lack of reliable measures and valid criteria and because of the strange semi-privacy of the conventional classroom situation—is being denounced. Yet in many respects he really bears the shortcomings of the institution he serves, of the school with its isolation from "real" life, with the lack of objective transparency and, as a consequence, its proneness to arbitrary bureaucratic discipline (Fürstenau, 1964). Students have, in their protest moves, attacked both conformism and isolation as symptoms of a lack of social relevance.

But are we in a position to identify main characteristics of the teaching profession?

first, on the basis of what has been described earlier as an increased responsibility of the teacher both in preparing for changed social conditions and in helping to bring them about;

secondly, on the basis of what has been perceived as old and newer tasks;

and thirdly on the basis of what must now be recognized as the need to resolve latent conflicts with the help of more objective criteria and a rational understanding of the socio-political situation of school and teacher?

Among the criteria of a profession are usually counted: specialized skills, acquired by extensive intellectual training; a large measure of autonomy, of solidarity and of personal responsibility; specialized, not diffuse but rather differentiated tasks (Liebermann, 1956; Millerson, 1964). On the relevance of the latter for educational progress little need be said. Nevertheless, the risk of rigid stratification within the profession should be as clearly seen as the need for differentiation.

However, concentrating on the other two characteristics, autonomy and special, theory-based competence are in fact closely interwoven. They imply an integration of skills, insights and personal engagement. Autonomy depends, in part, on competence gained by specialized training and experience. The clearer their character as professional training and experience—education through history, education in mathematics etc., not a historian trying to teach history, a mathematician instructing in mathematics or constructing time-tables—, the larger the measure of autonomy attained. Even certain new devices of instruction or organization can strengthen teachers' self-determination. Take for instance the kind of horizontal communication, consultation and control which, together with active cooperation, are characteristic of team-teaching. Handled with proper care, here may well be a means of counteracting at the same time both hierarchic harshness and isolation. Proper care is necessary though, since not only must we avoid diffusion and waste, but, like other means of innovation and rationalization in education, team-teaching can be quite ambivalent with regard to the freedom of teachers. (Both Helga Thomas and Hartmut Frech will go further into this.)

This is why the acquisition of understandings and skills derived from social and behavioural disciplines is required. They are needed not only for dealing with a changed school population but not less for the competent exercise of co-operation and shared decision-making. Needless to say, this does not make the teacher a "neutral and impartial chairman" (as has been seriously suggested). Similarly, the decided stress on process learning, on concept formation, on the encouragement of creativity, inventive ness, empathy and so on make for the application of a "discovery", a "conduct-of-inquiry" approach (which is of course neither entirely new nor sufficiently worked out yet). Surely this approach requires no less competent guidance and personal involvement than other aims and ways of instruction. Again, the contribution of most contrivances of instructional technology should be to lead to qualitative improvement; and the teacher, becoming in this context, if you will, a "learning resources specialist", must still be skilful as diagnostician and as motivator. It is really a combination of personal presence and theoretical insight which is characteristic of educational performance.
The question of interaction between educational practice and the educationally relevant sciences is of course a complex one. In order to put the relevant questions to scientific investigation and to select the relevant answers from its results, in order to exploit fully the relieving and ameliorating effects of research and technology, an understanding of the political context of education is clearly essential. Among plenty of good reasons for the acquisition of political insight by the intending teacher is the need to co-operate with parents and with students, with educational authorities, with researchers and with planners. These contacts are charged with politics, educational and other. To mention only a few issues: evaluation, promotion and achievement orientation; teacher solidarity, e.g. for educational reform; curriculum revision; feedback to educational research; student and parent participation in school policies; parent education through guidance and counselling on tasks of socialization and personality formation. This is, of course, politics in an inclusive sense, applied to designs for modifying a more or less extended sector of the entire educational system. In quite a few places—I refer e.g. to the F.R.G., to France and to the U.S.A.—current modes of communication between educational research and educational practice have been challenged by a demand for a more integral scheme of interaction and participation. Of course, while there is no doubt about the need to guide research by the concrete problems of educational practice—especially if innovation in education is viewed as part of social change—, active participation of teachers, e.g. in what is called “action research”, will have its limits.

