



IMTEC NEWSLETTER

AUTUMN 1989

IMTEC - INTERNATIONAL LEARNING COOPERATIVE
Dynekilgata 10, 0569 Oslo 5, Norway, tlf 373420, fax 715555

ANNOUNCING THE ARRIVAL OF IMTEC (UK)

IMTEC has been seeking to extend its work inside the United Kingdom and an operational base has recently been established in Cambridge, England, located at the Careers Research and Advisory Centre (CRAC). This base will be the hub for IMTEC activities in the UK and will be known, therefore, as IMTEC(UK). The base is to be found in the CRAC headquarters, the address of which is:

IMTEC (UK)
CRAC, Sheraton House
Castle Park, Cambridge, CB3 0AX

This operational base will be opened officially on September 11th 1989.

IMTEC(UK) currently has a staff of three:

Peter Holly: Director, IMTEC(UK)

Katherine Quigley: Projects Manager
(on secondment from the Training Agency)

Dido Whitehead: Admin. Assistant

IMTEC(UK) is receiving the active support of the Training Agency (formerly known as the Manpower Services Commission), and there is a joint plan to establish the TVEI School Development Programme (TSDP). This overall Programme will focus on the needs of the Training Agency's nation-wide Technical and Vocational Education Initiative (TVEI), but will concentrate on what IMTEC does best - consultancy training for support agents to be able to foster and facilitate school-based development.

With the wide-spread introduction of the Local Management of Schools (LMS) in the UK - following the far-reaching Education Reform Act 1988 -, IMTEC(UK)'s work in support of Whitehead school development and school management will certainly be hitting the right note.

The purposes of IMTEC(UK) are three-fold:

- * IMTEC(UK) aims to participate in, and encourage, the development of well-managed and well-resourced programmes of work for whole school development, including the establishment of local support partnerships and programmes of consultant training for school-based development.
- * IMTEC(UK) aims to investigate and promote various processes and styles of change management and to provide a voice in the UK on the management of educational change.
- * IMTEC(UK) aims to encourage and facilitate the all-important shift from teaching to learning by promoting whole school development in the related areas of information technology and flexible learning.

SCHOOLS AND THE CHALLENGE OF COMPUTERS

John Goodlad in one of his books on educational change reflected on schools and technology. His observation was that most technologies including information technologies like the radio or TV have had only marginal impact on schools. Will the same be true when it comes to computers?

Very few innovations have had such a remarkable impact on our lives as the computer. This year the Personal Computer (PC) is 10 years old. 10 years. That's all. Millions and millions of workers - professionals and non-professionals - are using this tool in their work and in their personal lives. The P.C. - no doubt - has had a tremendous impact in a very short period.

What has the impact been on schools? Much less. So far. Although there are areas where the computer definitely has come to stay, in most central areas of school life we are still talking about the potential of the computer, what it would look like if many things were different, if we had enough machines, if we had relevant and high quality programs, if teachers were properly trained, if the curriculum was adapted, and so on.

True. In some schools the story is different. We have shining examples of schools where the computer plays a significant role and has made a tremendous impact on the daily life of teachers and students. IMTEC has studied 22 "Computer-using schools" for more than five years, from the very first attempts to introduce the computer, to wide-scale use of the technology in some areas of the curriculum.

The story is quite unique. The Norwegian Ministry of Education already in 1983 decided to make a major investment in information technologies, also with a highly significant and comprehensive program for schools. The Ministry created a new central body to lead the entire project, headed by Arvid Staupe - a well known information technology expert in Scandinavia. The Ministry very generously funded a very large developmental program ranging from program design and development, to development of new technology, to large staff training efforts (some 10 000 teachers) to the support of over 100 schools with innovative programs - to mention a few of the activities.

IMTEC was asked to assist - both in terms of formative as well as summative evaluation. Knut Stranden became the Project Director. Per Dalin has had the methodological responsibility. Other persons involved from IMTEC's staff have been: Tor Bergli, Mette Eldevik, Anders Isnes, Arne Solstad, Anne Welle-Strand.

A series of evaluation programs were initiated and completed, including studies of teachers, staff development, system-implication, the change process in schools, use in special education and in vocational training and studies of many classrooms. To date 16 reports have been written and a series of meetings with thousands of teachers and educational leaders have been conducted. And what have we learned - about the use of computers in Norwegian schools?

The largest impact has been in vocational training and special education. In these areas the computer definitely improved the teaching-learning situation, and in some cases reached new objectives (e.g. for some special needs) not possible without the new technology. In many vocational subjects instruction without the use of the computer is already not an option any more.

The situation in general subjects is different. Lack of relevant and high quality "educational software" has been seen as the major obstacle to real use of computers in daily practice. In those classrooms, however, where the computer is used extensively, e.g. using "standard programs" as word-processing, the entire teaching-learning situation is changing. The

role of the teacher is changed, so is the role of the student. Cooperation among students is a common part of classroom life, motivation for school work is higher (and stable over several years) and teachers are convinced that both the better and the weaker students are benefitting.

We also find that staff development is underestimated. It is vital for the use of computers in schools. Norway is also in a particular situation as a small language culture. One of the intentions of the National Program was to produce Norwegian based programs in Norwegian that would be an alternative to the American/English programs that are now for general sale. The experiences show that this goal is very ambitious, that investments of a very great order are necessary and that it is doubtful if the goal realistically can be achieved.

IMTEC will attempt to make the final report available in English. For copies of the Norwegian reports, write to:

Datasekretariatet
Møllergt. 23-25
0179 Oslo 1
Norway

During the Fall of 1989 IMTEC has, in cooperation with The Norwegian Ministry of Education, initiated three new projects.

- 1 Evaluation of the use of data communication and distance education in three schools in the Northern Norway.
- 2 Evaluation of the use of databased aids in the education, and adaption to work, of physically disabled students. The project involves cooperation between schools, employment agencies, centers for the development of aids for the disabled and the business community.
- 3 A long term study of schools using computers in teaching. IMTEC will study the total effects on the classroom practices by the use of computers.

Knut Stranden and Anne Welle-Strand have the professional and administrative responsibility for these projects. IMTEC will also draw on Norwegian and international researchers and practitioners.



ORGANIZATIONAL DEVELOPMENT PROJECTS

One of the most important strategies in IMTECs work is Organizational Development. Several staff members have one or several ongoing OD projects and OD tools are often used in most IMTEC programs.

Mette Eldevik is responsible for the evaluation of a Public Dental Health Care Project. This project is initiated by the Norwegian Directorate of Health and supported by the Department of Health and Social Security.

