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ABSTRACT

The Center for Educational Technology (Bildungstechnologisches Zentrum -- BTZ) is a research, development, and implementation (R and D) organization set up by the State of Hesse, West Germany. It has the novel (for Germany) function of being a middleman between politics, research, and educational practice in developing curriculum for German pre-, primary, and secondary schools. The BTZ focuses on six areas: curriculum development and instructional design; learning theory, cybernetics, computer application, and media systems; social and educational psychology and evaluation; science and mathematics; modern languages; and social studies and humanities. The BTZ consists of a governing board, management, an R and D board, and an R and D project groups, each with a specific task. The governing board is composed of both government and BTZ staff personnel. Among the problems which face BTZ are: Uniting educational research, policy, and practice; integrating research development, and implementation within one institution; implementing the center's programs in schools; and finding qualified R and D personnel. (JK)

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Towards Incorporating Educational Development in the Educational System; An evolving model in the German Federal Republique.

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Introduction

Educational development like any educational activity cannot happen in vacuum; it always takes place in some form of institutional frame. In fact the institutional background must be looked upon as one of the most crucial decision-points in such a development process as any decision in this respect tends to be of a more stable, conservative and permanent character than those that follow. Thus it will overshadow, facilitate, hamper or stimulate the interplay of actions that ensue.

It is with this in mind that this paper is presented to a gathering of people who discuss styles and decision issues in the field of curriculum development. It will confine itself on the aspect of institutionalisation, and, moreover, it will concentrate mainly on one particular example, namely the Center for Educational Technology (Bildungstechnologisches Zentrum - BTZ) in the State of Hesse in West Germany, which is being established at present. Some of the information given will cast light on the pecularities that exist in the Federal Republique generally.

Background: Some main line of developments in the Sixties

Like many other countries Germany witnessed in the last decade the rise of education to one of the most prominent

issues in public life. At least three sources can be named for this:

a) the alarming reports, research results, analyses, and public discussions of prominent individuals in the field of science and education, politics and mass media,
b) the puplications and recommendations of commissions such as the 'Bildungsrat' and the 'Wissenschaftsrat' (Council for Education and Council for Science) and
c) the students who already by the mere fact of causing massive unrest demonstrated that there 'must be something wrong in the whole system'.

Presumably it was more the first and the last which brought education into the limelight of public life, i. e. the lack of initiative from the side of the government and the political parties in noteworthy.

The official reaction to the sudden arrival of education as a public issue was in the beginning mainly concerned with providing for quantitative and structural measures to be taken. Educational planning, then becoming established within some ministries, was mainly preoccupied with the gap between educational growth and economic demand and appropriate means of bridging it. Next the structural problems of schools and universities moved into the foreground. Any educational reform in West Germany so far is characterized by the fact that educational authorities were more or less exclusively concerned with looking for structural and organizational measures to solve educational problems. While this administrative thinking still dominates educational policy and the authorities' preoccupation with educational innovation, it could be noted towards the very end of the last decade that it tended more towards qualitative aspects of education, i.e. the organization of the teaching-learning process in the classroom or elsewhere, the curricula, the goals and objectives of education and

the ways and means by which they could be achieved.

Partly due to the initiative of various interested individual personalities and also of Industry, in 1969/70 serious considerations were given to the establishment of new institutions in the field of curriculum development and educational technology at the state and federal level. However, a clear co-ordination of the various similar efforts did not take place.