Finally, there is the problem of a change in teachers' conventional attitudes and need patterns (Robertson and Haas, 1970). Hartmut Frech will, a little later, report a design for the identification of personality dimensions making for innovative behaviour in the teacher, singling out cognitive differentiation, role distance, reaction to stress, professional motivation and risk taking as relevant dimensions. Let me, nevertheless, mention one or two personality traits, needed by the innovating educator, which will hardly lend themselves to strictly operational control. One is a readiness to bear heavy tasks; in the German Federal Republic, for instance, the additional working load for teachers in the experimental comprehensive schools has already made for some serious trouble. This readiness, I think, comes only with a conviction of the liberating task of education itself; if coupled with disciplined weighing of evidence it might achieve more than some of the radical educational writings of recent years have actually achieved.

(2) In suggesting certain elements of a teacher training curriculum based on the foregoing arguments, we shall admittedly have to rest our case on strong plausibility rather than on conclusive evidence concerning their capacity to effect the desired behavioural change. There is of course little accurate evidence on the effects of certain qualifications on teacher performance and less on how they are engendered; the difficulties of establishing valid criteria of teacher effectiveness, of measuring his success and of relating it to particular variables of qualification and training are well known.

Drawing plausible conclusions then from what has been said and concentrating on “new tasks” only, i.e. without going into the question of a growing complexity of the conventional subjects of instruction and the ensuing consequences for teacher preparation, we must still start from two requirements: that teachers for all age levels will need intellectually higher qualifications—in fact a degree of “overqualification”—to cope with change and rolling reform, and that the place of such studies is the university, if this institution is not to relinquish its historical task of intellectual and professional leadership. We may add immediately that the core of such professional studies will be the social and behavioural sciences. The analogy of the study of natural sciences by the future doctor is commonplace (Floud, 1962). That the atmosphere at
universities in many countries is quite hostile to such suggestions is true enough, but a final positive acceptance of the task may serve as a test of the university's viability as a major agent of social development.

I cannot go into details of course content. What a teacher, to understand his present tasks, needs to study in sociology concerns the social conditions of educating and of educability, the school as a social system and the class as a social group, the effects of differentiation and selection, fundamentals of socialization and identity formation. Innovation itself is a theme in this context (OECD/CERI, Cambridge Workshop, 1969).

We seem to know from Swedish investigations (Marklund 1960, 1963; Husén/Boalt, 1964) that specific studies of actual reform have a positive effect on teacher attitudes. At a meeting on the Changing Role of The Teacher in Berlin a special plea was made for studying the mechanisms of change and innovation and of social control (William Taylor, 1968). Let us make sure, however, that we do not again revert to the mere mechanics of “change agents”, “client systems”, “transmitters” etc. It is difficult to say what shape political enlightenment should take in the study course: possibly not that of theoretical studies, certainly not solely that. At any rate, the political aspect will have to be specifically included.

Not unlike sociology, the behavioural sciences must be included for several distinct reasons: (1) for the information and guidance they yield for developing the school curriculum, (2) in their substance, as central components of the future curriculum itself, (3) for the understanding of human behaviour and institutions they accord (Siegel, 1967). One result may hopefully be some training in tolerance for dissonance, for ambiguity and for frustrations that are never absent from efforts of innovations anywhere. That the immediately applicable use of some such studies—take learning psychology—is still limited, is a painful but well-known fact. Recognizing this, Herbert and Ausubel, in their report of an international conference on Psychology in the Teacher Training Curriculum (Toronto, 1968) still insist on the contribution of these studies to better communication between theory and practice and, perhaps, for the improvement of the social and political contexts of teacher education.

In any case, the purpose of including a rather wide range of social and behavioural science studies in the training programme lies not only in their contribution to the understanding of specific institutions and processes but no less in their serving as a basis for that new thinking on education which stresses its emancipatory role in society. The analogy of the study of law is of interest. Nearly a hundred years ago, Lorenz von Stein, incidentally one of the founders of Comparative Education in Germany, said of the study of law that if alienation between the people and the jurist is to be avoided, the accent of “higher” juridical studies will have to move from the substance of the law (which, to be sure, should be known) to its social and philosophical foundations. After a hundred years this discussion on the “right” priorities for the study of law is still on. No less in education. Both the more instrumental use of the social and behavioural sciences and their socio-political purpose can safely be said to have prompted the recently published recommendations of the German Council on Education (sub-committee on teacher training, 1971) in which these studies, including, of course, education, but also some political science, are accorded a much increased share in the training programme. The “didactic” dimension is also stressed in the study of the subjects of instruction, which again implies a thorough reflection of the social, as much as of the instrumental, functions of these subjects (cf. the essentially similar Council of Europe recommendations; Robinson, 1970).