The overall objective of the project is to solve new issues without any net increase of costs, through flexible use of staff and change of routines. This is assumed to take place without reducing the quality of services.

She uses a formative evaluation approach by working in close cooperation with the Project Management Team. Regular feedback to all participants to help making informed decisions during the project period, is a key strategy.

Tor Bergli (in cooperation with Per and Mette) is working with the redesign of Oslo Water and Sewage Works, an Objective-driven OD project over some 3-4 years. The Director Oddvin Tokheim and his 6 member Team of Directors work closely with 6 Task forces. Tor is the main external OD consultant working with two internal OD persons, Bjarne Helland and Wenche Lien and the 6 Task forces. The Project combines intensive Leadership-team development with OD work, especially within economy control, development of work organization and staff development. To us in IMTEC, a purely Technical agency is a challenge and a great learning experience.

Knut Stranden is presently building a comprehensive OD project with several County-offices and Superintendents offices in the South Eastern part of Norway ("Østlands-prosjektet"). So far we are experimenting with a total new design for Leadership Development in the Rælingen community - starting with Classroom Management and based on the needs at this level designing programs for Heads and Superintendents. In the city of Gjøvik attempts are made to reduce costs involving all actors. Quite a challenge!

Per Dalin is assisting the Tanzanian Ministry of Education developing the basis for a "Donors' conference" to hopefully increase aid to education and make it more effective. Several Tanzanian researchers have contributed to this project by writing some very interesting papers

about the Tanzanian educational situation, edited by professor Herme J. Mosha (The papers are sponsored by the World Bank). Per is also engaged in OD work with the Vocational Training Branch of the International Labour Organization, a job he is doing in close cooperation with the director, Richard Johanson. ✓

HOW SCHOOLS IMPROVE

In our Spring 1988 Newsletter, there is a brief note on this project, which is now in full operation, supported by a grant from the Norwegian Aid Agency NORAD through the Population and Human Resources Department of the World Bank. How Schools Improve - HSI - is a purely qualitative research project on how village schools succeed in implementing nationally implemented educational reforms or major educational changes, using a sample of 12 schools in each country. The countries are Bangladesh, Colombia and Ethiopia.

The major research questions of the study are as follows:

- a) What are the outcomes of successful strategies for the implementation of educational change, seen in terms of quality of implementation, institutionalization, and student outcomes, as well as in terms of unexpected outcomes?
- b) What do successful strategies look like, both at the macro (country) level and the micro (local school) level?
- c) What determines successful strategies? Determinants may include administrative capacity development, teacher training, and commitment-building efforts, among others.
- d) How are successful strategies integrated at the macro and micro levels.

These major questions, with associated sub-questions, are organized in terms of two major substudies of the project, the country-level and school level studies.

1. The country-level substudy is brief, and mostly confirmatory, aiming to see whether the previous desk case study of the program (Adrian Verspoor: "Pathways to change: Improving the Quality of Change in Developing Countries", World Bank, 1987) was accurate, and to revise its conclusions where needed. ✓

2. The school-level substudy is more extensive, and mostly exploratory, since little is known about how local-level implementation proceeds. Some confirmatory questions are proposed, drawn from the prior desk case studies, and from studies of change in developed countries.

It includes in-depth interviews of parents, teachers, headmasters, "support-givers" (i.e. inspectors, supervisors, curriculum specialists, in-service trainers, etc.) and district administrators, as well as classroom observations.

In the Spring this year, a pre-testing workshop was held in Rome with members of the country teams, the specialist panel, the coaches and the coordinator of the study, Hallvard Kuløy, in order to finalize the instruments based on the field testing conducted in each country during the Winter 1988-89.

In Bangladesh, the research team is headed by Professor Mazharul Haque of the Institute of Educational Research at the University of Dhaka. The team is provided with research facilities by the Bangladesh Bureau of Educational Information and Statistics (BANBEIS). Styrbjörn Gustafsson is research coach.

In Colombia, the research team is headed by Dr. Carlos Rojas at the Instituto SER de Investigacion. Ray Chesterfield is research coach.

In Ethiopia, the principal investigator is Tesfaye Dubale, Head of the National Curriculum Development Department, with Anbezu Biazen as Chief Researcher. Per Dalin is research coach.

In order to provide the best possible support on qualitative research methodology and analysis, a specialist panel is also provided directly through the World Bank, consisting of Matthew Miles and Michael Huberman, well known for their pioneering work "Qualitative Data Analysis: A sourcebook of New Methods", and Per Dalin of IMTEC.

PRIMARY EDUCATION IN PAKISTAN

In the spring of 1988, IMTEC, NORAD and the University of Gothenburg did a review of possible Norwegian assistance to education in Pakistan.

From the recommendations of this review, it was agreed on that qualitative improvement of Primary Education was going to be the main

sector for the development cooperation between Pakistan and Norway.

IMTEC is responsible for following up on this project, coordinated by Hallvard Kåre Kuløy with Anne Welle-Strand being responsible for the pedagogical content.

IMTEC is working closely with NORAD in Norway as well as in Pakistan, and we have extensive professional collaboration with Pakistani institutions and consultants in both countries.

The main projects are:

- 1 In-service training of Primary School Teachers, through the system of Allama Iqbal Open University. The emphasis of the project is a qualitative improvement of a six months course for 50 000 teachers in the project period, including training and workshops for staff, tutors and teachers.
- 2 Working with the regional Textbook Boards, including training of staff and pretesting of books, to ensure incremental improvement in primary textbooks.
- 3 Supplementary reading material for primary schools.
- 4 Consultancy input in the World Bank Project for Primary Education in Sind, mainly on components related to school-nutrition and the enrollement and retention of girls in Primary Education.

REMINDER: The "2020"-conference on A+ and IDP in the Netherlands, November 6-8.

Contact: Caroline Vet
University of Amsterdam
Nascholingscoördinaat
Prinsengracht 227
1015 DT Amsterdam
Holland

INSTITUTIONAL EVALUATION

IMTEC has been involved in "School Based Review" since 1976, when IMTEC staff and fellows, including people like Larry Krafft, Marvin Wideen, Val D. Rust and others pioneered this field in Teacher Training Institutions. Since that time our work has brought us to most types of schools and institutions of Higher education in both the industrialized world as well as in developing countries.

NORAD - the Norwegian Agency for Development - contracted IMTEC to do a fairly comprehensive review of the "Institute for Development Management" (IDM) in Tanzania this year.