Though plans for the setting up of a central institute for curriculum development are being discussed at present, there is no overall strategy at the federal level. The State of Hesse has taken the initiative by inaugurating the Center for Educational Technology, North-Rhine Westfalia has founded a similar institute, and other states become increasingly interested in the idea. However the thought of establishing a network of educational development centers over West Germany with an interlinking and co-ordinating centre has not yet caught on at the federal level. In this situation the lack of a coherent plan of action at the federal level may have serious consequences in the years to come, for communication and co-operation between the state ministries of education is negligable. We are probably repeating an experience the U.S. have just gone through, since though initiated even from a central level, i.e. the U.S.Office of Education, the Regional Educational Laboratories and the R & D Centers were not interconected through a central mother-organization. It is felt that a number of difficulties arose from this omission. These have now apparently, amongst other reasons, led to discussions about establishing some kind of national institute for educational research outside the Office of Education. This would act as a sort of backbone, in order to prevent a relatively young organism from jeopardising its own work and existence. Though it is normal to assume that other countries will profit from such an experience

it is at present just as likely that West Germany might have to go through the same stages of development and repeat systematically the mistakes other countries have committed and in the meantime reversed.

The Center for Educational Technology (Bildungstechnologisches Zentrum - BTZ)

The BTZ is set up as a non-profit organization with limited liability and is presently globally financed by the State of Hesse with special funding of projects by the federal government. Negotiations are presently under way to have the federal government as an equal partner and it is to be expected that from 1972 the Center will be legally borne as a joint enterprise by the State and the Federal Government. The mandate of the BTZ as a research and development center is to carry out

- research into the technology of learning and learning systems
- the design, prototype development, evaluation and implementation of learning systems and other learning resources
- curriculum development with special respect to innovations through the integration of new media
- an advisory function and the provision of information to other educational institutions and authorities
- where appropriate, the training and in-service-training to teachers within the realm of its other functions.

The essential organ in respect to the Center's work and the supervision of its management is a governing board consisting of representatives of the state, the city of Wiesbaden, the federal government and - with up to 1/3 of its seats - of staff representatives of the BTZ. For the conduct of its task the governing board can nominate

an external research advisory committee on to which representatives from the field of research and education as well as public institutions and other relevant social organizations can be elected.

The Center's programme of work is carried out by research and project groups. Whereas the emphasis in the first group is more on long term development work or research, the project groups are primarily concerned with the development of prototypes of learning systems. For the planning, elaboration and co-ordination of the Center's activities a R & D management board is set up which consists of the research group representatives, the project leaders and elected members of the total staff.

There are six areas of work, which for lack of a better terminology, will be referred to as sections, and which are named according to their (a) research orientation and (b) their school subject areas. They are:

1. Curriculum development and instructional design
2. Learning Theory, Cybernetics, Computer Application and Media Systems
3. Social and educational psychology, Evaluation, Economy of education
4. Science and Mathematics
5. Modern Languages
6. Social Science and Humanities.