The controversies over the respective places of general and professional education and of academic subject training in the programme of teacher education are of
course universal. In the Soviet Union strong criticism of educational and psychological courses (Dmitriev, 1968; Ogorodnikov, 1968) and of practice teaching arrangements (practical) (Nikolaev, 1969) goes together with pleas for an increased share for the educational and psychological elements in the curriculum, although plain subject matter studies clearly preponderate. The necessity of a strong philosophico-political grounding and of active social engagement is of course taken for granted; the school is an “ideological institution”. This is certainly no less true of the German Democratic Republic, about which, I believe, we will have a detailed and competent account in a little while. It seems that here too a decision in a discussion of long standing was made over a year ago in favour of the “specialist teacher” (1969). Here too an enlarged though still minor share of the training curriculum has been given to the social and educational sciences; integration of theory and practice is, certainly in accordance with Marxist theory, to be strengthened; research experience will be gained in the professional field, i.e. the field of education (Röksch, 1971). It is remarkable and merits special consideration that so widely similar consequences are advocated on the basis of such different ideological positions as that of a Marxist-Leninist and a democratic-pluralist social philosophy.

Finally, there can be little doubt about the desirability of two further necessary features of teacher education in view of educational reform. One is the interlacing of theory and practice in a clinical phase. It has become clear enough, I hope, that it is not “Performance-Based Teacher Education” I have in mind, programming teachers for “correct” decisions. Based upon close co-operation of the professional training institution and the public school, clinical work is designed to breed a critical attitude toward conventional practice on the one hand, to give practical relevance to theoretical studies on the other. Let me admit at this point that I have probably been guilty of putting too heavy an emphasis on what must look like “course content”, pure and simple. I am quite aware of the fact, however, that a good deal of the necessary socio-political enlightenment will be attempted through case and project work within the clinical programme. Moreover, the style of training and its climate are hardly less important than its “content”. This concerns the application of new devices of teaching and learning as well as a general experimental attitude. In-service training, needless to say, is in some respects really a continuation of such clinical training. The second feature is the inclusion of research in the training programme. One may not share Michael Young’s (1965) enthusiasm for linking research and innovation in the school and in the classroom; one may not specially wish to plead for “action research” in education; and one would still have to regard an experimental approach in the work of the training institution itself and some experience of educational research as essential parts of the training curriculum. For active participation in educational development teachers must possess the “interpretative” knowledge and understanding without which no interaction with researchers and research institutions, no mutual feedback, are possible. Take the case of curriculum development. Here no more than elsewhere are the teachers able, or indeed entitled, to accept chief responsibility for innovation. But here no more than in other fields can educational renewal succeed without their active participation. From the interpretation of needed qualifications as curricular aims, through the definition of behavioural objectives and the construction of learning sequences, down to the identification of detailed tasks, the teacher’s initiative and co-operation must be an essential part of the work, to say nothing of try-out and evaluation. Nobody can maintain that present programmes of teacher training provide the necessary preparation for such tasks. There is perhaps a chance that new training curricula will.
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L’Innovation en Education et les Programmes de la Formation des Enseignants

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Les études concernant l’innovation en éducation ont eu tendance à suivre les préoccupations des chercheurs qui se spécialisent dans les problèmes d’innovation pour d’autres domaines. Ils ont eu tendance à se pencher davantage sur les modalités de diffusion et d’adoption que sur la découverte, sur les besoins ressentis qui stimulent l’innovation et sur les buts du système qu’elle sert. Une telle importance donnée aux aspects opérationnels du renouvellement, au détriment du renouvellement lui-même, ne tient pas compte du plus vaste contexte d’innovation de la société.

Tout en devant participer à l’instauration et à l’acceptation de l’innovation à l’intérieur du système d’éducation les enseignants devraient également développer des attitudes qui leur permettent de contribuer au renouveau du système dans son ensemble. Pour arriver à cela il faut modifier la formation des enseignants. De la manière dont elle est organisée à présent elle renforce « la stagnation et le traditionnalisme ». L’amélioration de la technologie et une meilleure administration ne changent rien au fond du problème qui est la contradiction même de la tâche de l’enseignant qui d’un côté est liée au passé et à la tradition et de l’autre à la création d’attitudes critiques et à un esprit de changement.

