

# My Teaching Experiences

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During the last ten years or so, I have several times undertaken some teaching during dips in the market.

My first experience with this was in the early 2000's. I lectured at GLOSCAT college in Cheltenham, teaching ONC/D Electronics, Electrical Principles, Maths and HNC/D Electrical Principles, Electronics, Digital Systems and Data Communications. I was a complete rookie at teaching and learned a lot from this experience, and was judged satisfactory when monitored. One thing I learned was that teaching beginners the basics is far more difficult than teaching senior students at degree level.

Beginners have difficulty in grasping concepts and are not able to think for themselves. Another thing I learned was how much standards have fallen since I did similar courses during the 1970's. All the qualifications seem to have dropped one level: hence A levels are like the old O levels, an HNC is like an ONC, and a B.Eng is like an HND - that's why the Engineering council now require you to do a 4 year M.Eng for registration - its not that its tougher, its because the standards have dropped.

Another thing I learned, is that the crucial thing for good teaching is preparation - even simple topics that you know really well need adequate preparation. Each hour of delivery needs up to two hours of prep. Therefore in working at an FE college delivering 22 hours a week requires another 40 hours for preparation, marking, and administration - a 60 hour week !! So when people envy the greater holidays teachers get, its really just time in lieu for the extra hours worked during term time. Several years later I worked at Mansfield College as a standby lecturer and Exeter College as a full time lecturer.

How things have changed. The behaviour of the students is now completely unacceptable: terrible swearing, violence, plus they will not keep quiet and listen any more. So they are impossible to teach and the standards in Maths and Science have dropped even more! So why has this happened? It all comes back to order and discipline in schools, plus the politics of education.

School children are allowed to run riot, there is no discipline and they know they can get away with it - so they do - the new Liberalism. They are now "taught to the test" in order to enhance the league table results, and there is much cheating in evidence; recently the exam boards have been telling teachers which questions will be set, so these are taught by rote, and the pupil gets a good pass - but knows nothing and has been cheated.

Its also clear that Comprehensive Education has been a complete failure. Socialism in education does not work - the Socialists know this, but are afraid to admit it, the Tories also know this but are glad there is now little competition from the Grammar schools, for those who have had a private education.

So our children suffer - they are crying out for discipline and to be educated, and meanwhile the UK has good league table results but our new generation are poorly educated and will not survive against foreign competition in the future.

As an Engineer, the thing that worries me the most is the maths ability of students. I have several times come across B.Eng. students who cannot calculate a reciprocal - even with a calculator ! It always shows up when you ask them to find the reactance of a capacitor,  $1/wC$ . They cant do it ! This should have been mastered when they were 12 years old. Also 16 year old's who have a grade C GCSE in maths, who cannot solve two simultaneous equations.

Recently I have been doing some part time private tutoring and have taught everything from GCSE right up to M.Sc level. I am continually contacted by students who are struggling because they have poor teachers in school, who are unqualified to teach the subject they are doing. Eg woodwork teachers trying to teach GCSE Electronics, retired Squadron Leaders trying to teach A level ICT, who know zero about the subject, but have been roped in to do it.

When you look at the exam boards syllabus - most of it is inaccurate or nonsense, quote " Students should be taught a logic circuit is one that has more than one input". That's strange, my table lamp has three inputs, live neutral and earth, but I'm sure it has no logic in it. It was probably written by someone with an Arts degree.

A recent 1st year B.Eng student who had not covered Matrix Algebra at A level, another who had not done Thevenins Theorem in his A level physics ... I have also had a lot of requests for cheating. A chap from Liverpool who was doing an HND "by distance" at Teeside University offered me £2000 to do his assignment for him. I refused it (but was tempted) and instead wrote to the Dean of the faculty.

A lot of foreign students from Saudi Arabia also contact me wanting their assignments doing. A Ph.D student wanting me to formalize a set of rules for him.

So what should be done? Well its obvious, return to the times when we had good education and were the envy of the world - it was not broke and did not need fixing. Bring back strict discipline, the cane - in practice 40 years ago the cane was rarely used, but it was a deterrent. Bring back apartheid in education as recommended in the 1948 education act.

In Germany they have Grammar schools and so do Holland - they are called Gymnasium. Get rid of this emphasis on course work and assignments - it encourages cheating - bring back hard exams, it the only true test. Governments must admit they have failed.