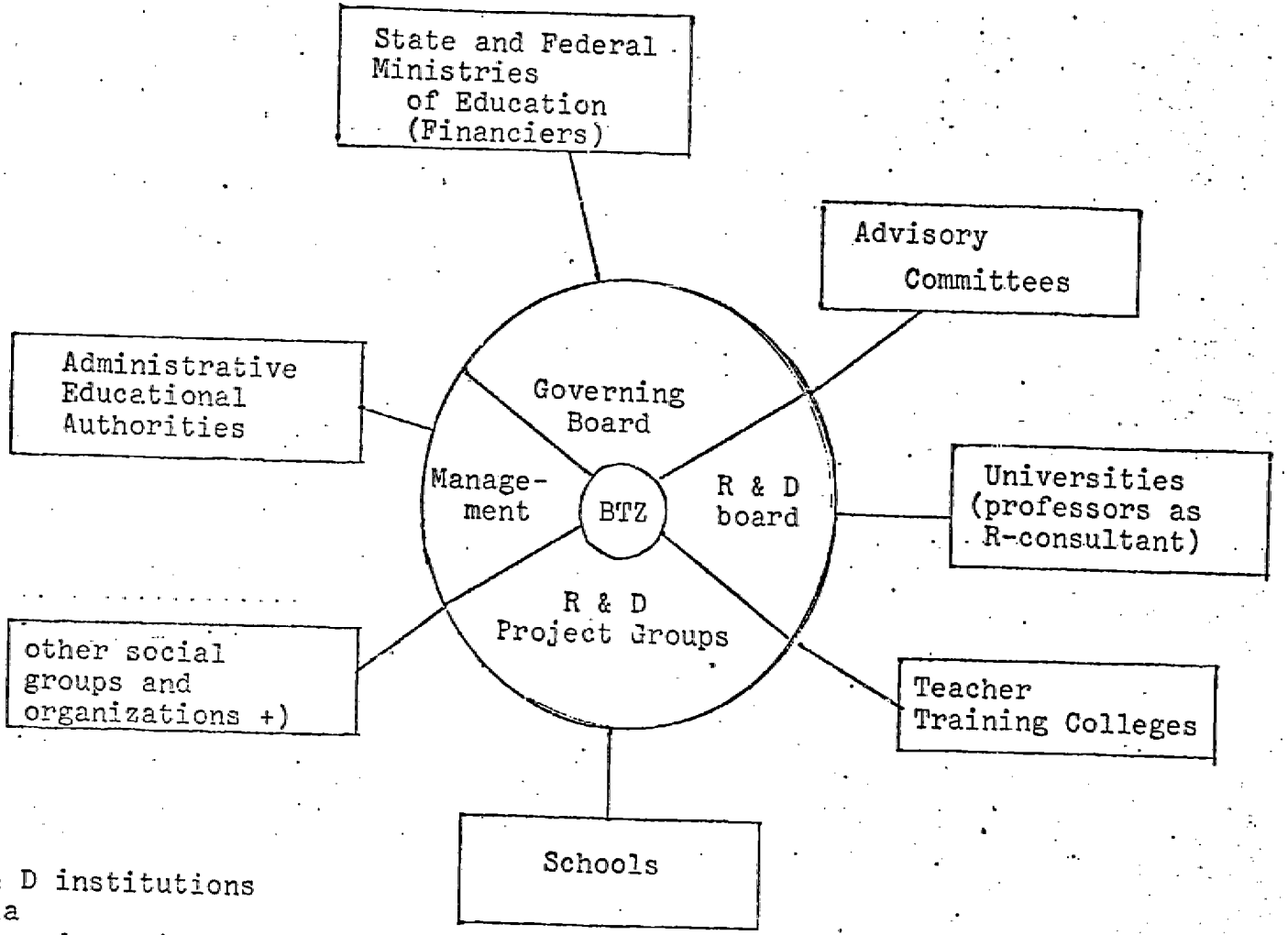
It is thought that the sections 4, 5 and 6 are the development oriented project groups who will be helped in their work by the research-oriented 'support troops', i. e. members of these would be seconded to the project development groups. Each working group whether more inclined towards research or to development will have a university professor as a research and scientific consultant who will advise the group in its work and also take on certain tutorial tasks. It is not intended that the professors act as group leaders although they at

present are charged with the setting up of the group. Research groups will lateron elect their representatives whereas project group leaders will be contractually nominated. Besides the appointment of permanent staff for the working groups it is planned to attach teachers on a secondment basis to development projects.

Thus an institutionalized linkage exists between the educational ministries of the State and the Federal Government on the one hand and between a number of universities through the contractual arrangements with consulting professors on the other, as well as the co-operation with schools through full and part-time secondments and other active forms of co-operation. The complete linkage system (established or intended) is shown in Fig. 1.

It must be noted that these institutional arrangements represent a real innovation in Germany, as to date not only are large scale development activities in education unknown but also because the BTZ is the first institution conceived of as fulfilling a middleman function between the separated worlds of politics, research, and educational practice. As unknown as the concept is in Germany of looking at research development and implementation (RDI) as an integral whole where one has bearings upon the other, as difficult will it be to put this concept into practice. The orientation of the Center's work will be predominantly towards the pre-, primary, and secondary school level.

With respect to the topic of decision issues the basic decision making structure should be mentioned as it always has strong bearings on the actual work to be carried out by an institution (see Fig. 2).



+) e.g.
other R & D institutions
mass media
producers and publishers
parent associations
teacher associations
students
unions etc.