En se développant, la science et l’éducation ont augmenté leur importance et leur complexité. Elles nécessitent, toutes deux, un haut degré de différenciation des tâches, un pouvoir dynamique et une attitude dubitative. Ces caractéristiques demandent aux enseignants de participer à des réactions spontanées, à une créativité et à un renouveau hors du système traditionnel. L’autonomie relative que demande l’enseignement, ainsi que la science, implique une certaine résistance à une intégration pure et simple et un certain niveau de communication active avec les autres développements de la société. Les innovations en matière d’organisation et de technologie doivent être considérées comme des moyens de libérer et d’étendre les possibilités de réformes plutôt que comme des buts.

On s’accorde à admettre l’importance de l’éducation dans la société future. Plus l’enseignement se démocratise et se différencie plus son potentiel d’autonomie et d’influence augmente, lié cependant par des rapports mutuels avec les sphères économiques, sociales et de recherche, et avec une redistribution des tâches et des qualifications à l’intérieur du système. Même en Suède, l’un des rares pays où elle est appréciée, l’initiative des enseignants qui devrait contribuer à susciter de nouvelles idées et des décisions de réformes est toujours inhibée par un certain paternalisme.

Néanmoins il y a des limites à ce que les enseignants peuvent faire ou à ce qu’ils doivent être préparés à faire, de même qu’il y a des limites à l’impact potentiel du système éducatif même dans ses rôles traditionnels comme « force contrebalançant » les manques socio-culturels et comme « apôtre » souhaitant la perfection. Les sug-
gestions pour la révision des programmes de formation qui proviennent de l'analyse des tâches habituelles des enseignants et des qualifications professionnelles nécessaires pour les remplir doivent tenir compte des ambiguïtés et des incompatibilités qui génèrent l'efficacité de l'enseignant et sa confiance en lui-même. Les enseignants sont liés à la fois par un certain degré de conformisme et par la nécessité d'avoir des attitudes critiques conduisant à des changements et à des progrès. Leur travail est limité par la situation scolaire, avec sa tendance à une discipline bureaucratique arbitraire provenant de son isolation par rapport à la vie réelle et de son manque de clarté objective.

L'aptitude théorique, l'autonomie et l'exécution de tâches spécialisées et variées sont les critères reconnus d'une profession d'après lesquels on peut analyser les principales caractéristiques de la profession d'enseignant. Dans cette analyse, les plus grandes responsabilités de l'enseignant, les tâches nouvelles et traditionnelles et le besoin de résoudre les conflits latents de son rôle doivent être pris en considération. L'autonomie est étroitement liée à la compétence, et dépend de la combinaison de différentes techniques pédagogiques, de la perspicacité et de l'engagement personnel. Si elle va contribuer à l'aptitude de l'enseignant à s'occuper d'une population scolaire modifiée et à prendre part aux décisions nécessaires aux nouvelles approches de l'enseignement, cette autonomie doit être fondée sur la formation professionnelle, sur l'expérience pratique qui s'appuie sur les sciences sociales et psychologiques, et sur une compréhension de l'utilisation de nouveaux moyens et de nouvelles organisations pour l'instruction. L'interaction entre les stages pratiques et la théorie qui s'y rapporte est complexe et nécessite une compréhension du contexte politique au sens large. De même des changements dans les attitudes conventionnelles des enseignants et dans leurs besoins pourraient conduire à de plus grandes réalisations.

Les éléments d'un programme de formation, liés avec les nouvelles tâches de l'enseignant et fondés sur ce dont nous venons de parler, demanderont des qualifications intellectuelles plus élevées à tous les enseignants. Celles-ci devront être acquises au cours d'études universitaires. Des études sociales comprenant de la sociologie, des informations politiques et des études de psychologie devront occuper une place prépondérante à la fois à cause de l'aide qu'elles apportent à la formation des enseignants et à cause de leur importance quasiment certaine dans les programmes scolaires à l'avenir. Les deux autres aspects nécessaires à la formation des enseignants sont : la phase clinique, visant à fournir des éléments pour une attitude critique à l'égard des pratiques traditionnelles et à donner une valeur pratique aux études théoriques, et l'introduction de la recherche comme élément du programme de formation, pour préparer les enseignants à co-opérer ensuite aux travaux d'innovation.