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Weather, Ocean and Climate topics in Geosciences, a new subject in Norwegian upper secondary education.

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The Knowledge Promotion is the latest curriculum reform in Norwegian compulsory and upper secondary education implemented autumn 2006. The greenhouse effect, the increased greenhouse effect and the importance of the ozone layer are topics in Natural Science upper secondary year 1, but only in Programme for General Studies, chosen by less than 50% of the students. In Geography the same cohort learns about ocean and air currents and their impact on climate, and in particular conditions influencing the weather and climate in Norway. If the students during year 1 get interested in further education in weather, ocean, climate or other geosciences topics, they could continue their education on Programme for Specialization in General Studies and choose the new science subject Geosciences at years 2 and/or 3.
Among many geo-topics, Geosciences contains: climate, weather, water circulation, glaciers, atmospheric currents, weather forecasts, variations in the ozone layer, climatic development from the latest Ice Age, climate change – causes, effects and challenges, surface and deep-sea currents in oceans - causes and consequences for the climate, el Niño and la Niña – causes and influence on the climate. The students are supposed to make extensive investigations of different geosciences-parameters on their own in an outdoor field using different tools of geosciences, and on the Internet and other media, and present the results.
One serious problem introducing a new subject in upper secondary education is who are able to teach this subject. We who developed the curriculum on mission of the education ministry, had first of all teachers with a degree in natural geography in mind. To empower other interested teachers, for instance with degree in meteorology, oceanography, hydrology, geology or physics, we have given extensive in-service training and should during 2009 be able to offer further education from ½ to 1 year.
The school year 2007/2008 was the first with Geosciences as an optional choice. Ca.80 schools of max. 300 were able to give GX a 3 hours/week course, and/or G1 a 5 h/w course. In 2008/2009 it is 92 schools, and the advanced level 5 h/w course G2 has been introduced in many schools. G2 is open to all, but chosen almost only by students with G1. X1 students accomplished the ever first national written exam in G2 in May 2009.
Geosciences were introduced as an idea from the education minister, not as result of pressure from the grassroot. She wanted students to have more science subjects to choose among in upper secondary education. She hoped that Geosciences should be a vehicle for introducing new groups of students to science, and perhaps bring them to science studies on higher levels later on.
We, who developed the curriculum and are also responsible for the national exam in G2. We are of course very curious about both responses from the schools on the curriculum and the exam, and on the students' attitudes, work and learning outcome. That's why we are setting up a science education research programme from spring 2009. The further education and research programmes are made possible because of a sponsorship (EUR 1.2mill.) to our Geo-Programme 2008-2013 from the Norwegian oil and gas company StatoilHydro.
1 Unknown till May 2009