

Maintaining Educational Standards in the Face of Innovation via National Accreditation Authority.

Philip J Lloyd
South African Academy of Engineering
Energy Institute, Cape Peninsula University of Technology
PO Box 652, Cape Town 8000 South Africa
lloydj@cput.ac.za

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Summary

In South Africa, the SA Qualifications Authority oversees educational standards. It recognizes the Engineering Council of SA as the body for maintaining educational standards. ECSA works by regular visits to educational institutions, using teams of professionals from the disciplines being offered. If approved, approval is granted for three or more years. If difficulties are found, the institution is informed and given a period of grace for rectification. Some of the experiences in fostering innovation while maintaining standards are discussed. (550 characters)

Abstract

South Africa maintains a National Qualifications Framework, which is administered by the SA Qualifications Authority [SAQA]. SAQA recognizes the Engineering Council of SA [ECSA] as a council that is able to ensure educational standards meeting its requirements. Note that this does not mean that SAQA delegates its authority in any way to ECSA, merely that *de facto* SAQA accepts that in general, ECSA's acceptance of a qualification will be sufficient for SAQA to recognise the qualification.

ECSA undertakes its work by accreditation visits to educational institutions at all levels of engineering:

- Engineering programmes that have been accredited by ECSA are recognised as meeting the initial academic requirements for registration as a Professional Engineer in South Africa. International recognition of these programmes is provided through the Washington Accord.
- The BTech programme is a one-year programme undertaken after completing an accredited National Diploma, and meets the initial academic requirements for registration as a Professional Engineering Technologist with ECSA. International recognition of these programmes is provided through the Sydney Accord.
- The National Diploma is a three-year programme, including two years of academic study and one year of experiential training, and is recognised as meeting the initial academic requirements for registration as a Professional Engineering Technician with ECSA. International recognition of these programmes is provided through the Dublin Accord

Accreditation visits take place at the invitation of the institution seeking accreditation. If accredited, the accreditation is valid for a number of years, typically four. If variances are identified, then the institution is only provisionally accredited, and then required to address the variances as soon as possible.

The aims of accreditation are to:

1. determine whether graduates meet the requirements for registration as a candidate and the educational requirement toward registration as a professional in the relevant category;
2. establish whether the graduates of a programme are ready to enter engineering employment and are equipped to continue learning throughout their careers;
3. establish the international comparability of engineering educational programmes under agreements to which ECSA is a signatory;
4. encourage improvement and innovation in engineering education in response to national and global needs.

The accreditation is strictly outcomes-based. It is recognized that any engineering qualification, with its broad fundamental base, must be the starting point of a career path in one of many areas of engineering specialization through structured development and lifelong learning. The broad base allows maximum flexibility and mobility for the holder to adjust to changing needs. Thus, for example, one of the outcomes sought is that the student should:

“Demonstrate competence to identify, assess, formulate and solve convergent and divergent engineering problems creatively and innovatively.”

In this way, we believe we can achieve a consistent educational standard that also encourages innovation. Moreover, the educational institution is not bound by any preset formula as to the structure of the course offered. It is explicitly recognized that:

“The programme shall have a coherent core of mathematics, basic sciences and fundamental engineering sciences that provides a viable platform for further studies and lifelong learning.”

Provided the ‘coherent core’ is present, the institution is free to structure specialist courses to suit both its own and, hopefully, the workplaces’ needs. It can be as innovative as it wishes.