An international team of evaluators, Janet Poley (USA), Kami Rwegasira (Tanzania), Anthonie Wattel (Holland), Daniel Yona (Tanzania) and Per Dalin (Norway) undertook this assignment. Kari Milner Strøm from IMTEC coordinated all technical and administrative work.

The process was particularly interesting: The IMTEC team worked closely with representatives of IDM, the Tanzanian Government and NORAD to establish criteria, evaluation standards and the design (using IMTEC designed exercises). IDM is a large institution with close to 2 000 students and staff altogether. Representative samples of all categories of students and staff responded to the internal review (using a modified GIL), and the analysis of this material guided the IMTEC Team in its data-gathering with IDM clients, the Government and students and staff.

The report, presently under review by the Tanzanian Government and NORAD sets out 10 proposals for further development and renewal of this largest African Management Development institution.

FOR YOUR DIARY

Announcing the Third International Conference of IMTEC's "School-Year 2020" Project to be held at the University of Oxford, Oxford, UK, 4th - 8th September 1990.

This conference, which is being co-organised by IMTEC and the Training Agency (UK), will provide a great opportunity to meet educators involved in the restructuring of education in a world-wide network and, by working collaboratively, to plan education in the future. The IMTEC project, "School-Year 2020", was established in 1987; the first international conference was held in Finland with focus on the role of the media and information technology in schools of the future. The second conference, held in Snowmass, Colorado in 1988, was concerned with the redesign of schooling. In terms of the third conference, the intention is to extend the successes of the Helsinki and Snowmass conferences by bringing together policy-makers, developers, innovative practitioners, trainers and researchers to build an agenda for action - in order to make change happen.

This agenda for action will have two dimensions: the contents (the "what") of future schooling, and the processes of change management (the "how"). The format of the conference will itself be innovative, but based around an appropriate balance of key-note presentations, case-study investigations and working-group sessions.

The setting for the conference will be in the historic and beautiful city of Oxford. Where better to create visions of the future than amidst the "dreaming spires" of Oxford! Accommodation will be in Balliol and Trinity Colleges, which are both part of the University of Oxford and steeped in history themselves. So the setting will be the past, the occasion will be the present and the pre-occupation will be the future.

It is most appropriate that the 1990 conference should be located in England, where a ferment of innovation is currently under way. It is equally appropriate that the Training Agency (UK) - one of the instigators of this fermentation process - should be co-organising such a conference which aims to mobilise educationalists

"towards visions of the future".

If you would like more details about the conference, contact:

Tom Dodd
2020 Conference Coordinator
Training Agency
TVEI Unit
236 Grays Inn Road
London WC1X 8HL
England

WORKING GROUP FOR SCHOOL-BASED DEVELOPMENT

Following the School-Year 2020 International Conference in Colorado (October 1988), it was decided to continue the life of the conference's working group concerned with School-Based Development.

A small planning team, coordinated by Peter Holly, met in Dortmund and Amsterdam to organise a major event. A case study visit took place in June 1989, and twenty-nine representatives from several countries (Norway, Holland, Spain, USA, Finland, England, Scotland and Northern Ireland) participated in the event.

The intention was to explore school-based development in action in the form of the Programme of Evaluation in Grampian Schools (PEGS). The week proved a most intensive investigation and was structured in three sections:

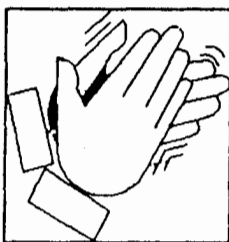
- * two-day case study visits to project schools which provided material for a process evaluation of the work of each of the schools involved. This provided a great opportunity to interact with the schools on a consultancy basis;
- * an end-of-year conference for the project schools containing workshop presentations, many of which were led by members of the visiting group;
- * a think-tank for the working group members on the nature of the work in progress in Grampian and of school-based development itself.

The visit ended with a planning session during which future events were planned:

- * Boston, USA, in April 1990 - to be organised by Richard Basom and Susan Toft-Everson
- * Oxford, England, as part of the International School-Year 2020 conference scheduled for September 1990, to be organised by Peter Holly with the help of the "Dutch connection", including Bas Auer, Bea Pruijt, Leike Melchers and Louise van Hartingsveld
- * Murcia, Spain, possibly in January 1991 - organised by Juan Manuel Escudero

For further details of the Working Group's activities, please contact Peter Holly, Director, IMTEC(UK), CRAC, Sheraton House, Castle Park, Cambridge, CB3 0AX, England.

For further details of the PEGS initiative, please contact Larry Gray or Gordon Shanks, at: Grampian Regional Authority, Education Department, Resources Centre, Belmont Street, Aberdeen, AB1 1JH, Scotland.



IMTEC STAFF

The following staff members work in or out of Norway:

Per Dalin continues to head IMTEC, and also has special responsibility for the work in OECD-countries.

Tor Bergli works on organizational development and evaluation.

Mette Eldevik works on evaluation, consultant training programs, and "2020".

Ivo Gajda work on computer programmes.

Torill Haaland provides secretary support.

Hallvard Kåre Kuløy is overall responsible for overseas programmes.

Inger-Johanne Lange continues on a part-time basis on wordprocessing and database-development.

Nelson Sepulveda is our finance officer.

Kari Milner Strøm is research assistant.

Knut Stranden is overall responsible for the projects in the Nordic countries.

Anne Welle-Strand is project leader for the data evaluation project and pedagogically responsible for the Pakistan project.

We welcome new staff: **Peter Holly**, **Katherine Quigley** and **Dido Whitehead** who are all working to develop the IMTEC-UK Foundation.

RECOMMENDED PUBLICATIONS

THE DEMOCRATIC TRADITION AND THE EVOLUTION OF SCHOOLING IN NORWAY, by Val D. Rust. Published by Greenwood Press, London, 1989. ISBN 013-26849-5.

Awarded the International Symbol for Norway's 250th anniversary of public education, this study of educational reform in Norway, the first ever in English, isolates and defines the historical forces that have moulded Norwegian school reforms since the country gained its independence.

The book examines the ways by which Norway was able to move from a traditional dualistic school structure to the more comprehensive and unified form that serves the country today. It

focuses not only on the structural changes that occurred in primary and secondary schools, but also on the equality of educational opportunity and the issue of where control over education lies.

