

# Chapter 10

## A Self-Paced Flexible ‘Learning While Earning’ Process

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### ABSTRACT

*Three of the professions directly related to the construction industries by which Central Queensland University’s undergraduate Built Environment programs are accredited, form the foci of this chapter. The students enrolled in those programs are working in the relevant industries during their part-time external studies. Although learning while working ‘on the building site’ has been known since human beings first began constructing shelter, relevant background theories of philosophy and psychology have been introduced here and utilised to provide substantive support for a debate regarding the mixture of formal and informal opportunities for work-integrated learning to which these students are introduced. The strengths and weaknesses of flexible external studies, as well as the nature of their workplace-based learning in these programs, are discussed at length. Greater emphasis is placed on the need to capitalise on the many opportunities for reinforcement of, and reflection about principles and practices introduced in either or both their employment and/or undergraduate studies, than merely on the advantages or disadvantages of flexible external studies. These students’ truly work-integrated learning experience may be considered to be a ‘self-paced flexible learning while earning’ process.*

### INTRODUCTION

#### History of Construction

In education, there are few more famous and frequently quoted truisms (cited in equally frequently varied interpretations) than that attributed

to Confucius (541-479 BC); “Tell me and I will forget. Show me and I may remember. Involve me and I will understand”. Not surprisingly, in any of its re-interpretations, it is an eminently suitable support for work-integrated learning and is entirely relevant for students who aspire to become qualified construction managers, building designers or building surveyors and certifiers.

DOI: 10.4018/978-1-60960-547-6.ch010

## ***A Self-Paced Flexible 'Learning While Earning' Process***

History and anthropology abound with theories of cave dwellers and nomadic tribes throughout the 'hunter gatherer' phase who adapted the caves or constructed rudimentary shelter. The subsequent beginnings of agricultural and animal husbandry pursuits brought with them the creation of more permanent dwellings from timber, earth and rock in the bush and on the plains for the more settled tribes and the development of more sophisticated transportable shelter for the nomads using animal hides for cladding their tents (Risebero,1979).

The feats of the builders of Stonehenge, for which the huge stones were believed to have been shaped with stone hammers before their erection, continue to amaze us (Field 2007, p13) as do the pyramids (pp14-15). The same awe is inspired by the feats of the early designers and builders who constructed huge buildings (fortresses, cathedrals, and similar) in many countries many hundreds of years ago without any of our modern equipment such as cranes.

From the plethora of historical theories of early construction, it may safely be assumed that all of those designers and builders (whether the early primitive humans building their own shelter or slaves building huge structures under continual supervision) learned how to design and build by being actively involved in the design and building processes, thus the earliest version of 'learning on the job' (Field, 2007; Risebero, 1979).

In primitive times the building of shelter had been traditionally undertaken by the tribes; the men in some cultures and the women in others. As civilisation developed and settlements grew, so the roles changed and building began to be undertaken by specialist groups.

So too, did the ways of learning those skills change and develop from the family or community groups adapting or building their own shelter to the specialist builders encompassing the whole spectrum of the ever-widening gap between the smaller buildings constructed by a few and the huge projects requiring hundreds of workers.

The roles of master and apprentice soon came into play, and again it is assumed from the wealth of historical records that the learning process for the apprentice was undertaken 'on the job'. In more recent centuries the theoretical aspects of the technical training of building apprentices, designers and surveyors had taken place outside of the worksite. For example, in the mid-twentieth century; one night a week plus perhaps one day a fortnight of classes was prescribed for building apprentices to provide the theoretical knowledge to back up their practical skills developed on the building site.

The latter part of the twentieth century saw the growth of undergraduate programs to provide university qualifications for higher levels of the previously 'trade-based' professions. This meant that persons whose skills may have been more practical than intellectual or academic were facing new challenges. This process is continuing into the early part of the twenty first century.

### **Structure of the Programs**

At Central Queensland University, the School of Engineering and Built Environment offers the Built Environment suite of programs, which incorporates three streams of study that are relevant to the professions of;

- Construction management
- Building design, and
- Building surveying and certification.

These are offered as the following six undergraduate awards;

- Bachelor of Construction management - comprising four years equivalent full-time study load (EFTSL)
- Bachelor of Building surveying and certification (4 years EFTSL) from which there are two exit awards;

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