Fig. 1: Linkage System of the BTZ

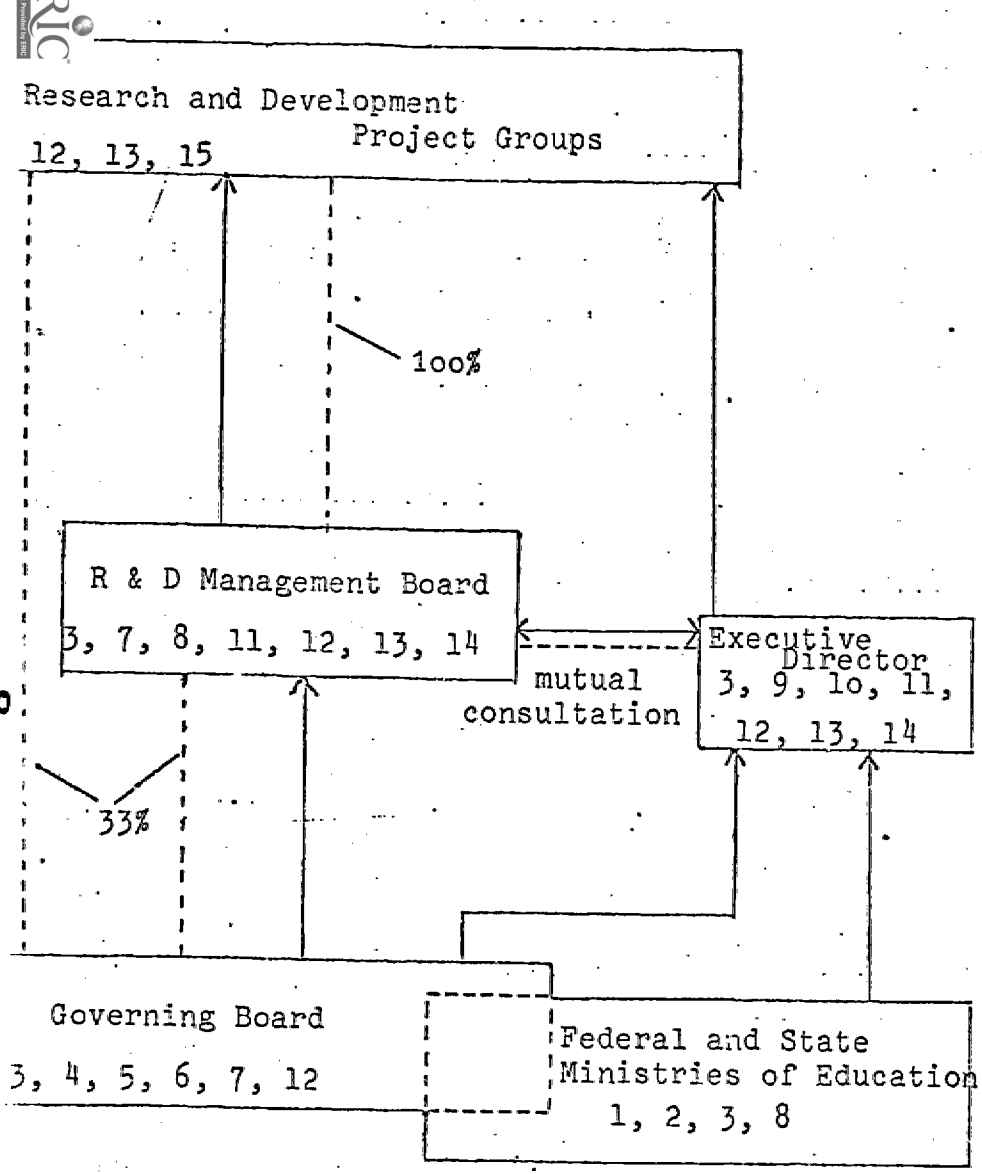


Fig. 2 Present Basic Decision Making Structure

——— formal downward decision making structure and decision execution

----- formal ways through which participatory decision process is presently institutionalized