Contents:

Section I: Social and Educational Foundations in Norway; Democracy and Education in Pre-Independent Norway; Educational Alternatives at the Time of Independence; Educational Imperatives in Independent Norway;

Section II: First Reform Cycle: A Norwegian School Structure Takes Form; Educational Overtones in Romantic Naturalism; The Winds of Educational Reform; Social Reform Impulses at Mid-Century; Hartvig Nissen and the Foundation of Modern Schooling;

Section III: Second Reform Cycle: A Norwegian Folk School; A Common Foundation School; Education Beyond the Folk School; Extension of Participation in Education; Workers and Their Education;

Section IV: Third Reform Cycle: Towards a Unified School; Education in a Free Norway: 1905 and Beyond; The Labor Party Takes Command; Education during World War II and its Aftermath;

Section V: Fourth Reform Cycle: Structural Reform Completed; Experimenting with New School Forms; The Nine Year Basic School; Reform at the Upper Secondary School;

Section VI: Norwegian School Reform: Consequences and Problems; Equality of Educational Opportunity; Control Issues in Norwegian Education; Educational Reform in Norway.

SCHOOL EFFECTIVENESS AND IMPROVEMENT, edited by David Reynolds, Bert P.M. Creemers and Ton Peters. Published jointly by: School of Education, University of Wales College of Cardiff, Cathays Park, Cardiff, Great Britain and RION Institute for Educational Research, Westerhaven 15, Postbus 1286, 9701 BG Groningen, The Netherlands.

Contents:

Section One: "State of the Art" Reviews (D. Mann, D. Reynolds, P. Dalin).

Section Two: School Effectiveness and Improvement in Different Countries (J. Chapman, S. Steven with assistance from D. Banks, L.E. Sackney, D. Reynolds, K. Aurin, B.P.M. Creemers and E. Lugthart, M. Martin, D. Hannon and P. Daly, P. Cuttance, G.R. Austin).

Section Three: School Effectiveness Research and Issues (W.L. Mellor, J.D. Chapman, C.T. Fitz-Gibbon, P.B. Tymms, R.D. Hazelwood, P. Cuttance, P. Sammons, A. Franklyn-Stokes,

H.P. Brandsma, J.W.M. Knuver, M.J. de Jong, W. van der Grift, G. Vulliamy).

Section Four: School Improvement Research and Issues (K. Piper, J. Bashi, Z. Sass, L. Stoll, D. Fink, R.A. Wickstrom, B.J. Caldwell).

PATHWAYS TO CHANGE, Improving the Quality of Education in Developing Countries, by Adriaan Verspoor. World Bank Discussion Papers No. 53. Published by the World Bank, Washington, 1989. ISBN 0-8213-1228-6.

Contents:

I. Background, II. Methodology, III. Bank Support for Educational Change, IV. The Process of Change, V. Initiation, VI. Implementation Strategies: A Framework for Analysis, VII. Implementation Strategies: Case Experience, VIII. Administration Development, IX. Teacher Training, X. Building and Maintaining Commitment, XI. Late Implementation: Degree of Use, XII. Institutionalization, XIII. Implementation and Outcomes, XIV. The Challenges of Large-Scale Change, XV. Implications for Project Design and Implementation, Bibliography.

ZUKUNFTSWISSEN UND BILDUNGSPERSPEKTIVEN, edited by Joachim Jens Hesse, Hans-Günther Rolff and Christoph Zöpel. Published by Nomos Verlagsgesellschaft, Baden-Baden, 1988. ISBN 3-7890-1627-6.

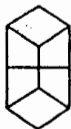
Contents:

Vorbemerkung (editors),
I. Einführung (C. Zöpel, H.-G. Rolff),
II. Bestandsaufnahme und erkennbare Entwicklungen (B. Lutz, W. Klauder, E. Beck-Gernsheim, J. Zinnecker),
III. Perspektiven und Handlungsmöglichkeiten (P. Dalin, E.-U. von Weizsäcker, H. Schmidt, W. Schlaffke, H. Preiss, P. Meyer-Dohm),
IV. Diskussionsbeiträge (U. von Alemann, R. Mackensen, R. Kreibich, K. Nevermann, U. Battis, W. Schuchardt, M. Kaiser),
V. Zusammenfassung und Ausblick (T. Ellwein, J.J. Hesse),
VI. Anhang, Autorenverzeichnis.

"REPORT FROM SNOWMASS", a presentation of the second international "2020"-conference in "Note-Worthy", the McREL-journal.

Contact: Larry Hutchins
McREL
12500 E. Iliff Ave., Suite 201
Aurora, CO 80014, USA





2020 NEWSLETTER

AUTUMN 1989

IMTEC - INTERNATIONAL LEARNING COOPERATIVE
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THE IDEA

Our world is going through dramatic changes, in politics, economics, technologies and social policies - and all these developments will have major implications for educational policies and practice.

We are beginning to see major changes within education as well, priorities are changing towards educational investments outside the school system (e.g. industrial training), new information technologies creates new learning opportunities, vocational training is being redefined in many areas, new and more responsible roles for youth is becoming more common in schools (e.g. cooperative learning), new challenges to our societies and the world creates pressures for change in the curriculum (e.g. pollution of our environment), new and innovative programs are created on a large scale on the boundaries between schools and the world of work (e.g. the Technical and Vocational Education Initiative (TVEI) in the UK), and some fundamental questions are being asked about the role of schools in post-industrial and information rich societies.

These and new challenges will be with us for some time. New, innovative approaches to educational practice can be studied today. Much of what will be common practice in Year 2020 is already here. Of course, we shall continuously discover new challenges and new solutions, but we do not need to sit and wait.

The international context gives us a unique opportunity. It gives us a chance that only laboratories usually gives us, namely to study new approaches in another environment without changing our own system. Many countries are testing out innovative approaches to educational dilemmas, several interdisciplinary research groups discuss new and innovative solutions - however - it happens in small "corners" of the world, sometimes in just one school or in one research laboratory, sometimes it may be used by a handful of individuals.

The idea of the "School Year 2020"-project is to create a lively, innovative, future oriented international educational network that enable its members to learn from each other, share experiences, compare notes, exchange materials, visit each others sites, choose some projects for longitudinal evaluation and research, publish findings and create new ideas and programs.

THE NATURE OF THE 2020 NETWORK

IMTEC is exploring new territory in the "2020-project". It is not a centrally sponsored and centrally managed project. The idea and the setting is created by IMTEC, the initiative is ours. So far, that is about it! We do not want to push the project faster than it develops. It is based on the idea that a need exists to explore new frontiers and to learn from each other.

