



Chronicle

Leibniz Institute for Science Education
at the University of Kiel

1966 – 2006



Preliminary events

The „Sputnik shock“ in 1957 showed that the East was not as far behind technologically as it had been assumed until then. The Soviet Union – and not the USA – sent the first earth satellite into the universe. This caused a change in educational policy in the USA and Western Europe. The reasons for the West's „lagging behind“ were especially seen in the educational system. There was a grave lack of science teachers at that time. Support programs and science curricula were to change that. The physicist, Professor Dr. Karl Hecht, used this to develop the idea of an „institute for science education“ in the early 1960's: „In view of insufficient science education, I felt it was necessary ... to find suitable ways to mediate a better understanding of science and technology to our citizens“ (quoted from: Meine Erinnerungen an die Vor- und Frühgeschichte des IPN von Karl Hecht, 1986).



Local newspaper (Kieler Nachrichten), reporting about the formation of the IPN, April 22nd, 1966.



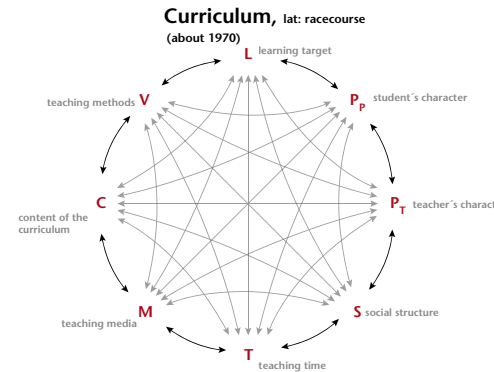
Prof. Dr. Karl Hecht
First director *1903 †1994

The founder

Karl Hecht inspired the foundation of the IPN in 1966. He had done scientific work at the universities of Göttingen and Bonn until 1934. Hecht then left the university area without losing touch with it and worked for industry. While he was department head and authorized representative of the teaching material company Leybold in Cologne, he was very much involved in the general problems of science education. Due to his initiative, the German Organization of Technical and Scientific Associations presented the Volkswagen Foundation a „Memorandum to found an institute for science education“ in August 1964.

The IPN has two more departments:
Biology Education and Educational Science

On December 1st, 1966, the IPN opened under the management of Professor Dr. Karl Hecht with eight staff members located in two rooms of the University of Kiel's Institute for Applied Physics. Professor Dr. Werner Kroebel (*1904 † 2001), Director of the Institute for Applied Physics and a friend of Hecht played a decisive role in determining the location. The first two departments were Physics Education and Chemistry Education.



The IPN building, Olshausenstraße 62, was opened in October 1970 after a three year period of construction. The Volkswagen Foundation financed the construction.

Curriculum research

The focal point of the IPN's work between 1966 and 1980 was the development and scientific testing of curricula for biology, chemistry and physics education. The goal is lessons oriented towards experimental work for 5th and 6th graders. This is something new for Germany at that time: The curricula offer subject-oriented information, concepts for lessons, equipment and tests including the necessary guidelines for evaluation. The curricula are mainly tested at schools in Kiel.





1971

1972

1973

1974

1975

1976

A fifth area of work is added:
Research Methodology and Statistics



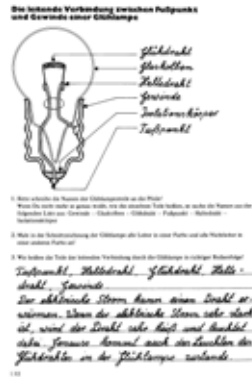
After a five years trial period, the first IPN curricula are published by Ernst Klett Verlag: the IPN Physics Curriculum and the IPN Chemistry Curriculum for the grades 5 and 6.

Prof. Dr. Karl Frey,
* 1942 † 2005

Director of the Educational Science Department, he becomes Hecht's successor as head of the institute at the age of 29. He is credited with the interdepartmental work which is still practiced at the IPN – all researchers belong to a certain department, but they work in various research areas. Today, there are seven areas that are all systematically interlocked.



Karl Frey expanded the IPN from an institute developing curricula to an internationally recognized research institute, working together with German and international educational institutes as well as international organizations such as the Council of Europe, UNESCO and OECD in his seventeen years as head of the institute.



Local newspaper (Kieler Nachrichten), September 9th, 1973, reporting on the agreement that the IPN is jointly funded by the government and the federal states.



Professor Dr. Karl Hecht was awarded the Federal Cross of Merit by Walter Scheel, the Federal President, for his dedicated involvement in founding and directing the Institute for Science Education.

„Der Mensch und die Tiere“ (Man and the Animals) is the first unit in the IPN Biology Curriculum Unit Bank to be published by Aulis Verlag.

