

André Giordan is known for his work on how knowledge is elaborated, both in school and outside of school, as well as during scientific research. He is especially recognized for his study of conceptions, i.e. learners' ideas, ways of reasoning and questions, and has promoted an original model, the allosteric learning model (nominated by the Grameyer Award). The model reformulates the constructivist approach. In practical terms, it provides tools and resources, specifically a didactic environment for teaching, training and popularizing science.

His work has mainly focused on three areas:

- science and technology teaching,
- environmental and sustainable development education,
- health education and the teaching of patients.

His ideas have been integrated into many other areas and contributed to the transformation of school environments. Further & they allow us to rethink museums, science popularization and the training of teachers, engineers, journalists, doctors and other health practitioners.

Also, he developed much research on the scientific method itself, and on the history of scientific concepts, for example respiration, fertilization, and sexuality, as well as regulation.

Such epistemological research completes his scientific work. In particular, André Giordan helped model the goldfish's hydro-mineral equilibrium and thus contributed to the understanding of regulatory mechanisms in living organisms, including humans.

Overall, his historical and epistemological research led him to develop the concept of physionique.

Following up on bionics, it allows us to « extract ideas » on complexity, uncertainty and organization from our knowledge of living creatures. Concretely this idea is illustrated by so-called « learning » companies.

Currently, on the one hand, he is working on paradigms, i.e. the foundations of our thought, which are considered as the self-evident, «logical» links underlying our conclusions and choices and which are never questioned. On the other hand, with regard to social mutations, he is interested in emerging knowledge.

To encourage these new fields of knowledge, he founded the International Days on Scientific and Industrial Communication, Education and Culture (Journées internationales sur la communication, l'éducation et la culture scientifiques et industrielles), which are now reaching their 25th session as well as the CECSI (Communication, Education et Culture Scientifiques et Industrielles) network.

His campaigns

Former primary and secondary school teacher, former youth club leader, he remains a « knowledge campaigner ».

His suggestions for school improvement have been integrated into several state systems (Japan, China, Venezuela, Brazil,...) and helped reformulate their organizational structure and curricula.

Directly, he continues to intervene in classrooms or clubs, which collaborate with his team. After working in the northern suburbs of Villeneuve la Garenne at the beginning of his career, where he created and led an important science club, he has continued to teach and collaborate with teachers in Priority Teaching Zones (ZEP, Montreuil, France).

Upon request, he runs discussions on science and citizenship with young people and adults. He also takes part in actions against illiteracy led by regional associations in Marseille and Toulouse (France) as well in Rio and Caracas.

Finally, he leads new action-research with reciprocal knowledge exchange networks (MRERS Mouvement des Réseaux réciproques d'échanges de savoirs) in difficult areas.

Training

André Giordan taught in several professional training schemes. In particular, he developed programs for teachers, trainers, engineers, and medical doctors upon the request of numerous European, Chinese or South-American institutions.

In addition to his courses at the university of Geneva, he participates in several graduate-level training programs in didactics (STEF Cachan, Bourgogne University), for patient education professionals (Faculty of Medicine, University of Geneva), nurses (HEP Lausanne), or in continuing education for sex educators, journalists and museologists.

His productions

Author or editor of more than 300 publications and 30 books (Centurion, PUF, Delachaux, Z

Editions, Privat, Armando Armando, Nuove Italia, Siglo XXI, Labor, Diada, Payot, Belin, Lattès, Delagrave, etc.), André Giordan has also collaborated with science popularization works (Sciences et Nature, Sciences et vie, Sciences et Avenir, La Recherche, Ça m'intéresse, M □, Vital, etc.).

As well as completing numerous consultancies and assessments, he took part in the conception or production of exhibits at Beaubourg, at the Cité des Sciences et de l'Industrie of Paris (Janus, Experimentarium, Cité des Enfants, Exploratorium, Classes Villette apprendre autrement, Désir d'apprendre), at the CERN (Microcosm), at the Paris and Bruxelles Museums, at the Alimentarium of Vevey, at the national Museum of Luxembourg, at the Musée des Cultures du monde of Lyon, miniU et miniLab (Geneva), Centre européen de Paléontologie de Gannat, of audiovisual materials (France Connaissance Média), multimedia (CERN, UE-DG13) or websites (Le petit bouquet, le café pédagogique, etc.).

Finally, he participates via publications or interviews in the following written media: Libération, La Croix, Le Courrier, Transversales, La Tribune de Genève, Nice-Matin, Patriote, etc.), television channels: TF1, FR3, RAI, TVSR, Arte, La 5, Canal+, LCI, Tv Mexico) or radio stations: France Inter, France Culture, Europe 1, Radio Suisse Romande, RSI, RMC info, RFI, Sud radio and various local stations.

Public interventions

André Giordan intervenes publicly via the media (see above), and via conferences, show-conferences or shows he conceives or produces.

His studies

After primary education at the non-confessional Saint François de Paule school, secondary education at the Risso school, followed by teacher training college in Nice, André Giordan completes a baccalaureate in sciences, and training as a primary and secondary school teacher.

He joins the Nice University science faculty, where he completes a first degree in geology (licence), and two further degrees (maîtrise) in plant biology and biology teaching. He succeeds the CAPES exam and the examination for teaching Natural Sciences (agrégation).

He then goes on for further doctoral training in animal physiology at the physiology laboratory of the Nice university led by Brahim Lahlou together with the laboratory of the zoological station of Villefranche (CEA) led by Jean Maetz.

Following his scientific education, he started a psychology degree (licence) which he completed at the university of Paris V, two degrees in sciences of education (licence, maîtrise, Universities of Paris V and Paris VIII) as well as a joint PhD in Sciences of Education (under the direction of Georges

Snyders, University of Paris V) and Biology (under the direction of René Heller, University of Paris VII) on the scientific method in schools (Georges Canguilhem and Victor Host are the other members of his thesis examination committee).

He also studied sociology, plastic art, communication, philosophy and graduate-level courses in Science History under the direction of Jacques Roger (Universities of Paris I et Paris VIII).

His academic career

Primary and secondary school teacher, research director at the INRP and at the CNRS in France, reader (chargé de cours) at Paris VII, he is chosen to be Professeur extraordinaire at Geneva University in 1980.

He created the Laboratoire de didactique et épistémologie des sciences (LDES) which he has always directed. He is promoted to Professeur ordinaire (tenured professor) in 1983, and President of the Sciences of Education Section (1992-94).

Commitments

Consultant in science and technology culture and communication with various national (Switzerland, France, Italy and Spain) and international (EU, UNESCO, OCDE, PNUE, BIE, WHO) organizations, André Giordan is president of the Commission of Biological Education (CBE-IUBS), Swiss representative of the INISTE network, former vice-president of the Association européenne de didactique de la biologie, member of the science writer association, co-president of the CECSI network and president of the associations DIRE, CISTE and the Bateleurs de la science.