

## Abstract

### The candidate phase as a structured, funded phase of workplace training for engineering graduates

Allyson Lawless,  
South African Institution of Civil Engineering (SAICE)

This paper describes the process involved in developing Built Environment Professionals commencing with good schooling and career awareness all the way through the tertiary phase and workplace training to continuous professional development of experienced professionals. It argues for the need for a candidacy phase to develop professionals.

This process is viewed through the lens of historical development especially in the late 1980s and 1990s which saw a major drive worldwide to address inequalities in education and training, to make it accessible to the masses and to address the needs of the growing employment demands of the knowledge society. This process is typified as a movement away from a behaviourist approach to education, characterised by rote learning and covering vast knowledge-based syllabi, towards an outcomes based approach which encourages learners to understand processes and create their own appropriate knowledge as and when required, in order to develop a culture of lifelong learning. To achieve this transition, every stage of education was reviewed and set at levels relevant to and achievable by the majority of learners, in the quest to satisfy the *Education For All* movement (UNESCO World Conference on Education for All in 1990), and the *No Child Left Behind* philosophy (Paige 2006).

It is argued that the focus on process rather than principle meant that graduates do not learn to apply their theory but instead need to follow processes rigidly. Consequently, where a situation appears to be unknown the graduate will rarely recognise the similarity to previous experiences and will need significantly more hand-holding than in the past. As a result of all the changes employers must now bear the costs which were previously borne by the government through the education system, in other words, the gap between formal education and the requirements of the profession has increased and more training is required in the workplace, which will take longer than is the case when it takes place within the education system, and is more costly.

In addition, it is indicated that interventions are required at each stage of the education and training process to ensure the availability of quality professionals to serve the industry. The paper indicates that significant levels of registration only take place once graduates are in their thirties, indicating a nine to eleven year sojourn in the workplace before becoming registered (Lawless, 2005). This is a significant increase over the period to registration of previous generations who were able to register within four or five years after graduation. These findings are compared to those of a similar study done in the United Kingdom which showed that by the turn of the century Civil Engineers were taking eight to nine years to register, versus three or four years in the past.

The paper concludes by indicating that the experienced workforce is ageing and under pressure with little or no time to offer training whilst the incoming cohort requires much support, as many have had an inadequate education in terms of numeracy, literacy and problem solving. It is therefore argued that it is essential that a workplace training phase be developed as a funded phase of training to allow industry to offer the extended support necessary to develop competent young professionals ready to take over from the ageing Engineering workforce.

## References

- Paige, R. 2006. No Child Left Behind: The Ongoing Movement for Public Education Reform. *Harvard Educational Review*. 76:4: 461-473
- Lawless, A. 2005. Numbers and Needs: Addressing imbalances in the civil engineering profession. SAICE. 165

*For more information on this research, contact Allyson Lawless at:*

*Tel:* 011 476 4100

*Cell:* 082 449 2184

*Email:* [allyson@ally.co.za](mailto:allyson@ally.co.za)