15 Planning, Organization and Carrying-out of Work within Groups

14 Basic Principles for Planning and Carrying-out of Work

13 Planning and Elaboration of Programm of Work and Resources Demand

12 Appointment of Staff

11 Management and Internal Co-ordinatio

10 Resource Allocation

9 External Relations and Formal Agreements

8 Appointment of Executive Director

7 Installation of R & D Project Groups

6 General Guidelines for Dissemination and Diffusion of Center's Output

5 Approval of Programme of Work

4 Supervision of Center's Management and Work

3 Policy Orientation

2 Mandate of BTZ

1 Financing

- Decision Areas -

(percentage indicates number of seats

Three general principles guided the considerations. First, the Center's independence and freedom in its work within the constraints of the given socio-political frame had to be assured, in order to prevent the BTZ coming to serve only the interest of individual organizations and people. Secondly it had to be assured that the BTZ would work according to its mandate and not withdraw into an ivory tower of research without any impact on educational practice. Last but not least it was essential to arrive at a system of participatory government by delegating responsibilities and involving the staff also in the essential decisions about the Center's work. Fig. 2 shows in outline how these three general principles have been realized and a few explanatory remarks might be helpful.

Representatives of the local, state and federal educational authorities together with the Center's staff (1/3 of the board's seats) will constitute the governing board which will take the basic decisions about the Center's work, such as approval of programme of work, recommendation of budgetary implications to financiers, general policy questions and the supervision of the Center's management. (The governing board may be reinforced in its work by external advisory committees which it can set up.) Because there are representatives of the ministries and of the staff on the Center's governing body, the staff can influence, through personal exchanges, decisions which ostensibly and officially are taken by the ministries alone. This is for example firmly institutionalized in the statutes of Center over appointing the executive director. Before the appointment agreement on the person of the executive director shall be achieved with the R & D management board. This means in practice that the initiative for proposing an executive director lies with the staff. As can be seen from Fig. 2 the R & D management board and the executive director share most of the responsibilities, i.e. they are more or less two equal

bodies and their decisions are taken in mutual agreement, the difference being that the executive director is the official representative of the Center and legally responsible for its activities. The importance of the nature of the relationship between the R & D management board and the executive director for the functioning of the Center is obvious. In cases where agreement even after extensive discussions cannot be reached the matter can be put for decision to the governing board. This is to counteract authoritarian pressure from the side of the executive director and also to prevent the R & D management board taking decisions which will jeopardise the Center's position as a public institution and which might run against its mandate. The R & D management board is entirely made up of representatives of the research groups, the project leaders and other elected members of the staff. The Centers programme of work will be elaborated by the R & D management board, which will also lay down the general principles for its implementation. The planning, organization and carrying out of the work within the research and development project groups will be done by the groups themselves in conjunction with the Center's management and administration. The degree of responsibility to be internally delegated to the groups is at present still under discussion.

As authority with respect to school experiments, field trials, introduction of new curricula, the accreditation of learning systems, and examination requirements lies with the state ministry of education, continuous and close co-operation will be necessary.

Present Problems

In what follows, we shall consider a number of problems with which the Center is faced in its initial phase and the solutions to which will certainly influence the

Center's direction for the coming years. They further illuminate the context in which the Center will have to operate.

a) The bias between educational research, educational policy and educational practice.

As was already mentioned before, the concept of R & D or, even R D I and its implications for educational work are strange notions in traditional German thinking. The philosophy of the universities which dates back to the idealistic thinking of the early 19th century has led to a strong separation between society, the universities with their emphasis on pure research, far removed from the real world, and educational practices in the schools. This historical disjunction, unacceptable in a modern society, still deeply influences present day thinking and prevents a mutually beneficial interchange between the world of science and research and the educational policy makers and executive authorities. It is not marked so much in the field of natural sciences and economies, but still prevails in social sciences, education and the humanities. The fact that it is rooted in and touches on basic social value concepts puts an educational RDI-center in a situation where it has to face scepticism and resentment from all sides, and to establish itself it has to change attitudes and overcome prejudices in those for whose benefit it works.

b) The integration of research, development and implementation within one institution.