Quite often the innovator is isolated and not appreciated in the local context. Often it is a long distance to a colleague. Sometimes it is hard to discuss what one really wants to do - may be because the context does not allow us even to try. Quite often, however, it is the imagined boundaries created by ourselves that limit our space and the potential of our alternatives. Meeting on "neutral ground", meeting with others who want to explore the undiscovered is at the heart of the "2020-project".

But it starts with you. A network is no more than its members. We have tried to call on unique individuals - from education, research, industry, public administration and media to take the initiative in each country. There are already some 1400 names on IMTECs "2020-list". We will soon begin to "network" all members according to interests. You will be asked what kind of interests and experiences you want to share with others. We believe it will be exiting! To make it work depends on your own initiatives and ideas and your willingness to share your thoughts and experiences, materials and concepts.

In several countries a "National Committee" is organized as the "hub" of the network. The countries differ in terms of this set up. It largely depends on national and cultural factors. What is important, is that some are responsible for the coordination of the work in your country. We do encourage an open network, a chance for anyone with new ideas to come in. And you have the right to propose any national activity to your committee.

At the international level you may join the large international seminars as well as the more specialised working groups. Look out for the November conference in Holland this fall and the large 2020-world conference in the UK in September next year. So far we have only one active international working group, (for School-Based Deve-

lopment). (See IMTECs Newsletter). We will have several. And you will find one or two that you would like to join. Do it.

THE INTERNATIONAL STEERING COMMITTEE

The International Steering Committee (ISC) has had three meetings, in Soest (Germany), in Snowmass (Colorado) and in East Hampstead (UK). The members of the Committee are presented elsewhere in the Newsletter. The chair is held by professor Bab Kleekamp (University of Amsterdam) and the Secretary is Theo Liket (Holland).

The Soest meeting was mainly set up to plan the Snowmass conference and to discuss the nature of the project. It was generously hosted by the Landesinstitute für Schule und Weiterbildung, a major Research and Development Center in the beautiful town of Soest in Nordrhein Westfalia. The members were introduced to the reform scene in education in the Federal Republic through a presentation by dr. Knut Neverman.

The Steering Committee meeting in Snowmass proposed an agenda for 1989/90 for the "2020-project", including a national agenda (e.g. establishing a National Committee, a Secretariat, a first list of network members, a strategy for funding and identification of innovative cases) and an International Agenda (e.g. the UK conference, an electronic network, planning meetings for IDP, A+ and "Thinking skills", trainer of trainers seminars, the November meeting and fund raising). Draft statutes were discussed.

The meeting in East Hampstead further explored the development of the project, models of national organizations and, together with members of the British Committee, discussions took place on the UK conference (September 1990). A Conference Committee was elected with the following members: Valerie Bragg (UK), Tom Dodd (UK), Susan Toft Everson (USA), Stanley Goodchild (UK), Peter Holly (IMTEC-UK) and Theo Liket (rep. IMTEC staff and the ISC). The meeting decided to make an experiment with electronic conferencing using the Times Educational Network. The November conference in Holland was discussed and a tentative program proposed. Professor David Hargreaves, Cambridge, invited us to a discussion of some of the basic (and rather drastic) changes that takes place in British education today.

IMTEC is following up on all the activities proposed: In January this year the first international work group on the "Institutional Development Program" (IDP) was organized in Norway. The A+ project (developed by McREL) was studied in an expert meeting in the Netherlands

in June and the meeting was followed up by a training seminar in Kansas in August. The IMTEC-NOVO-group in Holland is testing some of the "Thinking Skills"-materials from the "Tactics" program and we will present an Action plan for further developments in this area this fall, which will enable interested 2020-members to join actively in program developments. The results of these development activities will be presented in the November conference in the Netherlands. Should you be interested in either of the two areas ("Institutional Development" or "Thinking skills"), contact your 2020-chairperson or IMTEC directly about the November conference. Unfortunately we have very limited space in this meeting (only a total of 60).

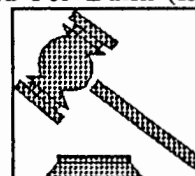
We are also exploring the possibilities of setting up an experiment with electronic conferencing. At this stage we are struggling with some cost-problems in some countries related to international computer communication, problems we hope to be able to solve in the near future.

NATIONAL ACTIVITIES

The activities at the national level are uneven. Some countries already have a National Committee or an active network (e.g. Belgium, the Federal Republic of Germany, Finland, Netherlands, Norway, UK), in other countries an active IMTEC-associate is working to establish a more permanent structure (e.g. Austria, Canada, Denmark, France, Spain, Switzerland, USA) and in other countries there is an interest but no significant move towards the organization of a National Committee.

There are several initial tasks dealt with by the Committees at this stage: The organization of the Group itself, identification of innovative education practices, identification of persons to recruit for the 2020-network, the dissemination of information from the international seminars, linking of national institutions to new IMTEC initiatives (e.g. IDP, A+, Thinking skills, etc) and to review proposals for international activities.

To carry on work in-between sessions of the International Steering Committee meetings, the following Management Committee was elected for two years at the Colorado meeting: Bab Kleekamp (chairman), Larry Hutchins (coordinator North America), Theo Liket (Secretary and Coordinator for Europe), Mette Eldevik (IMTEC Project Coordinator) and Per Dalin (IMTEC Director).



TRAINING FOR SCHOOL DEVELOPMENT

The IMTEC training program for School based development consultants is going on at present in two countries: Germany (second generation), the Netherlands (second and third generation). We are also planning a renewed program in Norway (it may be a Nordic program). We are also in the planning stage of this program in the UK.

The German program has the School District as the target for change, selecting teams of consultants from the five regions in Nordrhein Westphalia to work in pairs with single schools, at the same time training school supervisors and trainers.

The program is administered by Herbert Buchen, in the NRW Landesinstitut für Schule unter Weiterbildung (LSW, Soest), a major Research and Development Institution in the Federal Republic of Germany. Herbert Buchen, Professor Hans-Günther Rolff from the University of Dortmund, Leo Horster (LSW), Bab Kleekamp (Amsterdam) and Per Dalin constitute the Management Group.

H.G. Rolff and Per Dalin intend to produce a "European OD-book" on education, with practical cases, exercises and background reading mainly based on the European materials - hopefully ready by the end of 1990. Also IMTEC and the LSW will present a materials base for a complete training program (consultants, supervisors and trainers) by the end of 1990.

