the present conditions in the school system, the research group conceived the following dimensions in order to characterize innovative behaviour of student teachers at the end of their pre-service training:

a) Sources, kinds, and amount of information received, relevant for educational and political activities.

b) Initiative shown in picking up new teaching contents, methods, media, and instructional materials.

c) Degree of political activity, both during classroom-activities and outside the classroom.

There is no time to go into each and every detail of our operationalization. The goal of this research step is to examine the consistency of these three dimensions of innovative behaviour.

2. *Psychodynamic Prerequisites for Innovative Behaviour.* The determination of innovative behaviour must take into account the situaton of the teacher with its objective possibilities and its normative coercions. Thus, the only way to determine in which direction the ambivalence inherent in all innovations will be reduced by the teachers is to define the psychodynamic base of teacher behaviour.

In our study the psychological framework consists of five dimensions, for which factor-analysed scales[2] have been constructed:

— cognitive differentiation
— role distance
— reaction to stress in school-situations (level of anxiety)
— professional motivation
— risk taking

The theoretical concept combining these variables may be outlined as follows:

The innovative teacher must be capable

[1] Reichwein, Roland (Sociologist), Hebel, Karl-Heinz; Frech, Hartmut-W. (Psychologists).
[2] Except cognitive differentiation.