It is difficult to draw a line between research on the one hand and development and implementation on the other. It is likewise difficult to integrate them with equal emphasis in one organization and the practical solution is often to separate them institutionally. (See e.g. the R & D Centers and the Regional Educational Laboratories in the U.S.) However, experience shows that a separation will be disadvantageous and risky as the necessary inter-

play between the two sides will not take place. New structures for netting R and D and I together will have to be tried out. The BTZ has not yet settled on any particular solution but various possibilities are being conceptualized and envisaged. The linkage with a number of institutions at various universities through contractual arrangements with professors will make it possible for the Center's staff to further qualify themselves academically (academic degrees, Ph D, 'Habilitation', university career etc.) The same mechanism could facilitate recruitment of new staff and, furthermore the Center can develop an acknowledged, specialized postgraduate training capacity in the years to come. To balance it in the other direction (i.e. to prevent the Center from becoming too deeply involved in basic research), its research groups would have to be understood as fluctuating groups. This means that the staff resources would be primarily allocated to development project groups, which are of an interdisciplinary nature, and only a small number of people would remain in the research groups. A shift system would allow staff reallocation after completion of a project. In other words the research groups would be set up as part of a continuous internal in-service programme in combination with an internal 'sabbatical-leave' system.

c) The Time-Lag

It is hoped that mechanism such as the ones just mentioned will bridge the time-lag in getting up to date in methods and techniques of organizing and conducting large scale educational development work and also in basic concepts such as educational technology and curriculum development. At a time when other countries have long since departed from the gadget and hardware concept of educational technology, where the notions of systems analysis and systems development have undergone modifications to adjust them to social and educational problems, when the principles of programmed instruction are conceived of in a wider

sense as development stages and guidelines rather than as a classical drill and practice procedure, when formative evaluation has replaced the summative approach in educational development work, at a time when the distinction between educational technology and curriculum development disappears rapidly - you will find that many of the old ideas are only just catching on in Germany, and that newer developments are unheard of.

At a rough estimate it will take 5 to 7 years for these more sophisticated notions to develop in Germany, if we have to repeat in a systematic way the same stages of development and the same mistakes as others. Can we not benefit from their experience and avoid this wasteful time-lag?

d) Personnel Problems

This raises a serious difficulty at present as there are only few people who have experience in educational R & D work. It is only now that some universities have begun to offer opportunities for students in educational science to familiarize themselves with fields such as curriculum research, learning and communication theory, evaluation procedures, informatics and systems analysis in education etc. (Educational science is a very new term in German universities which slowly replaces the old philosophically oriented concept of 'pedagogy'.) Moreover not only are professors and lecturers unfamiliar with problems of development work but the university tradition results in indoctrination about the purity of research which prevents the qualified student from engaging in more practical activities.

To overcome the shortage of qualified manpower the BTZ is at present developing an internal training model for its own staff. This programme includes for staff members periods of attachment of between 2 - 4 months at corresponding development projects in the U.S. and the U.K. in order to familiarize and update them with ad-

vanced practices. Contacts with other organizations in Germany and elsewhere, discussion seminars, workshops with outside participants who will be asked to comment on the Center's strategies and activities are likewise envisaged.

Concluding Remark

The BTZ is one of the first large scale RDI centers in Europe and represents within Germany a new model for innovating educational practice. Though it ressembles the R & D Centers and the Regional Educational Laboratories in the U.S., the impulse that led to its creation seems to have come from a different direction and a number of features clearly distinguish it from them. It will be interesting to see how these different approaches develop and in which way national and international communication can be set up continuously to improve institutional arrangements, and to prevent institutional decisions impeding and laying behind developments that take place within the institutions.