The Dutch project works closely with a network of Teacher Training institutions and goes into the third generation this fall. The program is headed by Bab Kleekamp and Theo Liket and supported by Caroline Vet and Sylvia Stawski. Evaluation of the program is undertaken by Theo Liket. Mette Eldevik works as a formative evaluator in the Second Program. The Project already has produced a large material base in Dutch, and a number of well qualified Dutch consultants are presently on the market. Per Dalin's textbook "School Development", (Dutch) was published in May this year supported by NOVO. ("Organisatie Ontwikkeling in School & Onderwijs", Samson, 1989.)

COOPERATION WITH McREL

The Second "School-Year 2020" International Conference held in Colorado, October 1988, was a joint undertaking by McREL (the Mid-

Continent Regional Educational Laboratory) and Imtec.

McREL is one of nine regional educational laboratories serving different regions of the United States and its protectorates.

The "Labs" are practice institutions, assisting educators to use and apply the findings and products of research and development in their daily work in classrooms, schools, districts, state education agencies and related setting. McREL is the laboratory which serves the mountain/plains region including: Colorado, Kansas, Missouri, Nebraska, North Dakota, South Dakota and Wyoming.

Our cooperation with McREL will continue. A Development Group represented by people from McREL and Imtec is presently working on new programs building on McREL's Achieving Excellence Program (A+) and Imtec's IDP, The Institutional Development Program.

McREL's A+ is a site or schoolbased management system. It organizes and uses research-based knowledge to increase educational efficiency, effectiveness and excellence. It does this by giving educators a framework for curriculum, instruction and assessment decisions so that the limited resources and energy available for school improvement and redesign can be directed at the strategies and tactics that are most likely to foster excellence in your school(s). The A+ management system also provides unique assessment tools for maintaining progress and redirecting energy.

Pilot programs of A+ will take place in the Netherlands, and most likely in the UK and Norway during 1989/90.

Both IDP and A+ will be the topics on the "2020" - November conference in the Netherlands (see announcement).

THINKING SKILLS

IMTEC is presently developing a new "Thinking skill"-program, building upon development work in several countries. Central to our interest has been the "Tactics"-program developed by McREL. Also several European projects are taken into account. Professor Bab Kleekamp and drs. Sylvia Stawski (Amsterdam) are coordinating the work in this area.



ORGANIZATIONAL DEVELOPMENT PROJECTS

One of the most important strategies in IMTECs work is Organizational Development. Several staff members have one or several ongoing OD projects and OD tools are often used in most IMTEC programs.

Mette Eldevik is responsible for the evaluation of a Public Dental Health Care Project. This project is initiated by the Norwegian Directorate of Health and supported by the Department of Health and Social Security.

The overall objective of the project is to solve new issues without any net increase of costs, through flexible use of staff and change of routines. This is assumed to take place without reducing the quality of services.

She uses a formative evaluation approach by working in close cooperation with the Project Management Team. Regular feedback to all participants to help making informed decisions during the project period, is a key strategy.

Tor Bergli (in cooperation with Per and Mette) is working with the redesign of Oslo Water and Sewage Works, an Objective-driven OD project over some 3-4 years. The Director Oddvin Tokheim and his 6 member Team of Directors work closely with 6 Task forces. Tor is the main external OD consultant working with two internal OD persons, Bjarne Helland and Wenche Lien and the 6 Task forces. The Project combines intensive Leadership-team development with OD work, especially within economy control, development of work organization and staff development. To us in IMTEC, a purely Technical agency is a challenge and a great learning experience.

Knut Stranden is presently building a comprehensive OD project with several County-offices and Superintendents offices in the South Eastern part of Norway ("Østlands-prosjektet"). So far we are experimenting with a total new design for Leadership Development in the Rælingen community - starting with Classroom Management and based on the needs at this level designing programs for Heads and Superintendents. In the city of Gjøvik attempts are made to reduce costs involving all actors. Quite a challenge!

Per Dalin is assisting the Tanzanian Ministry of Education developing the basis for a "Donors' conference" to hopefully increase aid to education and make it more effective. Several Tanzanian researchers have contributed to this project by writing some very interesting papers

about the Tanzanian educational situation, edited by professor Herme J. Mosha (The papers are sponsored by the World Bank). Per is also engaged in OD work with the Vocational Training Branch of the International Labour Organization, a job he is doing in close cooperation with the director, Richard Johanson.

HOW SCHOOLS IMPROVE

In our Spring 1988 Newsletter, there is a brief note on this project, which is now in full operation, supported by a grant from the Norwegian Aid Agency NORAD through the Population and Human Resources Department of the World Bank. How Schools Improve - HSI - is a purely qualitative research project on how village schools succeed in implementing nationally implemented educational reforms or major educational changes, using a sample of 12 schools in each country. The countries are Bangladesh, Colombia and Ethiopia.

The major research questions of the study are as follows:

- a) What are the outcomes of successful strategies for the implementation of educational change, seen in terms of quality of implementation, institutionalization, and student outcomes, as well as in terms of unexpected outcomes?
- b) What do successful strategies look like, both at the macro (country) level and the micro (local school) level?
- c) What determines successful strategies? Determinants may include administrative capacity development, teacher training, and commitment-building efforts, among others.
- d) How are successful strategies integrated at the macro and micro levels.

These major questions, with associated sub-questions, are organized in terms of two major substudies of the project, the country-level and school level studies.

1. The country-level substudy is brief, and mostly confirmatory, aiming to see whether the previous desk case study of the program (Adrian Verspoor: "Pathways to change: Improving the Quality of Change in Developing Countries", World Bank, 1987) was accurate, and to revise its conclusions where needed.

2. The school-level substudy is more extensive, and mostly exploratory, since little is known about how local-level implementation proceeds. Some confirmatory questions are proposed, drawn from the prior desk case studies, and from studies of change in developed countries.

It includes in-depth interviews of parents, teachers, headmasters, "support-givers" (i.e. inspectors, supervisors, curriculum specialists, in-service trainers, etc.) and district administrators, as well as classroom observations.

In the Spring this year, a pre-testing workshop was held in Rome with members of the country teams, the specialist panel, the coaches and the coordinator of the study, Hallvard Kuløy, in order to finalize the instruments based on the field testing conducted in each country during the Winter 1988-89.

In Bangladesh, the research team is headed by Professor Mazharul Haque of the Institute of Educational Research at the University of Dhaka. The team is provided with research facilities by the Bangladesh Bureau of Educational Information and Statistics (BANBEIS). Styrbjørn Gustafsson is research coach.

