

ANKARA FEN LİSESİ (TURKEY)

DOĞAN DÖNMEZ

Ankara Fen Lisesi (Ankara Science High School) has opened in 1964 in Ankara, the capital of the Republic of Turkey. It was modelled on the Bronx High School of Science, with the financial support from Ford Foundation and USAID (US Agency for International Development), academic support from (recently founded) Middle East Technical University, Ankara University, Florida State University and TÜBİTAK (National Council for Science and Technology which was founded about the same time). I started in 1968 and graduated in 1971, among the fifth batch. From legal point of view, it was just a regular high school (3 year school, for students completing the 8th grade, mostly 14–17 year olds) with four distinguishing features:

- Students were accepted on the basis of a special two-stage test with emphasis on intellectual ability rather than knowledge.
- It was a boarding school (students whose families living in Ankara were allowed go home on the weekends).
- It had a special curriculum (science dominated and based on the “New Math” in the US).
- First batch of (Science and Mathematics) teachers were selected specially on the basis of their talents and were trained in the US for a short period.

The founding of the school coincided with the introduction of the “New Math” in the US, books written by the School Mathematics Study Group in US (and other groups in Physics, Chemistry and Biology) were translated and used as textbooks. Each year (until recently), 96 students were selected on the basis of a two stage, multiple choice exam, designed to measure “intellectual ability”. The teachers were essentially good high school teachers but they had no academic background.

The school was built on an isolated hilltop outside Ankara, inside METU campus, with no public transportation in the first 10–15 years. The school had small class size (24), very good facilities: Physics, Elec-

tronics, Chemistry and Biology laboratories, an adequate library, a sports hall and an auditorium. Students from middle and high income groups paid fees, but those from lower income groups (more than half) had their fees waived. Every year a few students dropped out for reasons of academic failure (students who failed were required to pay back the fees waived). Compared to other high schools, students had more hours (lectures and laboratory) in natural science and Mathematics courses and reduced hours in social sciences. Teaching a foreign language was also given some priority. Students had 6 days of classes; 4 full days (8 classes) and two half days (4 classes). Students lived in dorms (adjacent to the school) in rooms housing 4–6 or (a few of them) 8 students. Students had a one hour study period in the morning and two hours in the evening supervised by teachers and/or administrative personnel, some of whom (at my time) were former graduates studying at a university. In the first year biology courses, students had studied evolution in simplified form. Mathematics courses were according to “New Math” curriculum, emphasizing sets and modular arithmetic (the “New Math” curriculum was later gradually spread to all high schools in Turkey). Other science courses were also in tune with “New Math” philosophy, with lectures supported by laboratory experiments and films etc.

Students in their last (third) year, had to choose one of physics, chemistry and biology branches to study advanced (approximately college level) topics, with no classes in the other two areas. Students had the option of taking advanced math courses (equivalent to light calculus, introductory differential equations and some advanced geometry).

The school, from time to time, had academic visitors as lecturers (mostly in the first few years, numbers declining in the later years). Nobel Prize winner James Watson has delivered a lecture in 60’s.

The students were very successful at nationwide competitions and won almost every competition at high school level in Mathematics and Physics nationwide and did very well in mainly experimental project competitions in biology and chemistry held by TÜBİTAK , won even a pop music competition held by a newspaper in 1969. Graduates were given no privileges for acceptance to a university, they had (and still have) to take a nationwide exam for acceptance to a university. From the beginning, graduates of Ankara Fen Lisesi dominated the top spots in those exams even though they had a slight disadvantage due to the differences in the curriculum.

Over the years, graduates of Ankara Fen Lisesi have become well

known in universities in Turkey, some chose academic careers. The students and graduates were given some guidance on career choice in the early years, but this advice declined over the years. Majority of the graduates chose to study medicine, engineering and natural sciences and Mathematics (numbers approximately in that order). On the average, every year, 2–3 graduates chose to study Mathematics. About same number of graduates chose to study Physics or Chemistry, but these numbers (of graduates opting to study Natural Sciences) declined in late 70's and 80's. Ankara Fen Lisesi started to decline at the end 70's. In my opinion this was due to several factors: lack of sufficient funding to keep facilities modern (funding from the Ford Foundation had stopped), changes in the curriculum and retirement of the original teachers and the lack of an objective system to replace them. Social changes taking place in Turkey, in 70's, may have had some effect.

The Ministry (in 80's) opened a “Fen Lisesi” in every administrative region with populations 1–5 million but, of course, without the same facilities and teachers of same caliber. This had some effect on the student quality at “Ankara Fen Lisesi”, since some talented students chose to study at their hometown, also private educational institutions increased and started recruiting talented students, offering scholarships etc. From 90's on, after the first graduates had reached prominent positions in the public and private sector, they tried to get involved with the running of the school to stop the decline. They had some success when the minister or a high level bureaucrat was reachable. But the no real long term change has taken place, since, in my opinion, the education of the talented students was not a priority for the Ministry of Education. Nowadays, students are accepted on the basis of a common, mandatory, multiple choice exam (for all students finishing the 8th grade), with emphasis on shallow knowledge of all topics. The curriculum is the same as in all other high schools and almost no criteria for the selection of teachers.

About the Author

I was born in 1954 in Turkey. I have attended Ankara Fen Lisesi between 1968–1971 and was one the fifth batch of graduates. Afterwards I have studied Mathematics at Middle East Technical University, University of British Columbia and University of California at Berkeley. I have been working at Cukurova University since 1991. I am interested in Algebraic and Differential Topology.