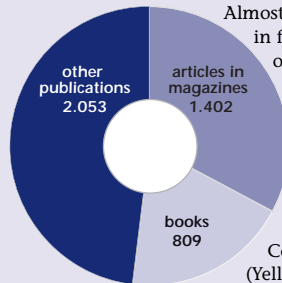


The teaching materials empirically developed by the IPN are presented to the teachers in continuing education seminars.



The IPN coordinates the International Chemistry Olympiad and the Physics Olympiad one year later.

IPN Publications 1966 – 2006



Almost 5000 publications have been released in forty years. These include a number of its own publications like the „Blaue Reihe“ (Blue Series) and the „IPN-Arbeitsberichte“ (IPN Work Reports) that were compiled as the „IPN-Schriftenreihe“ (IPN Series) in 1986. There are also the „Information-Dokumentation-Kooperation-Reihe“ (Information-Documentation-Cooperation Series), the „Gelbe Reihe“ (Yellow Series) and the „IPN-Materialien“ (IPN Materials). Internationally recognized journals like the European Journal of Science Education originated in the IPN. Professor Dr. Karl Frey edited the first edition in 1978.





1978

The Delphi Study begins. Experts from the educational and scientific areas jointly develop targets for physics education. Subsequently the long-term effects of science education are investigated in a second study, based on the level of adults' physics education.



The sculptor Herman Stehr created the piece of art which later served as the basis for the IPN logo.

1979

1980

On January 1st, 1980, the IPN became an institution of the federal state Schleswig-Holstein. The newly founded Expert Advisory Board with its Chairperson Dr. Hans Dohm, Director of the Landesinstitut Schleswig-Holstein für Praxis und Theorie der Schule (institute for school development), met for the first time on May 30th, 1980. He welcomed the board members with the words: ... The Expert Advisory Board should aim for optimal guidance for the IPN. The top priority for all the board's efforts should be the attainment of improved teaching."



The 13th International Physics Olympiad takes place in Kiel/Malente. The logo depicting the flow pattern for the Magnus effect was developed for this occasion.

1982

1984



The IPN participates in the UNESCO Conference about „Out of School Education“ in Minsk, Belarus.

1988



Professor Dr. Karl Frey receives a call to the Swiss Federal Institute of Technology Zurich. His successor as director of the institute is **Prof. Dr. Heinrich Stork** (*1931 †1997), until then head of the chemistry education department.

Research on interest

70 experts representing 30 countries from all over the world meet in Kiel for the 12th International IPN Symposium in cooperation with UNESCO. Adolescents' decreasing interest in science subjects during the course of their schooling is the focal point of this meeting and the impulse for two large-scale studies about interest in physics and chemistry. Lesson units that take students' interests into consideration are developed and the use of computers in the classroom is promoted.



Karl Frey

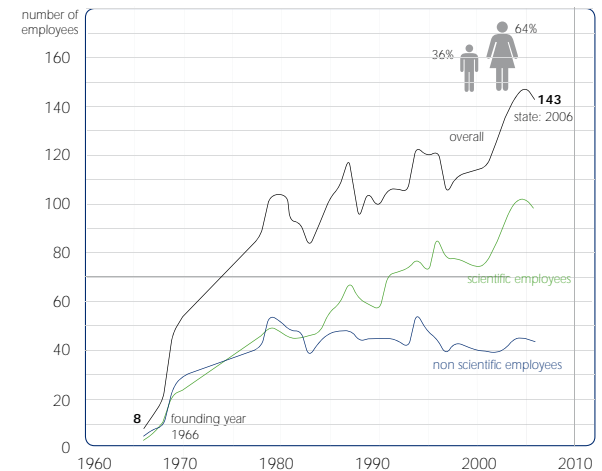
Manfred Prenzel



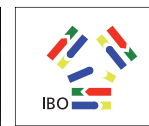
Newsletter „IPN Blätter“ 2004

The first edition of the „IPN Blätter“ is published in March. Research and development work, projects and results from science didactics are presented here. In the beginning it is to be published four times annually and free of charge for the first three years. What originally was planned for three years has meanwhile become 23 years.

human resources development 1966 – 2006



The IPN keeps on growing – during the 1980's the magic mark of over 100 employees was topped for the first time. Today there are twice as many researchers as non-researchers employed at the IPN.





Large-scale assessment

1991

1992

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1996

1997

1998



Professor Dr. Karl Hecht dies at the age of 91 in Göttingen-Geismar.