In Colombia, the research team is headed by Dr. Carlos Rojas at the Instituto SER de Investigacion. Ray Chesterfield is research coach.

In Ethiopia, the principal investigator is Tesfaye Dubale, Head of the National Curriculum Development Department, with Anbezu Biazen as Chief Researcher. Per Dalin is research coach.

In order to provide the best possible support on qualitative research methodology and analysis, a specialist panel is also provided directly through the World Bank, consisting of Matthew Miles and Michael Huberman, well known for their pioneering work "Qualitative Data Analysis: A sourcebook of New Methods", and Per Dalin of IMTEC.

PRIMARY EDUCATION IN PAKISTAN

In the spring of 1988, IMTEC, NORAD and the University of Gothenburg did a review of possible Norwegian assistance to education in Pakistan.

From the recommendations of this review, it was agreed on that qualitative improvement of Primary Education was going to be the main

sector for the development cooperation between Pakistan and Norway.

IMTEC is responsible for following up on this project, coordinated by Hallvard Kåre Kuløy with Anne Welle-Strand being responsible for the pedagogical content.

IMTEC is working closely with NORAD in Norway as well as in Pakistan, and we have extensive professional collaboration with Pakistani institutions and consultants in both countries.

The main projects are:

- 1 In-service training of Primary School Teachers, through the system of Allama Iqbal Open University. The emphasis of the project is a qualitative improvement of a six months course for 50 000 teachers in the project period, including training and workshops for staff, tutors and teachers.
- 2 Working with the regional Textbook Boards, including training of staff and pretesting of books, to ensure incremental improvement in primary textbooks.
- 3 Supplementary reading material for primary schools.
- 4 Consultancy input in the World Bank Project for Primary Education in Sind, mainly on components related to school-nutrition and the enrollement and retention of girls in Primary Education.

REMINDER: The "2020"-conference on A+ and IDP in the Netherlands, November 6-8.

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Prinsengracht 227
1015 DT Amsterdam
Holland

INSTITUTIONAL EVALUATION

IMTEC has been involved in "School Based Review" since 1976, when IMTEC staff and fellows, including people like Larry Krafft, Marvin Wideen, Val D. Rust and others pioneered this field in Teacher Training Institutions. Since that time our work has brought us to most types of schools and institutions of Higher education in both the industrialized world as well as in developing countries.

NORAD - the Norwegian Agency for Development - contracted IMTEC to do a fairly comprehensive review of the "Institute for Development Management" (IDM) in Tanzania this year.

An international team of evaluators, Janet Poley (USA), Kami Rwegasira (Tanzania), Anthonie Wattel (Holland), Daniel Yona (Tanzania) and Per Dalin (Norway) undertook this assignment. Kari Milner Strøm from IMTEC coordinated all technical and administrative work.

The process was particularly interesting: The IMTEC team worked closely with representatives of IDM, the Tanzanian Government and NORAD to establish criteria, evaluation standards and the design (using IMTEC designed exercises). IDM is a large institution with close to 2 000 students and staff altogether. Representative samples of all categories of students and staff responded to the internal review (using a modified GIL), and the analysis of this material guided the IMTEC Team in its data-gathering with IDM clients, the Government and students and staff.

The report, presently under review by the Tanzanian Government and NORAD sets out 10 proposals for further development and renewal of this largest African Management Development institution.

FOR YOUR DIARY

Announcing the **Third International Conference** of IMTEC's "School-Year 2020" Project to be held at the University of Oxford, Oxford, UK, 4th - 8th September 1990.

This conference, which is being co-organised by IMTEC and the Training Agency (UK), will provide a great opportunity to meet educators involved in the restructuring of education in a world-wide network and, by working collaboratively, to plan education in the future. The IMTEC project, "School-Year 2020", was established in 1987; the first international conference was held in Finland with focus on the role of the media and information technology in schools of the future. The second conference, held in Snowmass, Colorado in 1988, was concerned with the redesign of schooling. In terms of the third conference, the intention is to extend the successes of the Helsinki and Snowmass conferences by bringing together policy-makers, developers, innovative practitioners, trainers and researchers to build an agenda for action - in order to make change happen.

This agenda for action will have two dimensions: the contents (the "what") of future schooling, and the processes of change management (the "how"). The format of the conference will itself be innovative, but based around an appropriate balance of key-note presentations, case-study investigations and working-group sessions.

The setting for the conference will be in the historic and beautiful city of Oxford. Where better to create visions of the future than amidst the "dreaming spires" of Oxford! Accommodation will be in Balliol and Trinity Colleges, which are both part of the University of Oxford and steeped in history themselves. So the setting will be the past, the occasion will be the present and the pre-occupation will be the future.

It is most appropriate that the 1990 conference should be located in England, where a ferment of innovation is currently under way. It is equally appropriate that the Training Agency (UK) - one of the instigators of this fermentation process - should be co-organising such a conference which aims to mobilise educationalists

"towards visions of the future". w/none?

If you would like more details about the conference, contact:

Tom Dodd
2020 Conference Coordinator
Training Agency
TVEI Unit
236 Grays Inn Road
London WC1X 8HL
England

WORKING GROUP FOR SCHOOL-BASED DEVELOPMENT

Following the School-Year 2020 International Conference in Colorado (October 1988), it was decided to continue the life of the conference's working group concerned with School-Based Development.

A small planning team, coordinated by Peter Holly, met in Dortmund and Amsterdam to organise a major event. A case study visit took place in June 1989, and twenty-nine representatives from several countries (Norway, Holland, Spain, USA, Finland, England, Scotland and Northern Ireland) participated in the event.

The intention was to explore school-based development in action in the form of the Programme of Evaluation in Grampian Schools (PEGS). The week proved a most intensive investigation and was structured in three sections:

- * two-day case study visits to project schools which provided material for a process evaluation of the work of each of the schools involved. This provided a great opportunity to interact with the schools on a consultancy basis;
- * an end-of-year conference for the project schools containing workshop presentations, many of which were led by members of the visiting group;
- * a think-tank for the working group members on the nature of the work in progress in Grampian and of school-based development itself.

The visit ended with a planning session during which future events were planned:

- * Boston, USA, in April 1990 - to be organised by Richard Basom and Susan Toft Everson
- * Oxford, England, as part of the International School-Year 2020 conference scheduled for September 1990, to be organised by Peter Holly with the help of the "Dutch connection", including Bas Auer, Bea Pruijt, Leike Melchers and Louise van Hartingsveld
- * Murcia, Spain, possibly in January 1991 - organised by Juan Manuel Escudero

For further details of the Working Group's activities, please contact Peter Holly, Director, IMTEC(UK), CRAC, Sheraton House, Castle Park, Cambridge, CB3 0AX, England.

For further details of the PEGS initiative, please contact Larry Gray or Gordon Shanks, at: Grampian Regional Authority, Education Department, Resources Centre, Belmont Street, Aberdeen, AB1 1JH, Scotland.



IMTEC STAFF

The following staff members work in or out of Norway:

Per **Dalin** continues to head IMTEC, and also has special responsibility for the work in OECD-countries.

Tor **Bergli** works on organizational development and evaluation.

Mette **Eldevik** works on evaluation, consultant training programs, and "2020".

Ivo **Gajda** work on computer programmes.

Torill **Haaland** provides secretary support.

Hallvard Kåre **Kuløy** is overall responsible for overseas programmes.

Inger-Johanne **Lange** continues on a part-time basis on wordprocessing and database-development.

Nelson **Sepulveda** is our finance officer.

Kari Milner **Strøm** is research assistant.

Knut **Stranden** is overall responsible for the projects in the Nordic countries.

Anne **Welle-Strand** is project leader for the data evaluation project and pedagogically responsible for the Pakistan project.

We welcome new staff: Peter Holly, Katherine **Quigley** and Dido **Whitehead** who are all working to develop the IMTEC-UK Foundation.

RECOMMENDED PUBLICATIONS

THE DEMOCRATIC TRADITION AND THE EVOLUTION OF SCHOOLING IN NORWAY, by Val D. Rust. Published by Greenwood Press, London, 1989. ISBN 013-26849-5.

Awarded the International Symbol for Norway's 250th anniversary of public education, this study of educational reform in Norway, the first ever in English, isolates and defines the historical forces that have moulded Norwegian school reforms since the country gained its independence.

The book examines the ways by which Norway was able to move from a traditional dualistic school structure to the more comprehensive and unified form that serves the country today. It

focuses not only on the structural changes that occurred in primary and secondary schools, but also on the equality of educational opportunity and the issue of where control over education lies.

Contents:

Section I: Social and Educational Foundations In Norway; Democracy and Education in Pre-Independent Norway; Educational Alternatives at the Time of Independence; Educational Imperatives in Independent Norway;

Section II: First Reform Cycle: A Norwegian School Structure Takes Form; Educational Overtones in Romantic Naturalism; The Winds of Educational Reform; Social Reform Impulses at Mid-Century; Hartvig Nissen and the Foundation of Modern Schooling;

Section III: Second Reform Cycle: A Norwegian Folk School; A Common Foundation School; Education Beyond the Folk School; Extension of Participation in Education; Workers and Their Education;

Section IV: Third Reform Cycle: Towards a Unified School; Education in a Free Norway: 1905 and Beyond; The Labor Party Takes Command; Education during World War II and its Aftermath;

Section V: Fourth Reform Cycle: Structural Reform Completed; Experimenting with New School Forms; The Nine Year Basic School; Reform at the Upper Secondary School;

Section VI: Norwegian School Reform: Consequences and Problems; Equality of Educational Opportunity; Control Issues in Norwegian Education; Educational Reform in Norway.

SCHOOL EFFECTIVENESS AND IMPROVEMENT, edited by David Reynolds, Bert P.M. Creemers and Ton Peters. Published jointly by: School of Education, University of Wales College of Cardiff, Cathays Park, Cardiff, Great Britain and RION Institute for Educational Research, Westerhaven 15, Postbus 1286, 9701 BG Groningen, The Netherlands.

Contents:

Section One: "State of the Art" Reviews (D. Mann, D. Reynolds, P. Dalin).

Section Two: School Effectiveness and Improvement in Different Countries (J. Chapman, S. Steven with assistance from D. Banks, L.E. Sackney, D. Reynolds, K. Aurin, B.P.M. Creemers and E. Lughart, M. Martin, D. Hannon and P. Daly, P. Cuttance, G.R. Austin).

Section Three: School Effectiveness Research and Issues (W.L. Mellor, J.D. Chapman, C.T. Fitz-Gibbon, P.B. Tymms, R.D. Hazelwood, P. Cuttance, P. Sammons, A. Franklyn-Stokes,

H.P. Brandsma, J.W.M. Knuver, M.J. de Jong, W. van der Grift, G. Vulliamy).

Section Four: School Improvement Research and Issues (K. Piper, J. Bashi, Z. Sass, L. Stoll, D. Fink, R.A. Wickstrom, B.J. Caldwell).

PATHWAYS TO CHANGE, Improving the Quality of Education in Developing Countries, by Adriaan Verspoor. World Bank Discussion Papers No. 53. Published by the World Bank, Washington, 1989. ISBN 0-8213-1228-6.

Contents:

I. Background, II. Methodology, III. Bank Support for Educational Change, IV. The Process of Change, V. Initiation, VI. Implementation Strategies: A Framework for Analysis, VII. Implementation Strategies: Case Experience, VIII. Administration Development, IX. Teacher Training, X. Building and Maintaining Commitment, XI. Late Implementation: Degree of Use, XII. Institutionalization, XIII. Implementation and Outcomes, XIV. The Challenges of Large-Scale Change, XV. Implications for Project Design and Implementation, Bibliography.

ZUKUNFTSWISSEN UND BILDUNGSPERSPEKTIVEN, edited by Joachim Jens Hesse, Hans-Günther Rolff and Christoph Zöpel. Published by Nomos Verlagsgesellschaft, Baden-Baden, 1988. ISBN 3-7890-1627-6.

Contents:

Vorbemerkung (editors),
I. Einführung (C. Zöpel, H.-G. Rolff),
II. Bestandsaufnahme und erkennbare Entwicklungen (B. Lutz, W. Klauder, E. Beck-Gernsheim, J. Zinnecker),
III. Perspektiven und Handlungsmöglichkeiten (P. Dalin, E.-U. von Weizsäcker, H. Schmidt, W. Schlafke, H. Preiss, P. Meyer-Dohm),
IV. Diskussionsbeiträge (U. von Alemann, R. Mackensen, R. Kreibich, K. Nevermann, U. Battis, W. Schuchardt, M. Kaiser),
V. Zusammenfassung und Ausblick (T. Ellwein, J.J. Hesse),
VI. Anhang, Autorenverzeichnis.

"REPORT FROM SNOWMASS", a presentation of the second international "2020"-conference in "Note-Worthy", the McREL-journal.

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