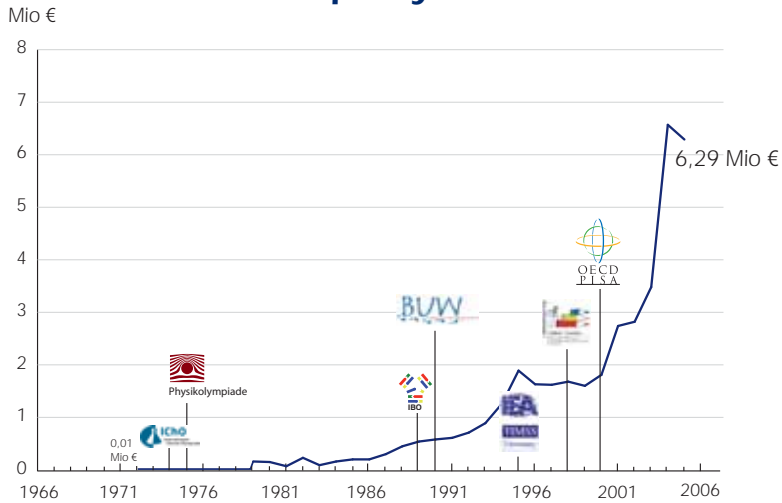
Prof. Dr. Jürgen Baumert is designated Managing Director of the IPN for the next four years. During this time research on teaching and learning becomes the focal point of the IPN's work and the acquisition of third party funding increases considerably.

The IPN coordinates the German participation in an international large-scale assessment – TIMSS (Third International Mathematics and Science Study) – for the first time. Mathematics and science education and their determiners are to be studied in an international comparison.



The IPN founds the European Initiative for Biotechnology in Education (EIBE) in conjunction with 19 other institutions in 17 countries. An understanding for biotechnology in the classroom as well as the debate in Europe are to be promoted by means of a new kind of lessons in school and in teacher training.

Third party funds



The Leibniz Association

Gottfried Wilhelm Leibniz (*1646 † 1716) who gave the Leibniz Association its name was a German philosopher, scientist, mathematician, diplomat, physicist, historian and librarian in one person. His spectrum of knowledge connects the 84 scientifically, legally and economically independent research institutes and service institutes of the Gottfried Wilhelm Leibniz Association. The IPN is one of 14 institutes in Section A Humanities and Educational Research.

The research institutes affiliated with universities in the so-called „Blue List“ launch the Leibniz Association. The IPN is a member from the beginning. Joint characteristic of these institutes is the joint financing from the national and the state levels.



The IPN ventures into new land with the execution and coordination of the nationwide BLK pilot program SINUS. Measures to improve the quality of mathematics and science education are elaborated and tested in an interstate network. This procedure for quality development in schools distinguishes SINUS from previous pilot projects in the field of education.



After Professor Dr. Jürgen Baumert moved to the Max Planck Institute for Human Development, **Prof. Dr. Horst Bayhuber** assumed the management of the IPN.



For the first time, the international Biology Olympiad, organized by the IPN since 1995 is taking place in Germany. 132 students came to Kiel from July 19th-26th.



2000



The priority program of the German Science Foundation (DFG) The quality of schools (BIQUA) starts with the IPN as coordinator. A total of 32 individual projects aim to improve the quality of mathematics and science education.



Prof. Dr. Manfred Prenzel becomes managing director of the IPN.

2003



The second PISA study in Germany is coordinated by the IPN. Researchers from Kiel and from the partner institutes entrust Professor Dr. Manfred Prenzel as the National Project Manager with the execution of the study in Germany. A total of about 45 000 students are tested in Germany for the international and the national comparison.

PISA

PISA is the abbreviation for the OECD Study „Programme for International Student Assessment“. The competency of 15 year olds in reading, mathematics, and sciences has been tested worldwide every three years since 2000. In 2000 the IPN was responsible for the national study in the sciences. It coordinated the execution, evaluation and reporting for the entire study in Germany during the various rounds. A total of 32 countries including 28 OECD countries participated in PISA 2000.



Evaluation passed

The institutes belonging to the Leibniz Association - like the IPN - have to be evaluated by independent experts every seven years. The group of experts concluded that „the IPN is successful and ... is an important contact for everyone ... who has to do with the didactics of science education“.

2004

A center for advice and quality development of school laboratories, called LeLa (Learning location Laboratory) is created at the IPN.



240 students from 61 countries participate in the 36th International Chemistry Olympiad in Kiel.

Educational standards

„are a reaction to the results of the PISA study ... to what extent the educational system can be directed using short, well-formulated standards - according to the Swedish model - in Germany.“ (IPN-Blätter 1/03) A group of experts including researchers from the IPN prepared an expertise for the federal ministry of education.



2006

The third round of PISA begins. The German part is again coordinated by the IPN. This time the sciences play a main role. The IPN is one of five international test development centers.



The renovated facade of 1970's building lends the building a new appearance. The IPN is conferred the audit berufundfamilie certificate for family-friendly personnel policy.



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